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OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

May 6, 1969 Volume 862 Number 1

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of March 1969

Examiner affirmed	126
Examiner affirmed in part	22
Examiner reversed	24
Total	172

Adverse Decisions in Interferences

In the designated interferences involving the indicated claims of the following patents final decisions have been rendered that the respective patentees were not the first inventors with respect to the claims listed.

Patent No. 3,196,629, R. E. Wood, REFRIGERATION HEAD PRESSURE CONTROL SYSTEMS, decided Dec. 19, 1968, Interference No. 95,474, claims 1, 2, 3 and 4.

Patent No. 3,221,548, J. C. Wilson, COMBINATION LOGGING SYSTEM AND METHOD, decided Mar. 14, 1969, Interference No. 95,879, claims 1, 2, 3, 4, 5, 6, 7 and 8.

Patent No. 3,233,036, L. Jachimowicz, CORROSION PROOF SHIELDING TAPE FOR SHIELDING TELEPHONE CABLES, decided Nov. 18, 1968, Interference No. 96,081, claims 1, 2, 3, 4, 5 and 6.

Patent No. 3,270,066, H. Von Brachel, SUBSTITUTED POLYHALOCYCLOPENTADIENES AND PROCESSES FOR THEIR PRODUCTION, decided Mar. 10, 1969, Interference No. 95,796, claim 2.

Patent No. 3,271,477, E. N. Kresge, GRAFTED TERPOLYMERS, decided Feb. 13, 1969, Interference No. 95,973, claims 1, 2, 3, 5, 6, 7, 9 and 11.

Patent No. 3,286,068, A. R. Norden and G. W. Knecht, HALF-WIDTH CIRCUIT BREAKER ADAPTER ARRANGEMENT, decided Mar. 14, 1969, Interference No. 95,868, claims 1, 2, 3 and 4.

Patent No. 3,363,390, J. Crane and G. C. Fulmer, EXTRUDED PLASTIC PANEL-FRAMING STRIP HAVING INTEGRAL RIGID BODY SECTION AND RESILIENTLY FLEXIBLE PANEL-GRIPPING FLANGES, decided Feb. 12, 1969, Interference No. 96,414, claims 1 and 2.

Disclosure Document Program

On November 23, 1968, a notice proposing a Disclosure Document Program was published in the Federal Register (33 F.R. 17370). Interested persons were given over 30 days in which to submit written comments, suggestions, or objections regarding the proposed program. Full consideration has been given to all comments that were received in response to the public notice.

Effective immediately and until further notice, the Patent Office will accept and preserve for a period of at least 2 years "Disclosure Documents" which may be used as evidence of conception of an invention. A Disclosure Document may be any paper which discloses an invention and is signed by the inventor(s) and is forwarded to the Patent Office by any one of the inventor(s), the owner or the attorney or agent of the inventor(s) or owner. It is not a patent application, nor will its receipt date in the Patent Office in any way become the effective filing date of a later-filed application. However, like patent applications, these documents will be retained in confidence by the Patent Office.

The value of the conventional properly witnessed and notarized records as evidence of conception of an invention is not diminished. This program is being made available as a service to those persons desiring to use it. A Disclosure Document should be a more creditable form of evidence than the "self-addressed envelope" form of evidence often used by inventors.

Although there are no restrictions as to its content and claims are unnecessary, the benefits obtainable from a Disclosure Document will depend directly upon the content and adequacy of its disclosure. Therefore, it is strongly urged that the document contain a clear and complete explanation of the manner and process of making and using the invention in sufficient detail, that at least a person having ordinary knowledge in the field of the invention would be able to make and use the invention. When the nature of the invention admits, a drawing or sketch should be furnished. The use or utility of the invention should be described, especially in chemical inventions.

A Disclosure Document will be destroyed 2 years after its receipt date unless it is referred to in a separate paper filed in a related patent application within said 2-year period. In a new patent application, The Disclosure Document may be referred to in the letter of transmittal. Disclosure Documents, if accepted, will not be returned. Unless it is desired to rely upon a Disclosure Document as evidence, it need not be referred to in the file of a later filed patent application. However, if the Disclosure Document is referred to, the Document will be preserved by the Patent Office similarly to patent applications.

The Disclosure Document must be limited to written matter or drawings on paper or other thin flexible material, such as linen or plastic drafting material, having dimensions, or being folded to a size, not to exceed 8½ by 13 inches. Photographs will also be acceptable. Each page should be numbered and have permanent indicia sufficiently dark to allow copying by ordinary reproducing equipment.

In addition, each Disclosure Document, when submitted, must include a fee of $10, a stamped, self-addressed envelope and a separate paper, in duplicate, signed by the inventor stating that he is the inventor and requesting that the enclosed material be received for processing under the Disclosure Document Program. The papers will be stamped by the Office with an identifying number and receipt date, and the duplicate request returned in the self-addressed envelope together with a notice. This notice will indicate that the Disclosure Document may be relied upon only as evidence and that a patent

New Applications Received During February 1969

Patents	7698
Designs	394
Plant Patents	10
Reissues	41
Total	8143

Issue—May 6, 1969

Patents	1300	No. 3,441,960 to No.	3,443,259, incl.
Designs	116	No. 214,008 to No.	214,123, incl.
Plant Patents	4	No. 2,882 to No.	2,885, incl.
Total	1420		

application should be diligently filed if patent protection is desired.

The request may take the following form:

The undersigned, being the inventor of the disclosed invention, requests that the enclosed papers be accepted under the Disclosure Document Program, and that they be preserved for at least a period of 2 years.

EDWARD J. BRENNER,
Commissioner of Patents.

Approved: Mar. 26, 1969.
ALLEN V. ASTIN,
Acting Assistant Secretary for Science and Technology.

[F.R. Doc. 69-3805; Filed, April 1, 1969; (8:48 a.m.]

Published in 34 F.R. 6003, Apr. 2, 1969

Adjudicated Patents

(D.C. Ala.) Fitko Patent No. 2,706,163 (117—72), for COATED SAND AND METHOD OF PRODUCING SAME, *Held* invalid, obvious and infringed. *Arthur J. Schmitt Foundation* v. *Stockham Valves and Fittings*, 292 F. Supp. 893; 159 USPQ 705.

(D.C. Ala.) Fitko et al. Patent No. 2,706,188 (260—38), for PRODUCTION OF RESIN COATED PARTICLE MATERIAL, *Held* valid and not infringed. *Id.*

(D.C. Ala.) Bean Patent No. 2,914,823 (22—126), for CASTING MOLD AND PATTERN AND PROCESS. Claim 1 *Held* valid and infringed. *Id.*

(D.C. Ala.) Bean Patent No. 2,991,267 (260—38), for COATED SAND AND METHOD OF MAKING SAME. Claims 1-3, 5, 6, 8-11, and 16 *Held* valid and infringed. *Id.*

Disclaimers

3,321,714.—*Ping K. Tien*, Chatham Township, Morris County, N.J. LIGHT MODULATING SYSTEM. Patent dated May 23, 1967. Disclaimer filed Oct. 23, 1968, by the assignee, *Bell Telephone Laboratories, Incorporated.*

Hereby enters this disclaimer to claim 3 of said patent.

3,427,645.—*Fred C. Sproul*, Anaheim, Calif. HOUSING DEVELOPMENT LAYOUT. Patent dated Feb. 11, 1969. Disclaimer filed Jan. 21, 1969, by the inventor.

Hereby disclaims the terminal portion of the term of the patent subsequent to Aug. 6, 1982.

Certificates of Correction for the Week of May 6, 1969

Re. 26,356	3,355,455	3,367,355
3,156,331	3,356,731	3,368,280
3,213,581	3,357,799	3,368,343
3,283,030	3,358,233	3,368,470
3,288,674	3,358,728	3,368,649
3,303,794	3,359,209	3,368,915
3,310,696	3,361,046	3,369,540
3,318,831	3,361,309	3,370,074
3,322,557	3,361,778	3,370,302
3,340,685	3,364,834	3,370,357
3,340,951	3,364,884	3,370,685
3,346,536	3,365,418	3,370,911
3,347,867	3,365,779	3,371,310
3,349,367	3,366,508	3,372,092
3,350,497	3,367,133	3,385,637
3,354,390	3,367,318	

Classification Order No. 397

Classification Order No. 397, dated Apr. 18, 1969, incorporates changes in the following classes:

4, BATHS, CLOSETS, SINKS AND SPITTOONS
17, BUTCHERING
24, BUCKLES, BUTTONS, CLASPS, ETC.
29, METAL WORKING
40, CARD, PICTURE AND SIGN EXHIBITING
129, PAPER FILES AND BINDERS—(Abolished)
209, CLASSIFYING, SEPARATING AND ASSORTING SOLIDS
211, SUPPORTS, RACKS
220, METALLIC RECEPTACLES
281, BOOKS, STRIPS AND LEAVES
292, CLOSURE FASTENERS
402, BINDER DEVICE RELEASABLY ENGAGING APERTURE OR NOTCH OF SHEET—(Established)

All changes will be incorporated in the Manual of Classification replacement pages dated July 1969.

E. C. DARSCH,
Acting Patent Documentation Administrator, Office of Examining and Documentation Control.

New Procedure for Handling Certificates of Correction

In compliance with amended Rules 322 and 323, and to expedite the issuance of certificates and reduce printing costs, practitioners are urged to submit the text of the certificate on a special form which could serve as the final copy for use in direct process reproduction (offset printing) of the certificate of correction. The *request* for issuance of the certificate (together with the fee where the error is due to applicant's mistake) should be in a separate letter accompanied by two copies of the form and a self-addressed envelope.

Where the recommended format is used and approved, one copy of said form, duly certified, will be returned to the patentee for attachment to his copy of the patent. This will eliminate the present necessity for returning the patent when requesting a certificate. The other copy of the form will be used for direct offset printing of copies of the certificate which, as heretofore, will be attached to every printed copy of the patent subsequently sold or distributed.

Copies of the form are obtainable for reproduction purposes from Correspondence and Mail Branch and from the receptionist in Bldg. 3, Crystal Plaza. Below is a sample form illustrating a variety of corrections and the suggested manner of setting out the format. Particular attention is directed to:

a. Identification of the exact point of error by reference to column and line number of the printed patent.
b. Conservation of space on the form by *typing* single space, beginning two lines down from the printed message.
c. Starting the correction to each separate column as a sentence, and using semi-colons to separate corrections within said column, where possible.
d. Two inch space left blank at bottom for signature of attesting officer.
e. Use of quotation marks to enclose the exact subject matter to be deleted or corrected; use of double hyphens (--) to enclose subject matter to be added, except for formulas.
f. Where a formula is involved, setting out only that portion thereof which is to be corrected.

Where the recommended format is not used or where the nature of the subject matter is such that it is more expedient to print by the direct image offset technique, e.g., entire sheet(s) of drawing or page(s) of specification omitted, multiple pages of corrections, intricate chemical formulas, etc., Issue and Gazette Branch will prepare the certificate as heretofore. Patentee will receive a copy for attachment to his copy of the patent.

RICHARD A. WAHL,
Assistant Commissioner.

Apr. 1, 1969.

(Format on next page.)

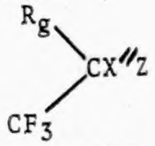
UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 5,667,999 Dated April 1, 1969

James W. Worth

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

In the drawings, Sheet 3, Fig. 3, the reference numeral 225 should be applied to the plate element attached to the support member 207. Column 1, lines 45 to 49, the left-hand formula should appear as follows:



Column 2, formula XXXV, that portion of the formula reading



should read



Formula XXXVII, that portion of the formula reading "-CH_2CH-" should read -CH_2CH_2-. Column 2, line 68 and column 3, lines 3, 8 and 13, the claim reference numeral "2", each occurrence, should read -- 1 --. Column 10, line 16, cancel beginning with "12. A sensor device" to and including "tive strips," in column 11, line 8, and insert the following claim:

12. A control circuit of the character set forth in claim 1 and for an automobile having a convertible top, and including; means for moving said top between raised and lowered retracted position; and control means responsive to said sensor relay for energizing the top moving means for moving said top from retracted position to raised position.

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF APRIL 21, 1969

PATENT EXAMINING GROUPS	Actual Filing Date of Oldest New Case Awaiting Action
*Denotes oldest new application.	
CHEMICAL EXAMINING GROUPS	
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—M. STERMAN, Director. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	4-03-67
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Director. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	8-02-66
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—L. J. BERCOVITZ, Director. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping, and Treating Processes.	1-10-67
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—M. STERMAN, Acting Director. Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	*6-26-66
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Director. Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	1-04-67
ELECTRICAL EXAMINING GROUPS	
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—W. S. COLE, Director. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	5-19-67
SECURITY, GROUP 220—S. BOYD, Director. Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	8-29-66
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—S. BOYD, Acting Director. Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	*5-25-66
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Director. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	2-07-67
PHYSICS, GROUP 280—R. L. EVANS, Director. Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	6-15-67
DESIGNS, GROUP 290—S. BOYD, Director. Industrial Arts; Household, Personal and Fine Arts.	6-05-68
MECHANICAL EXAMINING GROUPS	
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Director. Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	8-30-67
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Director. Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders Woodworking; Tools; Cutlery; Jacks.	*4-21-67
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Director. Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	5-02-67
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Director. Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	2-20-68
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Director. Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	11-20-67
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—F. H. BRONAUGH, Director. Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	8-31-67

Total number of pending applications (excluding Designs)	185,103
Total number of Design applications pending	3,398

Expiration of patents: The patents within the range of numbers indicated below expire during May 1969, except those which may have expired earlier due to shortened terms under the provisions of Public Law 690, 79th Congress, approved August 8, 1946 (60 Stat. 940) and Public Law 619, 83rd Congress, approved August 23, 1954 (68 Stat. 764), or which may have had their terms curtailed by disclaimer under the provisions of 35 U.S.C. 253. Other patents, issued after the dates of the range of numbers indicated below, may have expired before the full term of 17 years for the same reasons, or have lapsed under the provisions of 35 U.S.C. 151.

Patents	Numbers 2,595,214 to 2,598,658, inclusive
Plant Patents	Numbers 1,091 to 1,100, inclusive

ADDRESS OF HONORABLE EDWARD J. BRENNER

Prepared for Delivery Before the American Patent Law Association Spring Meeting, New York, N. Y., Friday, May 2, 1969

It is a pleasure to be here today to address the American Patent Law Association at its Spring Meeting. I would like to take this opportunity to summarize for you the highlights of Patent Office activities during my five years as Commissioner of the United States Patent Office.

Patent Examining

In the latter part of fiscal 1964, studies were conducted to project the backlog and pendency of patent applications in the future if no significant changes were made in ongoing procedures. These studies indicated that at the end of fiscal 1964 the backlog would be approximately 220,000 applications and that the average pendency of patent applications from filing to issue would be more than three years. These studies also indicated that in another five years, the backlog would have grown to approximately 300,000 applications, and the period of pendency would have increased to approximately five years.

In order to reverse the above-mentioned trends, the streamlined examination program was initiated at the beginning of fiscal 1965. The announced short-range goal was the disposal of 100,000 applications per year over the next five-year period, as compared with an average annual rate of approximately 76,000 disposals in the two previous years. The announced long-range goal was to issue patents on all cases, other than those going to appeal or interference, within 24 months, with the average being 18 months.

As a result of the efforts of the patent examining corps and the cooperation of the patent bar, it has been possible to reduce the backlog of pending patent applications from 220,000 down to approximately 180,000 at the end of fiscal year 1969. In addition, the average period of pendency has been reduced to about 2½ years. The disposals of patent applications over the five-year period will actually be approximately 100,000 cases per year.

In the case of design patents, it is encouraging to note that our Design Examining Operations are now essentially current.

It is also important to note that the Office of Patent Services and the Examining Support Division provided important support to our overall patent operations by handling a substantial increase in workload with only a modest increase in staffing.

Various specific steps were taken to facilitate patent examination. These included supplying copies of references in the examiners' files of pending applications, and also supplying copies of these references free of charge to applicants with Office actions. In addition, increased utilization of the telephone to facilitate examination and prosecution was employed. Further, examiners were asked to assist applicants by early indications of allowable claims and allowable subject matter. Also, charging of fees to deposit accounts was initiated.

Guidelines for preparing model patent applications were issued. Various changes were directed at liberalizing formal requirements, such as authorizing the use of a declaration instead of an oath, permitting alternative expressions in claims, and a trial program was conducted on multiple dependency of claims. Also, a streamlined continuation practice was initiated to simplify the filing of continuation applications.

Studies also indicated a need to strengthen the Patent Examining Corps by the addition of 150 more examiners to meet our overall goals within a reasonable period of time. To date, it has been possible to add about 75 of these additional examiners. Also, a substantial shift of manpower from the mechanical examining groups to the chemical and electrical examining groups was carried out to better balance manpower with workload, that is, patent filings and backlog. The number of Examining Groups was reduced from 31 to 16, and Art Units averaging approximately 10 examiners were organized and headed by Supervisory Primary Examiners. The Examining Group Director positions were upgraded to supergrade level. A promotion program for examiners was initiated under which it was possible for a good examiner to advance to the position of Primary Examiner after approximately five years in the Office. Turnover of examiners was reduced from about 18% to 20% a year down to approximately 12% to 14% per year.

A quality audit program was initiated; first on a trial basis and then on a continuing basis. Under this program, a sample of allowed applications is regularly audited for three major items, namely, (*a*) practice and procedure, (*b*) field of search and classification, and (*c*) judgments relating to Sections 102, 103 and 112 of the statute. The results of the quality audit program and an in depth study of patent quality indicated that the aforementioned productivity increases were achieved without any significant sacrifice in patent quality. A study has recently been initiated to develop a patent search quality model to assist in developing a further understanding of the important matter of patent search quality.

During the past five years, more than 300,000 United States patents have been issued, and the normal average annual rate now runs approximately 70,000 patents per year. Due to expenditure limitations in fiscal years 1968 and 1969, a backlog of approximately 10,000 patents to be printed has accumulated. The fiscal 1970

budget request to Congress includes sufficient funds to print off this backlog of patents during fiscal 1970.

A number of new special programs were initiated in the patent area. A defensive publication program has now been in effect for nearly a year. A second phase of the defensive publication program has recently been published for comment. The first phase of the defensive publication program applies to applications which have not received a first action, whereas the second phase of the defensive publication program would apply to applications which have received a first action. A disclosure document program has been initiated wherein, for a small fee, a disclosure of an invention may be deposited in the Patent Office. Also, a new program under which applications may be taken up special was initiated. Commencing in 1966, an abstract of the technical disclosure was required in each patent application. The Patent Abstract Journal was subsequently initiated to provide better service to the scientific, engineering, and business community, and the general public. The international patent classification is now indicated on issuing United States patents.

During the past five years we also commemorated the 175th anniversary of the United States Patent System and, in this connection, received the Silver Anvil Award of the Public Relations Society of America for this program. We also commemorated the issuance of Design Patent 200,000 and Plant Patent 2,500. A Speakers' Bureau was organized to increase the knowledge of the patent system to the public. An annual conference was established for briefing scientists and engineers from the academic community on the operations of the United States patent system and the United States Patent Office.

Patent Interferences and Appeals

At the end of fiscal 1964 the number of pending interferences stood at approximately 2,100 and was increasing at a substantial rate. This trend was reversed and, at the end of fiscal year 1969, the number of pending interferences will have been reduced to about 800, which is close to a current operation. A proposed procedure to permit a party to present testimony through affidavits is now under consideration.

The number of pending appeals before the Board of Appeals has been reduced from approximately 4,400 at the end of fiscal 1964, to approximately 3,000 at the end of fiscal 1969, which represents nearly a current operation. This has been accomplished despite an increased number of appeals which were generated at the beginning of the startup of the streamlined examining program. A new procedure was initiated in which an applicant was not required to file a notice of appeal until one month after the response date set in the final rejection in which a shortened statutory period for response was set, provided a timely response was filed. A program under which examiners could participate at oral hearings before the Board of Appeals was also initiated.

The Solicitor's staff has carried an increased workload with essentially the same staff as in the past, and has been involved in a number of major patent questions. In a landmark case (*Brenner* vs. *Manson*), the Supreme Court held that decisions of the Court of Customs and Patent Appeals could be reviewed by the Supreme Court. The general question of whether computer programs are patentable under present law is now before the Court of Customs and Patent Appeals. A related question in this important area is whether an alternative form of protection should be provided for computer programs in any event. Another major matter is the question of increased allegations of fraud on the Patent Office. On this important subject the Patent Office has recently initiated discussions with the patent bar to determine the feasibility of developing guidelines on the subject.

Modernization and Mechanization

Over the course of the past several years the microfilming of the more than 3,400,000 United States patents which have issued to date has been completed. As a first step in the increased use of microfilm in the Patent Office, a Patent Copy Fulfillment System has been placed in operation. This system permits quick production of paper copies of patents from microfilm chips in those cases where the original supply has become exhausted. The system thus provides better and faster service to the public and also reduces the cost of supplying such copies.

We have also recently worked out arrangements to receive, starting within the next year, English language abstracts of non-duplicate foreign patent documents in which the U.S. classification and cross-references will be indicated. This new program should substantially increase the effective utilization of our patent search files and thus the quality of our patent searching. A future plan under consideration would include the construction of aperture cards for these patent documents in which the English language abstract would appear in the first frame followed by the full text of the foreign patent document in succeeding frames.

An additional future use of microform will involve the conversion of our classified search files to microform aperture cards. The Office presently has contracts for the construction of a master *serial* number set of United States patents in aperture card form, and for the subsequent construction of a master *classified* set of United States patents in aperture card form. Within the next several months we expect the delivery of four advanced pilot microform viewers which will be utilized in conducting experiments on patent searching with microform aperture cards. The Office is also presently developing plans for the establishment of satellite search centers in various places in the country which would provide copies of United States and foreign patents in classified arrangement in aperture cards for searching purposes.

The results of our research and development on mechanized search are now beginning to pay off with the implementation of additional mechanized search systems. For example, within fiscal 1969, the number of patent documents which will be in mechanized search systems will increase from approximately 100,000 to 160,000 documents. In addition, recent experiments have developed a new technique which may substantially reduce indexing cost and time without adversely affecting search quality, and thus make possible a substantial increase in the number of mechanized search systems which can be brought into existence within the next several years. A new Office of Documentation has been established which will be responsible for classification activities as well as the establishment of mechanized search systems in our examining operations.

A number of changes have also been made in the structure of ICIREPAT, which was the organization formed a number of years ago among examining patent offices of the world to cooperate in the field of mechanized searching. First, the scope of activities of this organization has been expanded from mechanized search to include all aspects of patent documentation, including microform. Second, the organization has now been formalized as a technical committee under the Paris Convention, with BIRPI serving as the internation secretariat.

We have recently initiated a plan to test out computerized searching of patent abstracts later this year. Under such a system the examiner would keyboard in his patent search question to a computer and the results of the search would be displayed on a cathode ray console. Also, we have initiated plans for experiments on the computerized search of the full text of patent documents and studies on the use of optical character readers for putting in machine form the full text of already issued patent documents.

The Patent Office's new data base program is expected to get underway within the next several months. Under this program, full information relating to allowed applications, including the full text of the application itself, will be placed in machine language. This will then start building a bank of the full text of U.S. patents for future full text computerized searching. The program will also provide a greatly improved management information system for the Patent Office. And finally, the program will make possible the printing of United States patents in the future by computer photocomposition. The creation of the data base and the printing of patents by computer photocomposition can be carried out at a cost of 30% less than it now costs us to print United States patents by conventional hot metal techniques. It is planned to provide a new front page format for the patents printed by computer photocomposition, and we have recently published a sample of this front page format and requested comments from the public. It is anticipated that full conversion to the new system can be effected within the next several years.

Legislation

In 1965 the Congress passed a bill increasing patent fees. The effect of the fee bill was to increase Patent Office income from approximately $8,000,000 a year up to approximately $24,000,000 a year. This increased the level of recovery of Patent Office costs from approximately 30% to approximately 75%.

The Presidential Commission was established in 1965 to study the patent system and to make recommendations for the future. The Commission conducted its studies in 1965 and 1966, and late in 1966 its report to the President was published. The Patent Reform Bill, which included most of the recommendations of the Presidential Commission, was introduced into the Congress in 1967. Several other alternative bills were also introduced into Congress. Hearings were held on the various bills in both the House and the Senate in 1967 and 1968.

These events stimulated an extensive and intensive discussion and study of the United States patent system throughout the country. It can probably be expected that there will be a revision of the United States patent laws within the next several years, and it appears quite likely that these revisions will include a 20-year patent term measured from filing date, assignee filing, and a reexamination period after patenting. One of the major unsolved questions is the matter of permitting proof of acts abroad in interferences. The decision on this proposed change could have an important effect on our international relations, including the question of the accessibility of United States patent applicants to the proposed European patent.

International Patent Activities

Studies conducted in 1964 indicated an increased international dimension for both the United States Patent Office and United States patent applicants. For example, these studies indicated that the number of inventions on which patent coverage was being sought by U.S. applicants was essentially constant each year. Further, the increase in applications filed each year by foreign applicants in the United States Patent Office was increasing, and was the basic reason for the increased number of patent filings in the United States Patent Office. Also, these studies indicated that U.S. applicants were each year filing more patent applications in more foreign countries. On a worldwide basis, the same trends were observed. Thus, the number of inventions on which patent coverage was being sought was remaining essentially constant, but the number of patent applications being filed throughout the world was increasing substantially, with the increase in each country resulting essentially from applications originating from foreign countries. These trends were creating increasing difficulties for patent offices in having to examine ever-increasing numbers of patent applications, and creating increased costs and difficulties for patent applicants as a result of the increased number of applications they had to file to obtain adequate protection, particularly where the formalities and procedures for patent filing differed from country to country. These trends have continued over the past five years and appear to have resulted particularly from the increase in international trade.

In recognition of the growing international dimension of our patent activities, the Office of International Patent and Trademark Affairs was established in 1964. Bilateral programs involving joint studies, search exchanges and examination exchanges with other countries have been initiated with a number of other countries, including West Germany, United Kingdom, France, Canada, Netherlands, Switzerland, Sweden, Czechoslovakia, Austria, Japan and the Philippines. A professional training program was initiated under which examiners from the United States Office and the following countries were exchanged: West Germany, Japan, Canada, United Kingdom, Netherlands and the International Patent Institute at The Hague.

In view of the increasing problems of patent offices and patent applicants worldwide, the United States introduced a resolution at the Executive Committee meeting of the Paris Union in 1966 calling on BIRPI, the international secretariat of the Paris Convention, to

develop a plan for reducing or eliminating such problems. The result of this resolution, which was passed unanimously by the Executive Committee of the Paris Union, was the proposed Patent Cooperation Treaty. Drafts of the treaty were issued in 1967, 1968 and in 1969, each of which have been discussed at international meetings in Geneva, Switzerland. A joint resolution of the Departments of State and Commerce has been forwarded to the Congress, requesting authorization to hold a diplomatic conference on the proposed Patent Cooperation Treaty in Washington in fiscal year 1970. If the proposed Patent Cooperation Treaty comes into existence, it would be hoped that through the utilization of international search reports and examination reports, to the extent they could be used consistent with United States patent practices, it would be possible to offset the increased workload on the United States Patent Office created by an ever-increasing number of patent applications being filed by foreign applicants.

Trademark Operations

A streamlined trademark examination program was initiated several years ago to facilitate the examination of trademark applications. As a result, it has been possible to maintain the currency of our trademark examining operations with present staff despite an increase in trademark filings over the past five year period from 25,000 to 30,000 applications per year. We also initiated a special examining procedure in trademark operations in which prompt early examination was authorized upon request of applicant. We have recently been conducting an experiment in making trademark searches by computerized searching techniques.

The Trademark Trial and Appeal Board has maintained its work on a current basis despite an increased workload. A program was initiated permitting examiners to participate in oral hearings before the Trademark Trial and Appeal Board on ex parte cases.

During the past year we started placing international trademark classification symbols on our registered trademarks. We have recently proposed that the United States Patent Office adopt the international trademark classification as its official classification.

For the past several years we have conducted studies and discussions throughout the country on the question of the possible adherence of the United States to the international trademark agreement known as the Madrid Agreement. The consensus of private groups in the United States appears to be that the United States should participate in an international trademark filing arrangement, but that the present Madrid Agreement is not adequate for United States interests and that it would be necessary to modify the Madrid Agreement leading to a new international agreement. We expect that the United States will be invited to attend a working group this fall which will be held at BIRPI in Geneva to discuss possible modifications of the Madrid Agreement. It is also contemplated that any such modifications of the Madrid Agreement leading to a new international trademark filing arrangement might be considered at a diplomatic international conference in 1972.

General

Commencing in 1967, the Patent Office started moving into new quarters in Crystal Plaza in Arlington, Virginia. At the present time we have essentially all of our operations except the Patent Copy Sales and Document Services located at Crystal Plaza, and expect that it will eventually be possible to move all of our operations to our new location.

A formalized career development program was established for three of our major areas, namely, our patent professionals, our trademark professionals, and our clerical operations. As a part of our patent professional career development program, we initiated a law school program under which the Office would pay for tuition and books for certain specified law school courses under an agreement in which the patent professional would agree to refund to the Office the entire cost of such payments if he left the Office within five years. This past year a new program of monthly professional meetings was established in which subjects relating to Patent Office activities, as well as external activities are discussed.

Two years ago the Patent Office acquired its own computer. At the present time this computer is utilized primarily to process patent classification and certain administrative information. Future plans call for increased use of computers in mechanized patent searching.

During the past five years the Patent Office annual budget has increased from approximately $28,000,000 to $42,000,000 per year. Most of this increase has been due to higher salaries and costs rather than to program increases, except for printing increased numbers of patents. The employment at the end of fiscal 1969 will be only slightly higher than at the end of fiscal 1964. The fiscal 1970 budget request presented to Congress is slightly over $46,000,000. This budget request, coupled with the additional salary increase which will come into effect in fiscal 1970, will reduce the level of recovery of Patent Office costs through fees and other income to a point approaching 50%. We have recently been asked by Congress to develop recommendations for increases in Patent Office fees. In this connection, we have recently initiated a study, including discussions with the patent bar, directed to a plan for financing Patent Office needs for the future. This will be a most important study since it seems clear that to do the job required for the future, the Patent Office will need adequate budgets, particularly to finance modernization and mechanization programs in the patent field.

The Office of Research, Development and Analysis, the Office of Administration, and the Office of the Commissioner provided important assistance and support during the past five years to both our patent and trademark operations. The significantly increased level of activity in these areas was carried out with only a slight increase in staffing.

The Future?

The next five years and further future of the Patent Office is a chapter of history which must still be written. It does seem clear, however, that there will be increased requirements placed on the United States patent and trademark systems and the United States Patent Office. For example, in the patent field it would appear to be most significant that the number of patent applications filed in fiscal 1969 will be a new all-time record of approximately 96,000 applications, as compared with approximately 90,500 applications filed in fiscal 1968. It seems likely that this increase will be due primarily to

increased filing of patent applications from abroad. Another significant factor is that our studies indicate that the number of patent documents in our search files will probably increase by 50% between now and 1975. In addition, it seems likely that the complexity of inventions will continue to increase, making applications on these inventions more difficult to search and examine.

In the case of our trademark operations, it would appear that the increase in the filings of trademark applications, demonstrated during the last five years, will continue in the future. In addition, possible adoption of the proposed intent-to-use bill, and possible adherence of the United States to an international trademark filing arrangement, will result in additional trademark filings.

The problems facing patent and trademark applicants and the Patent Office in the future can readily be foreseen by observing the trends of what has actually happened in the past and by realistic projections of these trends into the future. Thus, the challenge of the future for both our patent and trademark operations appears clear. It adds up to a big job ahead, but I believe we should be optimistic with regard to our ability to meet these challenges through sound long range plans, programs and budgets so that the future success and strength of the United States patent and trademark systems will be assured.

In conclusion, I would like to take this opportunity to express to each of you and to the patent bar collectively my sincere appreciation for the cooperation and support you have given to me during the five years I have served as Commissioner of Patents. This has meant a great deal to me personally. I also believe it has contributed substantially to the measure of success we have had in meeting the challenges we have faced.

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE FRITZ L. MERGNER

No. 7971. Decided July 3, 1968

[55 CCPA 1415; 399 F.2d 231; 158 USPQ 324]

1. PATENTABILITY—PRIOR ART—APPELLANT'S ADMISSIONS AS TO STATE OF THE ART.
"A word of explanation is in order relative to the use of certain of appellant's statements during prosecution. The Board referred to the fact that appellant had agreed that tape recorders having separate recording and playback heads with respective preamplifiers are 'old' or 'well known' in the art. Appellant's brief before the Board of Appeals, where similar statements appear, was not part of the printed record before the court. Upon inquiry from the court during oral argument, the Solicitor moved to correct diminution of the record by the addition of that paper. A subsequent paper filed by the Solicitor limited the request to certain portions of the brief. Appellant opposed. We think the requested portions of that paper bear upon the state of the prior art, at least to the extent of what appellant admits is 'conventional.'"

2. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—MATTER BEFORE COURT—PUBLICATIONS NOT PART OF THE RECORD—35 U.S.C. 144.
"The brief for the Solicitor contains reference to a portion of the Encyclopedia Americana and contains as an appendix, a portion of a book relating to magnetic tape recording. However pertinent these additional materials may be, they were not considered below by either party. They are not a part of the record to which we are confined, 35 U.S.C. 144. We shall not consider them here."

3. PATENTABILITY—PARTICULAR SUBJECT MATTER—"RECORDING SYSTEMS."
The refusal of certain claims in an application entitled "Recording Systems," as unpatentable over the prior art, is reversed.

REVERSED.

Henry L. Burkitt for appellant.

Joseph Schimmel (*Jere W. Sears*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and Judges RICH, SMITH, ALMOND, and KIRKPATRICK [1]

SMITH, *J.*, delivered the opinion of the court.

When tested according to the statutory requirements of 35 U.S.C. 103, appellant's claimed subject matter [2] here appealed would not, in our opinion, have been obvious at the time the invention was made. Thus, the decision of the Patent Office Board of Appeals [3] is reversed.

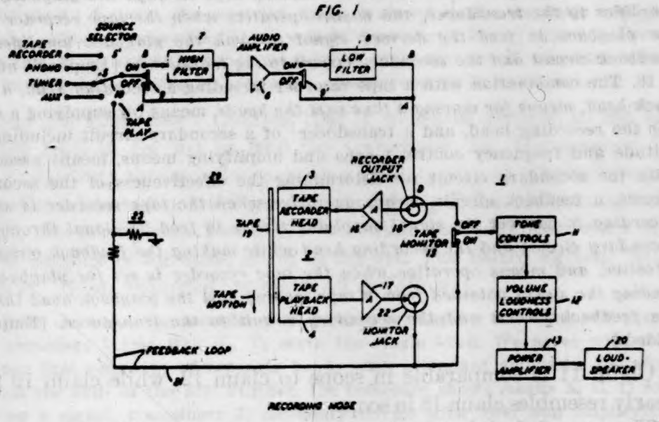
The invention relates to recording systems for recording and reproducing electrical signals. An object of the invention is to reduce materially the number of amplifying circuits, filter and network components used in a magnetic recording and reproducing system.

In accordance with the invention, a magnetic tape recording system is provided with an internal switching and control circuit which permits amplifiers, networks, filters and control circuits, located ahead of the recording head to be used also in the playback mode by switching into the circuit a feedback circuit located between the playback head

[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.
[2] Claims 11, 12, 18 and 19 in appellant's application Serial No. 170,341, filed February 1, 1962 for "Recording Systems" form the basis of this appeal. Appellant has withdrawn the appeal as to claim 17. The Board reversed the Examiner's rejection of claims 13–16 and 20.
[3] The Board consisted of Messrs. Freedman, Examiner-in-Chief, and Andrews and Burns, Acting Examiners-in-Chief. For my views of the legality under 35 U.S.C. 7 of a Board so constituted, see my dissenting opinion in *In re Wiechert*, 54 CCPA 957, 370 F.2d 927, 152 USPQ 247 (1967).

and a signal source selector for the recorder. FIG. 1 is reproduced below:

FIG. 1



That figure depicts a recorder system 1 having its internal switches set for the recording mode with the source selector switch 10 in the "tuner" position. In a recorder [4] a tape 19 moves between recording head 3 and tape playback head 4. Each head has its own amplifier, shown at 16 and 17. The selected source signal 5 from a tuner is amplified by audio amplifier 6 and passed to recorder 2 either along path A—A when filters 7 and 8 are bypassed, or, alternatively, along path B—B via high-pass filter 7 and low-pass filter 8. With the setting shown in FIG. 1, switches 9 and 9′ are set to bypass the filters. The signal from a tuner 5 by switch 10 may thus be recorded on the tape 19.

The recorded signals may be nearly immediately monitored by the tape playback head 4 and amplifier 17, through monitor jack 22 and tape monitor switch 15 to be reproduced from loudspeaker 20, characterized in the claims as a transducer. A tone control circuit 11, volume control circuit 12 and power amplifier 13 are disposed intermediate the loudspeaker 20 and tape monitor 15.

When in the playback mode, switch 10 is connected to the "tape play" terminal inserting the feedback loop 21 and filter 23 into the circuit. The tape monitor switch 15 is switched to its "off" position so that the signals intercepted on tape 9 by the tape playback head are passed via amplifier 17, monitor jack 22, feedback loop 21, filter 23, either circuit A—A or circuit B—B, as desired, including audio amplifier 6 and the output circuit, i.e., tone control circuit 11, volume control circuit 12, power amplifier 13, for reproduction by loudspeaker 20. Thus, during recording, amplifiers 6 and 16 are used; during monitoring, amplifiers 17 and 13 are used; and for playback, amplifiers 17, 6 and 13 are used.

Claims 12 and 18 are representative of the appealed claims:

12. The *combination* with a tape recorder including *a recording head, a playback head, means for moving a tape past the heads, each of the heads having its own amplifier*, means for supplying a signal to the recording head, and a transducer; of a secondary circuit including filter and amplifying means, means associated with the secondary circuit for determining the effectiveness of the filter means, a feedback circuit, *means operative when the tape recorder is set for recording to connect the signal supplying means to feed its signal through the*

[4] Appellant's specification explains that magnetic recorder 2 comprises a recording head 3, and a tape playback head 4, with a magnetic tape 19 moving therebetween and audio amplifiers 16 and 17. The specification lists various models of magnetic recorders which "are suitable in this connection," and states that the "arrangement in accordance with the invention may be utilized with any tape recorder which has a high level audio output." The specification restricts that broader statement with the caveat that the invention is applicable to "recorders with two or three magnetic heads and the like."

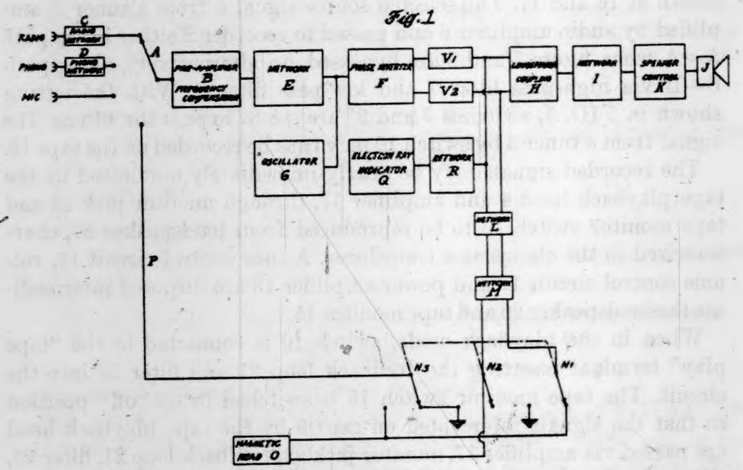
secondary circuit and the recording head amplifier to the recording head while making the feedback circuit ineffective, means for passing a signal derived by means of the playback head from the moving tape through the playback head amplifier to the transducer, and means operative when the tape recorder is set for playback to feed the derived signal through the playback amplifier, the feedback circuit and the secondary circuit to the transducer. [Emphasis added.]

18. The *combination* with a tape recorder including a *recording head, a playback head, means for moving a tape past the heads,* means for supplying a signal for the recording head, and a transducer; of a secondary circuit including amplitude and frequency control means and amplifying means, means associated with the secondary circuit for determining the effectiveness of the secondary circuit, a feedback circuit, *means operative when the tape recorder is set for recording to connect the signal supplying means to feed its signal through the secondary circuit and the recording head while making the feedback circuit ineffective, and means operative when the tape recorder is set for playback for feeding the signal obtained from a tape moving past the playback head through the feedback circuit and the secondary circuit to the transducer.* [Emphasis added.]

Claim 11 is comparable in scope to claim 12, while claim 19 most nearly resembles claim 18 in scope.

The appealed claims were rejected under 35 U.S.C. 103 as "unpatentable over" a reference patent to Bobb.[5] The Bobb patent also relates to magnetic recording and reproducing circuits. FIG. 1 of the reference depicts a block diagram of that invention:

Fig. 1



The Examiner's description of the Bobb reference is generally adequate for our purposes; thus we quote it at some length:

FIGURE 1 of Bobb shows a block diagram of the magnetic recording and reproducing apparatus. A selector switch A is provided to alternatively connect one of the three external signal sources (in the recording mode) or the magnetic head (in the playback mode) to the preamplifier and frequency compensation section of circuit B.

* * * * * * *

In the recording mode, the signal is passed from circuit B to network E, which may have the characteristics of passing the audio frequencies and blocking other frequencies. The signal is then passed through a phase inverter F, amplifier tubes V_1, V_2, network L (which has a rising transmission characteristic with frequency), a bleeder network M, switch M (sic), switch N, and then to magnetic head O which records the signal on a magnetic tape (not shown).

* * * * * * *

[5] U.S. Patent No. 2,641,655, issued June 9, 1953 for "Magnetic Recording and Reproducing Circuits."

To change to the playback mode, switch A is switched to connect conductor P to preamplifier B and switch N is changed so that the magnetic head O is connected to conductor P and acts as a playback head.

In the playback mode, the recorded signal is sensed by the magnetic head O. The signal is fed to preamplifier B via switch N, conductor P, and switch A. From preamplifier B the signal is fed to network E, phase inverter F, amplifier tubes V_1, V_2, loudspeaker coupling H, network I, speaker control K, and speaker J.

It was the Examiner's position that it would be obvious to one of ordinary skill in the art to feed the transducer, i.e., the speaker J, during recording through the recording head, tape, and playback head as appellant does instead of directly, as taught by Bobb. He also argued that the use of separate heads for recording and playback, with attendant amplifiers for each, is old in the art. The Board agreed, "applying the Bobb reference" to claim 12 as follows:

* * * Bobb shows a tape recorder with head O serving for recording and playback. Amplifiers 3 [sic B?], V_1, V_2 serve the single head. We agree with the Examiner that provision of separate heads with attendant amplifiers therefor is within the skill of the art. Further, the reference shows means A, C, D for supplying a signal, transducer J, secondary circuit with filter and amplifying means B and E * * * means * * * for determining the effectiveness of the filter means, feedback circuit P, means A, N_1, N_2, N_3 to feed signals during recording through the secondary circuit to the recording head while making the feedback circuit ineffective, means N_3, P, A, passing the signal from the tape to the transducer J, and means N_3, P, A operative when the tape recorder is set for playback to feed the derived signal through the feedback circuit P and secondary circuit B, E, F, V_1, V_2, to the transducer J. In view of the circuitry shown in Bobb, we will sustain the rejection of claims 11, 12, 17, 18 and 19.

Mindful of the admonition of the Supreme Court to avoid an evaluation of the obviousness or nonobviousness of an invention by using hindsight, *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), we turn to the differences between appellant's claimed subject matter and the Bobb patent.

We observe that each of the appealed claims recites a *combination* of a tape recorder having at least *two heads*, i.e., *a recording head and a playback head* with means for moving the tape past the *heads*. Each of claims 12 and 13 further requires that each of the heads have its own amplifier. Clearly, the Bobb reference is deficient in disclosing that claimed combination.

The Solicitor recognizes that Bobb did not consider the possible use of separate recording and playback heads, but relies upon a statement of the appellant during prosecution to the effect that tape recorders having separate recording and playback heads are conventional in the art. He argues that appellant has compromised here two concepts, retaining separate playback and recording heads, while using the same "filter-amplifier" circuit in the playback mode. He rhetorically questions whether that *possibility* would have been obvious to one of ordinary skill in the art, arguing, of course, in the affirmative.

However, merely to state that such tape recorders are known to the art does not make that *claimed combination* obvious to one of ordinary skill in the art under the requirements of 35 U.S.C. 103. Under that statutory test, we must evaluate the claimed invention as a whole. Doing so, we find the differences between the claimed subject matter and the prior art of record as evidenced by the Bobb patent and appellant's statements, are such that that claimed subject matter cannot be said to be obvious.

In addition to the specific requirements of the claims relating to the tape recorder, each of the appealed claims sets forth means clauses

in the claims to denote the activity of the combination during either the playback or recording mode. Claim 11, for example, requires "means operative when the tape recorder is set for recording to connect the signal supplying means to feed its signal through the filter-amplifying circuit *and the recording head amplifier* to *the recording head* while making the feedback circuit ineffective." That claim *also* requires "means for passing a signal derived by means of the *playback head* from the moving tape *through the playback head amplifier* to the transducer," and "means operative when the tape recorder is set for playback to feed the derived signal through the playback amplifier, the feedback circuit and the filter-amplifying circuit to the transducer." In the absence of a teaching of how the Bobb circuit, to the extent it resembles, or "reads on" the claimed circuit, may be modified to meet the express terms of the claimed combination, or a legitimate reason from the record, other than appellant's teachings, to do so, the rejection may not be sustained.[6]

Similar limitations are found in the remaining claims, claims 12 and 18 being reproduced above with the corresponding limitations emphasized. For the same reasons, the rejection may not stand on this art of record, even when taken with appellant's statements.

[1] A word of explanation is in order relative to the use of certain of appellant's statements during prosecution. The Board referred to the fact that appellant had agreed that tape recorders having separate recording and playback heads with respective preamplifiers are "old" or "well known" in the art. Appellant's brief before the Board of Appeals, where similar statements appear, was not part of the printed record before the court. Upon inquiry from the court during oral argument, the Solicitor moved to correct diminution of the record by the addition of that paper. A subsequent paper filed by the Solicitor limited the request to certain portions of the brief. Appellant opposed. We think the requested portions of that paper bear upon the state of the prior art, at least to the extent of what appellant admits is "conventional."

We thus grant the motion of the Solicitor and make it clear that the specified portions of appellant's brief have been considered in reaching our decision.

[3] For the foregoing reasons, the decision of the Board is reversed.

REVERSED.

[2] [6] The brief for the Solicitor contains reference to a portion of the Encyclopedia Americana and contains as an appendix, a portion of a book relating to magnetic tape recording. However pertinent these additional materials may be, they were not considered below by either party. They are not a part of the record to which we are confined, 35 U.S.C. 144. We shall not consider them here.

U.S. Court of Customs and Patent Appeals

IN RE LESLIE FREDERICK WIGGINS

No. 7864. Decided June 27, 1968

[55 CCPA 1356; 397 F.2d 356; 158 USPQ 199]

1. PATENTABILITY—COMPOSITION—DIFFERENT USE.

"More to the point is whether Wolf suggests or makes obvious a composition containing, in addition to a suitable vehicle, 10 to 1000 milligrams of 'O_2' per unit dosage for the particular purpose of radiation protection. Were Wolf to describe or render obvious such a composition containing those amounts of 'O_2,' that composition, of course, would not appear to differ in any material manner from the composition of appellant's claims [calling for 'an analgesic effect'], no matter to what ultimate use it would be put."

2. SAME—PROCESS—DISCOVERY OF NEW PROPERTIES IN OLD SUBSTANCE.

"* * * appellant's discovery of the analgesic properties of 'O_2' and of a composition containing it [otherwise unpatentable] could properly be claimed only as a method or process of using that compound or composition in accordance with the provisions of 35 U.S.C. 100(b) and 101. See *In re Hack*, 44 CCPA 954, 245 F.2d 246, 114 USPQ 161 (1957); *In re Thuau*, 30 CCPA 979, 135 F.2d 344, 57 USPQ 324 (1943), and cases cited therein."

3. SAME—COMPOSITION—OBVIOUSNESS.

"In summary, then, Wolf found that 'O_2' was not a 'depressant' or 'anaesthetic'; that it was otherwise 'pharmacologically inert'; and that it was unsuccessful on oral application. When considered with Wolf's apparent failure to suggest appellant's claimed dosage amounts, such a triad of basic negative findings, rather than making appellant's discovery obvious, seems to us to have the direct opposite effect. Indeed, it would have had the general effect of deterring further experimentation."

4. SAME—PARTICULAR SUBJECT MATTER—"PHARMACEUTICAL PREPARATIONS."

The refusal of certain claims in an application entitled "Pharmaceutical Preparations," as unpatentable over the prior art, is reversed.

REVERSED.

James & Aeschlimann, Christopher Aeschlimann (*John R. Janes*, of counsel) for appellant.

Joseph Schimmel (*Raymond E. Martin*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, JUSTICE CLARK,[1] and Judges RICH, SMITH, and KIRKPATRICK [2]

CLARK, *Associate Justice*.

This appeal is from the decision of the Board of Appeals which affirmed the Examiner's rejection of claims 13–15 in appellant's application [3] as unpatentable under 35 U.S.C. 103 in view of a literature article by Wolf and Braun (Wolf).[4] After careful consideration of "the differences between the prior art and the claims at issue," *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966), taken as a whole and specifically in light of the teachings of Wolf, we conclude that appellant's claims comply with the conditions for patentability set forth in section 103 and reverse the decision of the Board.

The Application and Claims

The subject matter of the application relates to the discovery that particular chemical compounds—1:3 benzoxazine-2:4-dione and its alkali metal salts—exhibit analgesic activity and alleviate headache pain in humans. According to the specification, a given compound may be administered by placing it in "any of the customary pharmaceutical forms" such as tablets, capsules, powders, pills, ampouled solutions for parenteral administration, suspensions for oral administration and the like. The amounts of the compound which may be administered are governed by its activity and toxicity, the specification stating:

The toxicity of the compound is such that doses of up to 1000 milligrams may be administered orally say three times a day, whereas its activity is such that doses as low as 10 milligrams each may be employed.

[1] Associate Justice, retired, Supreme Court of the United States, sitting by designation.
[2] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.
[3] Serial No. 125,647, filed July 21, 1961, and entitled "Pharmaceutical Preparations."
[4] Appearing in *Arzneimittel Forschung*, vol. 9, pages 442–3 (July 1959) and abstracted in Chemical Abstracts, vol. 53, page 20570e (1959).

Claims 13–15 read:

13. A pharmaceutical preparation in dosage unit form adapted for administration to obtain an analgesic effect, comprising, per dosage unit, an analgesically-effective non-toxic amount within the range from about 10 to about 1000 milligrams of at least one compound selected from the group consisting of 1:3-benzoxazine-2:4-dione and pharmacologically acceptable alkali metal salts thereof, and a pharmaceutical diluent.

14. A pharmaceutical preparation in accordance with claim 13 in a form adapted for oral administration.

15. A pharmaceutical preparation in accordance with claim 14 in the form of a tablet.

Certain other claims, directed to a *method* of obtaining an analgesic effect by administering the compounds recited in claim 13, were allowed by the Examiner.

The Prior Art

The Wolf article relied on by the Board discloses that, prior to appellant's discovery, the identical compound employed by appellant, 1:3-benzoxazine-2:4-dione (termed "O_2" by Wolf) was known to protect mice against the effects of X-ray radiation. Wolf describes the method by which he ascertained such activity:

> The investigations were carried out on mice weighing 16–18 g. who were submitted to radiation in groups of 20 * * *. The protective substance was injected in the animals by means of an i.p. [intraperitoneal] administration 10 minutes before the radiation. The dose employed was 150 mg./kg. [of mouse weight]. Trials in order to demonstrate a protection after an oral administration were unsuccessful. * * *

It appears Wolf also investigated other properties or activities of "O_2," reporting that:

> In contrast to Nembutal "O_2" has no central depressant or anaesthetic properties. In other respects, also, the substance is pharmacologically inert. * * *

That, in pertinent part, is the scope and content of the prior art reflected in the record before us which, in the Board's view, renders the compositions of the claims obvious and frames the issue before us. Subsumed is a determination of the correctness of the Board's findings that none of the claim limitations relating to analgesic use, the diluent, dosage unit form, the tablet form and the dosage range are of any patentable significance.

Differences in Subject Matter

Appellant posits four main differences between the subject matter of his claims and the disclosure of Wolf, some of which differences are rather tenuous, others more substantial. Summarized they are:

(1) The claims require the presence of a "pharmaceutical diluent" as part of the compositions, whereas Wolf does not explicitly mention the use of such a diluent or carrier in administering "O_2" to mice.

(2) The claims state that the composition is in a "dosage unit" *form*, a form "adapted for oral administration" and the form of a "tablet," respectively, whereas Wolf, it is said, discloses no particular form in which "O_2" was administered to mice intraperitoneally.

(3) The claims recite the intended *use* of the claimed composition, viz, "to obtain an analgesic effect," whereas Wolf, dealing as he does only with agents protective against X-rays, does not remotely suggest such a use for his disclosed compositions. Indeed, appellant's composition is a "quick acting analgesic when given by the oral route" while Wolf found "O_2" had "no central depressant or anaesthetic properties * * * the substance is pharmacologically inert" and "oral administration was unsuccessful."

(4) The claims require a particular *amount* of active ingredient per dosage unit, viz, "an analgesically-effective non-toxic amount within the range from about 10 to about 1000 milligrams" of the dione or its salts, whereas Wolf neither employs nor suggests the use of such amounts. With respect to the first difference posed by appellant, the Examiner thought that, in view of Wolf's disclosure that "O_2" possesses what the Examiner regarded as "pharmaceutical activity," it "would be obvious to include this active pharmaceutical agent with any pharmaceutical diluent," citing *In re Rosicky*, 47 CCPA 859, 276 F.2d 656, 125 USPQ 341 (1960). The Board went one step further, stating that "The combination of the compound and a diluent or vehicle was consider is shown by Wolf." In view of appellant's apparent agreement [5] with the Board on the matter, it needs no further discussion.

The remaining three differences between the claims and the prior art are best discussed together. Appellant argues that no composition containing 10–1000 milligrams of "O_2" per dosage unit for use as an analgesic is disclosed or made obvious by Wolf. As an abstract proposition, that argument is undoubtedly true, for it seems most unlikely that one of ordinary skill in the art would consider preparation of a pharmaceutical composition containing the amounts of "O_2" recited in the claims to be obvious for the purpose appellant sets forth, particularly in view of Wolf's statement that "O_2 has no central depressant or anaesthetic properties" and is "pharmacologically inert" in other respects also.

Nevertheless, any agreement by us with that contention is not necessarily dispositive of the issue. **[1]** More to the point is whether Wolf suggests or makes obvious a composition containing, in addition to a suitable vehicle, 10 to 1000 milligrams of "O_2" per unit dosage for the particular purpose of radiation protection. Were Wolf to describe or render obvious such a composition containing those amounts of "O_2," that composition, of course, would not appear to differ in any material manner from the composition of appellant's claims, no matter to what ultimate use it would be put.[6]

Here, however, the claimed composition—*certain amounts* of "O_2" plus a diluent—does appear to be new. We say that notwithstanding repeated references by the Board as well as the Solicitor's brief to ap-

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[5] Appellant candidly states: "The compound is a solid, and it can be presumed (the Patent Office Board of Appeals did) that one skilled in the art would prefer to administer the compound to mice in a carrier or vehicle, since this is a conventional type of composition for intraperitoneal administration."

[2] [6] In such eventuality, appellant's discovery of the analgesic properties of "O_2" and of a composition containing it could properly be claimed only as a method or process of using that compound or composition in accordance with the provisions of 35 U.S.C. 100(b) and 101. See *In re Hack*, 44 CCPA 954, 245 F.2d 246, 114 USPQ 161 (1957); *In re Thuau*, 30 CCPA 979, 135 F.2d 344, 57 USPQ 324 (1943), and cases cited therein. As this court stated in *In re Lemin*, 51 CCPA 942, 326 F.2d 437, 140 USPQ 273 (1964):

> Appellants are clearly correct in demanding that the subject matter as a whole must be considered under 35 U.S.C. 103. *But in applying the statutory test, the differences over the prior art must be more substantial than a statement of the intended use of an old composition.* Counsel for appellants produced a bottle containing a composition at oral argument. It seems to us that the composition in the bottle would be exactly the same whether the user were told to cure pneumonia in animals with it (as in Rothmann) or to promote plant growth with it (as here). The directions on the label will not change the composition of the contents. We therefore fail to find any unobvious distinction in the claim phrase "suitable for promoting growth of plants and for protecting them from damage by parasitic pathogens."
>
> The claim limitation "a parasitic plant pathogen inhibiting and plant growth promoting amount" could be a valid distinction, assuming the art knows what range of amounts is intended by the phrase, *only if it differed from the amount that those having knowledge of the prior art here would employ for the prior art purpose. Here there is no indication that the plant protecting amount is any different from a therapeutic amount that one skilled in the art of Rothmann would select.* It, therefore, does not appear that the amount limitation distinguishes the composition from that which would be obvious from the prior art. [Emphasis supplied.]

pellant's attempt to patent the "old composition" shown by Wolf,[7] for there seems to be no explicit description by Wolf of the amounts of "O_2" employed by appellant in his composition. In that regard, Wolf discloses that he employed "O_2" in amounts of 150 milligrams/kilogram of mouse weight for purposes of radiation protection. Since each mouse is said to weigh 16–18 grams, simple calculation establishes that about 2.5 milligrams of "O_2," presumably in some suitable vehicle or carrier, was administered either intraperitoneally or orally to each mouse. A unit dosage containing 2.5 mg. "O_2" falls short of the 10–1000 mg. amounts recited in the present claims.

We find nothing in Wolf which suggests that he or any other person of ordinary skill in the art would regard the preparation or administration to mice or humans of compositions containing sufficiently greater amounts of "O_2" as to fall within the scope of the appealed claims to be obvious. Nor apparently did the Examiner and Board—at least their opinion reflect no such finding.[8]

[3] In summary, then, Wolf found that "O_2" was not a "depressant" or "anaesthetic"; that it was otherwise "pharmacologically inert"; and that it was unsuccessful on oral application. When considered with Wolf's apparent failure to suggest appellant's claimed dosage amounts, such a triad of basic negative findings, rather than making appellant's discovery obvious, seems to us to have the direct opposite effect. Indeed, it would have had the general effect of deterring further experimentation. In *United States* v. *Adams*, 383 U.S. 39 (1966), a somewhat similar situation existed in the prior art. There the prior art suggested Adams' combination "was both dangerous and inoperable." *Id.* at 50. Despite that, and other prior art teachings that open circuit batteries which heated in normal use were not practical, and that wet batteries "were successful only when combined with electrolytes detrimental to the use of magnesium," Adams' battery—using the condemned elements—was successful, much to the surprises of the experts. The court commented:

> These long-accepted factors, when taken together, would, we believe, deter any investigation into such a combination as is used by Adams. This is not to say that one who merely discovers new uses to old inventions by shutting his eyes to their prior disadvantages thereby discovers a patentable innovation. We do say, however, that known disadvantages in old devices which would naturally discourage the search for new inventions may be taken into account in determining obviousness. At 52.

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[7] The Board stated, somewhat ambiguously we think:

> In substance, claims *13, 14 and 15 merely call for an old compound in an old vehicle or diluent*. We see no patentable significance in the proposed use to which the product will be put as an analgesic. The combination of the compound and a diluent or vehicle we consider is shown by Wolf et al. The intended new use does not make this *old* composition new and patentable. *In re Thuau*, 30 CCPA 979; * * * 135 F.2d 344; 57 USPQ 324.
>
> * * * * * * *
>
> Appellant has discovered a new use for an *old* composition and suitable claims to the method of using it, claims 10, 11 and 12, have been allowed in accordance with 35 U.S.C. 101. The word "process" is defined in 35 U.S.C. 100(b) as including a new use of a *known* composition of matter. However, we do not consider that this *known* composition of matter can become new and patentable by including therewith a statement of intended use or a conventional diluent or by putting it up in dosage unit form as recited in the claims. [Emphasis supplied.]

We gather that the Board must have meant that a combination of "O_2" and diluent *per se* was not new. Were the claimed composition in fact described by Wolf in its entirety, there would seem to have been little need for a rejection under § 103. Reliance upon that statutory provision necessarily implies, by its own terms, that the subject matter "is not identically disclosed or described" by Wolf.

[8] Neither the Examiner nor Board found, for example, that one of ordinary skill in the art, in carrying out the teachings of Wolf, would as a matter of course prepare a composition containing larger amounts of "O_2" in a carrier or vehicle, then divide it into aliquot portions containing 2.5 milligrams "O_2" for administration to each of the 20 or 60 mice in each group tested. Nor did they determine whether such a stock composition would necessarily correspond in any manner to those claimed here. Under the circumstances, we think it inappropriate that we speculate on what one of ordinary skill might or might not do. *In re Cofer*, 53 CCPA 830, 354 F.2d 664, 148 USPQ 268 (1966).

Section 103 of the 1952 Patent Act provides that a patent may not be obtained "if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art." In light of the background of the subject matter here, the content of the prior art and the differences between it and appellant's claims, we cannot say that the discovery of appellant was obvious to one skilled in the art. It was certainly not obvious to Wolf and Braun and no other references are before us. Rather than "an old compound in an old vehicle" as characterized by the Board, we find that, while appellant's claimed compositions are based on an old compound, it is obviously a new vehicle on a new thoroughfare.

[4] The decision is reversed.

REVERSED.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,576,561, B. L. Binford, MAGNETIC CONTROL DEVICE; **2,783,583**, R. G. Schaub, APPARATUS FOR DEAERATING WATER, **filed** Jan. 14, 1969, D.C., N.D. Calif. (San Francisco), Doc. 50597, *Schaub Engineering Co. and Magnetrol, Inc.* v. *Omnitrol, Inc. and Industrial Steam, Inc.*

2,783,853. (See 2,576,561.)

3,018,925, S. Englesson, DISPENSING PUMP AND COUPLING; **3,234,885**, same, PUMP DEVICE, **filed** Oct. 18, 1968, D.C. Conn. (New Haven), Doc. 12809, *ABS Pumpenfabrik* v. *Flygt Corporation and Aktiebolaget Flygts Pumpar.*

3,024,258, Brooks and Brooks, CONTINUOUS SULFONATION PROCESS; **3,058,920**, same, PROCESS FOR PREPARING A MIXTURE OF AN ALKYL BENZENE SULFONATE AND AN ALCOHOL SULFATE, **filed** Dec. 27, 1962, D.C. Md. (Baltimore), Doc. 14315–C, *The Chemithon Corporation* v. *The Procter & Gamble Company and The Procter & Gamble Manufacturing Company*. Order, Patent Nos. 3,024,258 and 3,058,920 are invalid, Nov. 29, 1968.

3,043,540, L. M. Greene, AIRPLANE INSTRUMENTS; **3,112,905**, same; **3,327,972**, same, AIRPLANE INSTRUMENT FOR FURNISHING A BIAS SIGNAL TO OFFSET THE EFFECTS OF FORWARD COMPONENTS OF GUSTS DURING LANDING APPROACH, **filed** July 13, 1967, D.C., W.D. Wash. (Seattle), Doc. 7268, *Safe Flight Instrument Corporation* v. *United Control Corporation*. Judgment for plaintiff enjoining defendants, Dec. 11, 1968.

3,058,920. (See 3,024,258).

3,074,601, C. O. Kuffer, AEROSOL VALVE ASSEMBLY, **filed** Dec. 17, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c2115, *Edward H. Green and Newman-Green, Inc.* v. *Aerosol Research Company*. Motion for summary judgment granted, July 16, 1968.

3,080,212, Graham, Smith and Morriss, Jr., PIPE CLAMP, **filed** Dec. 13, 1968, D.C., N.D. Calif. (San Francisco), Doc. 50469, *Smith-Blair Inc.* v. *Edward S. Walsh Co. and R. H. Baker & Co.*

3,095,890, Cousteau and Gagnan, DEMAND REGULATOR FOR BREATHING APPARATUS; **3,216,416**, W. F. Mitchell, MOUTHPIECE FOR AN UNDERWATER BREATHING DEVICE, **filed** Jan. 20, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c96, *U.S. Divers Co., Inc.* v. *Dacor Corporation*. By agreement, order cause dismissed as to all parties without prejudice and without costs, June 26, 1967.

3,097,047, Weinstein and Scott, DYEING SYNTHETIC FIBERS WITH ALKYL NAPHTHALENE COMPOSITION, **filed** Dec. 4, 1968, D.C.N.J. (Newark), Doc. 1281–68, *Lutex Chemical Corporation* v. *The Tanatex Chemical Corporation.*

3,098,477, W. Lotter, BROILER, **filed** Feb. 14, 1966, D.C. Md. (Baltimore), Doc. 3762–C (case transferred to D.C. Md. 6/10/66 and known as No. 17377–C in said Court), *South Bend Range Corp.* v. *Vulcan Hart Corp.* Stipulation, complaint and counterclaim be dismissed without prejudice, Dec. 10, 1968.

3,104,121, Nordin and Hall, HIGH PRESSURE SEAL ASSEMBLY; **Reg. No. 511,195** (TC), Thronhill-Craver Company, Inc., Pipe unions and fittings—namely, crosses, T's, elbows, couplings, chokes, wing valves, ball joints, and connections, **filed** May 15, 1968, D.C., S.D. Tex. (Houston), Doc. 68–H–423, *Thornhill-Craver Company* v. *Stonebor, Inc.* Consent judgment, Patent No. 3,104,121 is valid; defendant has infringed. Trademark Registration No. 511,195 valid; defendant has infringed said trademark registration and is enjoined, Jan. 21, 1969.

3,112,905. (See 3,043,540.)

3,197,920, Moore and Bowling, THROWING WHEEL AND PARTS THEREFOR; **3,319,383**, same, PARTICLE-THROWING APPARATUS; **3,290,827**, Bowling and Powell, same, **filed** Nov. 25, 1968, D.C., E.D. Tenn. (Chattanooga), Doc. 5440, *The Pangborn Corporation* v. *TEC Supply Company.*

3,216,416. (See 3,095,890).

3,217,890. (See 3,283,915.)

3,231,784, R. O. Major, STAGE LIGHTING SYSTEM; **Reg. No. 820,238** (PRESTO-PATCH), Major Equipment Company, Inc., Cross connection cabinet for stage lighting, **filed** Dec. 4, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c2344, *The Major Corporation* v. *Hub Electric Co., Inc.*

3,234,885. (See 3,018,925.)

3,283,915, L. Maslow, TRAY OR RACK ASSEMBLY; **3,217,890**, same, DISH RACK, **filed** Oct. 24, 1968, D.C., S.D.N.Y., Doc. 68–C–4217, *Metropolitan Wire Goods Corporation* v. *The General Tire & Rubber Co.*

3,290,827. (See 3,197,920.)

3,294,296, Gelman and Levenson, GARMENT HANGER SHOULDER COVER; **Reg. No. 828,876** (DRAPE-A-SHOULDER), Precision Papers, Inc., Hanger shoulder covers, **filed** Dec. 26, 1968, D.C. Md. (Baltimore), Doc. 20255–C, *Neet-A-Pak Products and Precision Papers, Inc.* v. *Efficiency Products Co., Inc. and Alfred Pratt.*

3,319,383. (See 3,197,920.)

3,327,972. (See 3,043,540.)

Reg. No. 511,195. (See 3,104,121.)

Reg. No. 820,238. (See 3,231,784.)

Reg. No. 828,876. (See 3,294,296.)

DEFENSIVE PUBLICATIONS

PUBLISHED MAY 6, 1969

Published at the request of the applicant or owner in accordance with Notice of Apr. 11, 1968, 849 O.G. 1221. The abstracts are identified by serial number of the applications and arranged in chronological order. The heading of each abstract of application published herein indicates the number of pages of specification, including claims and sheets of drawing contained in the application as originally filed. The files of these applications are available to the public for inspection and reproduction may be purchased for 30 cents a sheet.

Applications published under the Defensive Publication Program have not been examined as to the merits of alleged invention. The Patent Office makes no assertion as to the novelty of the disclosed subject matter.

781,680
ORIENTED MALEIC ANHYDRIDE OLEFIN COPOLYMER FILM

Dennis Arthur Barr, Welwyn, and Richard Harold Barclay Buteux, Welwyn Garden City, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

Continuation of application Ser. No. 401,634, Oct. 5, 1964. This application Oct. 22, 1968. Published May 6, 1969

Claims priority, application Great Britain, Oct. 10, 1963, 40,056/63

Int. Cl. B29d *7/24*; C08f *17/00*

U.S. Cl. 264—289

No Drawing. 16 Pages Specification

A film of a copolymer of maleic anhydride and an olefin, which is a monoethylenically unsaturated hydrocarbon having 4 to 10 carbon atoms and selected from the group consisting of 1,1-dialkyl substituted ethylenes and aralkenes, which has been oriented by stretching. The stretching may be effected in one direction or in two mutually perpendicular directions in the plane of the film at a temperature generally between 150° C. and 200° C. and at draw ratios up to 8:1. Preferred uniaxially oriented films have tensile break strengths in the direction of orientation of 10,000 lbs./sq. in. and more and our preferred biaxially oriented films have tensile break strengths in any direction in the plane of the film of at least 10,000 lb./sq. in. The biaxially oriented film preferably shows little or no in-plane birefringence, indicating that the orientation in each direction in the plane is substantially the same. Such film will normally have a ratio of tensile break strengths in any two directions at right angles in the plane of the film of not more than 1.3:1.

572,032
NONDESTRUCTIVE-READOUT OPERATION OF MAGNETIC FILM MEMORY DEVICES

Simon Middelhoek, Adliswil, Zurich, Switzerland, assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

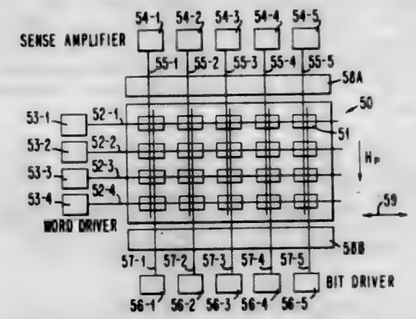
Filed Aug. 12, 1966. Published May 6, 1969

Int. Cl. G11b *5/62, 5/84*

U.S. Cl. 340—174

3 Sheets Drawing. 20 Pages Specification

This invention minimizes undesirable flux-trapping effects in a nondestructive-readout (NDRO) memory cell of the type which utilizes a "hard" storage film magnetically coupled to a "soft" read film. Excess stray flux from the read film becomes trapped in nearby conductors, where it generates eddy currents that tend to oppose any change in the direction of film magnetization during readout operations. The present scheme utilizes a bias field which causes the read film magnetization vector to point along its hard axis in a direction opposite to that in which the read field is applied. The read field cancels the bias field, enabling the read film magnetization to rotate toward its easy axis in whatever direction is determined by the "1" or "0" state of the storage film. Any flux-trapping effect caused by the rotation of the read film magnetization under these conditions will be directed along the hard axis, where it can be much more readily overcome by the read field than could a flux-trapping effect directed along the easy



axis at right angles to the read field. As a result, much less read drive power is required to overcome flux-trapping effects during nondestructive readout operations.

768,945
SHAPED ARTICLES OF FLUORINE-CONTAINING POLYMERS FILLED WITH CARBONACEOUS MATERIAL

David Evan Bryan Morgans, Hatfield, England, assignor to Imperial Chemicals Industries Limited, London, England, a corporation of Great Britain

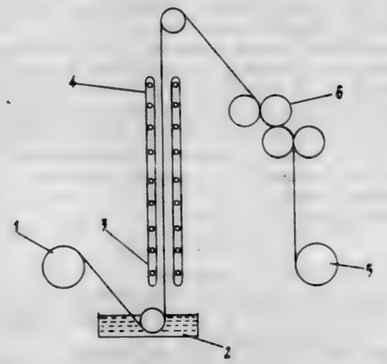
Continuation of application Ser. No. 596,574, Nov. 23, 1966. This application Aug. 21, 1968. Published May 6, 1969

Claims priority, application Great Britain, Nov. 24, 1965, 49,944/65

Int. Cl. C23c *9/04*

U.S. Cl. 117—46

1 Sheet Drawing. 15 Pages Specification



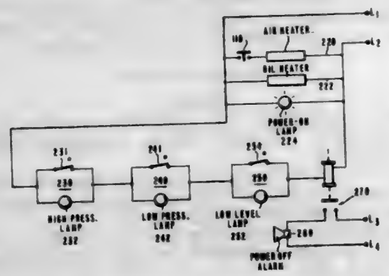
Shaped articles of fluorine-containing polymers filled with carbonaceous material obtained by impregnating a supporting structure, capable of charring at or below the sintering temperature of the fluorine-containing polymer

without substantial loss of shape, with a liquid dispersion of fluorine-containing polymer, and drying the impregnated structure and heating it at a temperature sufficiently high to sinter the polymer.

The preferred fluorine-containing polymer is polytetrafluoroethylene. Although for some fillers it may be necessary to exceed 400° C. for brief periods, the preferred sintering temperatures are 370 to 390° C. Copolymers of tetrafluoroethylene with minor amounts (up to about 10% by weight) of other unsaturated monomeric material (e.g. hexafluoropropene or ethylene) may also be used when such copolymers exhibit the low coefficient of friction and excellent resistance to chemical attack and dimensional change at high temperatures that are associated with a homopolymer of tetrafluoroethylene.

The supporting structure may be cellulose material such as paper, papier mache, or cotton fabrics and articles made from synthetic fibers such as polyacrylonitrile and polyvinylidene chloride. The articles can contain 80% by weight of PTFE and more, balance carbonaceous material. Non-volatile residues may also be present in the supporting material.

601,146
AIR-OIL MIST GENERATING DEVICE WITH ALARM MEANS
Andrew W. Whitaker, 2105 Missouri, and Otto P. Mullins, 115 Wooster, both of Baytown, Tex. 77520
Filed Dec. 12, 1966. Published May 6, 1969
Int. Cl. G08b *7/06*
U.S. Cl. 340—412
1 Sheet Drawing. 9 Pages Specification



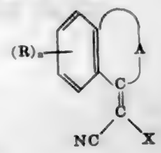
The present invention is directed to an oil-mist generating system wherein a pool of heated oil is maintained in a reservoir and is drawn up through a tube into a venturi section by the action of a high velocity air stream. Within the venturi, the oil is formed into a mist carried by the air for use as a lubricant.

An electrical control system is provided for use with this device comprising three parallel circuits containing an air heater, an oil heater, and a power-on lamp. A fourth parallel circuit contains in series lamps for indicating high and low pressures and low oil level. Neon glow lamps are used for the indicating purposes, in parallel with individual switches operated by two-position solenoids.

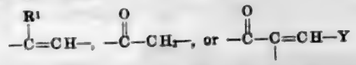
Power-off alarm means are also provided to indicate a failure of electrical power.

670,757
1-(α,α-DISUBSTITUTED METHYLENE) - 3-INDANONES AND -INDANES FROM INDAN-1,3-DIONES
Gether Irick, Jr., % Tennessee Eastman Company, P.O. Box 511, Kingsport, Tenn. 37662
Filed Sept. 26, 1967. Published May 6, 1969
Int. Cl. C09b *23/04, 23/06, 23/10*
U.S. Cl. 260—240
No Drawing. 38 Pages Specification

Novel indanone compounds containing a cyanomethylidene group and derivatives thereof which are useful as textile dyes have the formula



wherein
A is a group having the formula



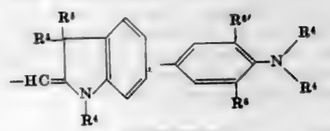
in which the carbon atom bearing the substituent R^1 or the carbonyl carbon atom is attached to the benzene nucleus and wherein R^1 is a halogen, lower alkoxy, cyclohexoxy, a phenoxy group, or an amino group



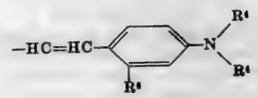
wherein R^1 and R^2 when taken singly are the same or different and each represents hydrogen; lower alkyl; lower alkyl substituted with halogen or hydroxy; phenyl; phenyl substituted with lower alkyl, lower alkoxy, or halogen; or cyclohexyl or



collectively represent N-methyl-piperazino, pyrrolidino, lower alkylpyrrolidino, piperidino, lower alkyl piperidino, morpholino, lower alkylmorpholino, 4-thiomorpholino - 1,1 - dioxide, 1,2,3,4 - tetrahydroquinolino, or lower alkyl-1,2,3,4-tetrahydroquinolino;
Y is the residue of an aromatic aldehyde having the formula



or



wherein
R^4 is a lower alkyl group or a phenyl group;
R^5 is lower alkyl; $R^{5'}$, $R^{5''}$, and $R^{5'''}$ are the same or different and each represents hydrogen or lower alkyl; and
R^6 and $R^{6'}$ are the same or different and each represents hydrogen, lower alkyl, lower alkoxy, halogen, lower alkylthio, lower dialkylamino, nitro or cyano;
R is hydrogen, lower alkyl, lower alkoxy, phenoxy, phenylthio, lower alkylthio, lower alkylsulfonyl, cyano, nitro, or halogen;
n is 1 or 2; and
X is phenyl; phenyl substituted with lower alkyl, lower alkoxy, or halogen; cyano; carbamoyl; lower alkylcarbamoyl; lower alkoxycarbonyl; lower alkamoyl; benzoyl; or benzoyl substituted with lower alkyl, lower alkoxy or halogen.

741,203
WASH OIL
David C. Hull, P.O. Box 2068, Longview, Tex. 75601
Filed June 28, 1968. Published May 6, 1969
Int. Cl. C11d *7/50, 7/22*
U.S. Cl. 252—162
No Drawing. 7 Pages Specification

A compressor vane wash oil comprising the following components:

Component:	Liquid volume percent
Benzene	1–2
Toluene	30–32
Ethylbenzene	20–21
Paraxylene	10–11
Orthoxylene	2–3
C–9 and higher aromatic	28–29
Olefins and diolefins	4–6

745,589
FIBROUS CROSSBANDING SHEETS FOR VENEERED STRUCTURES
Thomas C. Dunn, Runnymeade, Hockessin, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed July 17, 1968. Published May 6, 1969
Int. Cl. B32b *3/18, 21/14;* **D04h** *5/00*
U.S. Cl. 161—141
1 Sheet Drawing. 30 Pages Specification



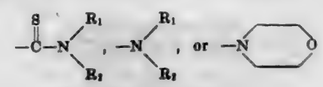
Novel crossbanding materials for use in the manufacture of veneered plywood and furniture structures comprise a resin impregnated assembly of a fibrous carrier sheet and an array of substantially straight parallel continuous elongated elements spaced along the width of the sheet, said elements each being no greater than about 0.025 inch in diameter, the total modulus of the elements per inch width of sheet being greater than about 30 pounds and the crossbanding structure having an air porosity of at least about 1 ft.³/min./in.²/10 p.s.i.a.

748,659
POLYCARBODIIMIDES FOR IMPROVING AGING RESISTANCE OF POLYESTER FIBER IN SULFUR-CURED RUBBER VULCANIZATES
Henry J. Leibu, New Castle, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed July 30, 1968. Published May 6, 1969
Int. Cl. B32b *25/02;* **C08g** *51/60;* **C08d** *13/28*
U.S. Cl. 260—873
No Drawing. 30 Pages Specification

Polyester fiber (yarn, cord, or fabric) in sulfur cured rubber articles (e.g., V-belts, hose, tires) is stabilized against degradation associated with certain vulcanization accelerators (thiuram sulfides, dithiocarbamates, and certain sulfenamides), by conducting the curing in the presence of 0.5–8 parts, preferably 2–5 parts, of a polycarbodiimide or mixtures thereof (per 100 parts of the rubber).

Aromatic polycarbodiimides are preferred, especially when urethane or monocarbodiimide-terminated; a representative one, made from toluene, 2,4- and 2,6-diisocyanate (80/20 mixture), has a molecular weight of 800. Aliphatic, cycloaliphatic, and aromatic-aliphatic polycarbodiimides are also useful.

The deleterious sulfenamides have the formula G–X, where G is 2-thiazolin-2-ylthio- or 2-benzothiazolylthio- and X is



(optionally alkyl substituted) where R_1 and R_2 can be alkyl or cycloalkyl; R_3 can also be hydrogen; preferably R_1 and R_2 are C_1–C_6 alkyl.

Any sulfur curable rubber can be employed. Ethylene/propylene/non-conjugated diene copolymers (EPDM) are particularly important; other rubbers include natural rubber, synthetic polyisoprene, polybutadiene, and isobutylene-isoprene and styrene-butadiene rubber.

Conventional compounding and shaping methods and conventional rubber addends can be used.

752,509
REGENERATION OF PHOTOGRAPHIC SILVER BLEACH SOLUTIONS
Charleton C. Bard, Rochester, and Julius C. Battaglini, Fairport, N.Y., both of 1669 Lake Ave., Rochester, N.Y. 14615
Filed Aug. 14, 1968. Published May 6, 1969
Int. Cl. G03c *5/26, 5/38*
U.S. Cl. 96—6
No Drawing. 8 Pages Specification

Ferricyanide bleach which has been utilized in photographic processing is regenerated by treatment under acidic conditions with hydrogen peroxide or with an alkyl peracid, such as performic acid, peracetic acid or perpropionic acid, to oxidize alkali ferrocyanide to alkali ferricyanide.

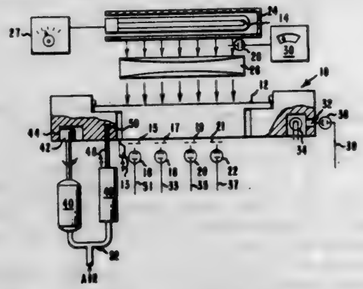
Conventional ferricyanide bleach solutions contain an alkali metal ferricyanide, such as lithium ferricyanide, sodium ferricyanide or potassium ferricyanide, and an alkali metal bromide and may also contain buffers, bleaching accelerators and corrosion inhibitors. In use, the ferricyanide serves to oxidize metallic silver to silver ion and is reduced to ferrocyanide so that there is a gradual accumulation of ferrocyanide ion in the solution. Any of such bleach solutions can be successfully regenerated with hydrogen peroxide or an alkyl peracid utilizing an amount sufficient to oxidize substantially all of the alkali ferrocyanide to alkali ferricyanide, with stoichiometric or substantially stoichiometric proportions ordinarily being optimum. It is preferred that the treatment with hydrogen peroxide or alkyl peracid be carried out with the bleach solution at a pH of less than 5, and preferably of about 3 or less, and to provide the desired pH by addition of a strong acid, such as sulfuric acid, to the solution.

The reaction of hydrogen peroxide or an alkyl peracid with alkali ferrocyanide is also useful as a method for manufacture of alkali ferricyanide or for preparation of fresh ferricyanide bleach.

773,441
SPINNERET CAPILLARY INSPECTION APPARATUS
Ronald George Heitz and George Hilliary Hutchens, Waynesboro, Va., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Nov. 5, 1968. Published May 6, 1969
Int. Cl. G01n *21/30*
U.S. Cl. 250—219
2 Sheets Drawing. 10 Pages Specification

An apparatus for inspecting concentrically arranged rows of holes in a spinneret that includes a rotatable driven support for the spinneret, a light source for directing light

through the holes and a plurality of photocells responsive to light passing through the holes. Each photocell is aligned to selectively receive light from each hole of one of the rows of holes and emits an electrical signal proportional to the light received from each hole. The electrical signals



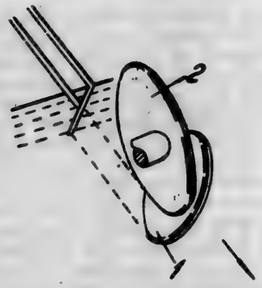
are counted by a circuit that is automatically connected in sequence to each photocell for one revolution of the support. The count received from the photocells is compared to the number of holes in the spinneret to determine acceptability for use.

777,309

AGRICULTURAL DEVICE

Paul Koronka and David Alan Harris, Fernhurst, Haslemere, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

Filed Nov. 20, 1968. Published May 6, 1969
Int. Cl. A01c *5/06;* **A01b** *5/16*
U.S. Cl. 111—88
4 Sheets Drawing. 13 Pages Specification



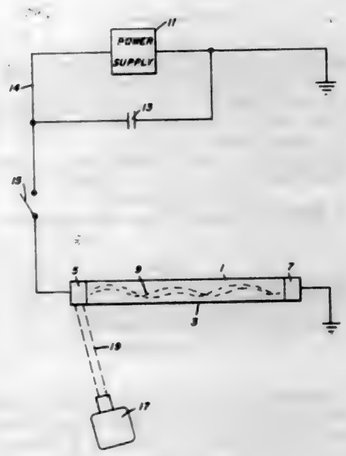
A coulter device is provided for use on a plow which is particularly adapted for use with seed drills and which is capable of cutting through vegetation or other trash to form a slit in the ground into which seed may be sown. The coulter device of this invention comprises a rotatable slit-cutting disc of from 4 to 12 inches in diameter to cut a slit in the ground and a pair of rotatable slit widening discs of from 6 to 12 inches in diameter arranged rearwardly of said slit-cutting disc to widen the slit so formed, the slit-widening discs having a greater diameter than the slit-cutting disc.

789,435

METHOD FOR EXTENDING THE FLASH LIFE OF VAPOR-FILLED ELECTRIC DISCHARGE LAMPS

Roger C. Baetzold, Kodak Park, Rochester, N.Y. 14650

Filed Jan. 7, 1969. Published May 6, 1969
Int. Cl. H01j *37/04, 37/32*
U.S. Cl. 250—50
1 Sheet Drawing. 3 Pages Specification



A method for extending the flash-life of vapor-filled electric discharge lamps which comprises exposing the lamps to ultraviolet radiation prior to and coincident with operation of the lamp. The ultraviolet radiation can be directed toward any portion of the lamps, but best results are obtained when the radiation is directed at the cathode.

PLANT PATENTS

GRANTED MAY 6, 1969

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,882

LILY PLANT

Jan de Graaff, Gresham, Oreg., assignor to Oregon Bulb Farms, Division of Melridge Inc., Gresham, Oreg., a corporation of Washington

Filed Sept. 25, 1967, Ser. No. 670,480

Int. Cl. A01h *5/02*
U.S. Cl. Plt.—68 **1 Claim**

A new variety of Oriental hybrid lily plant bearing clusters of very large flowers of excellent form, strong color, and long persistence, both on the plant and as a cut flower; the new plant being particularly characterized by its vigor, its high bud count, its adaptability for pre-cooling and cold storage for prolonged periods, and its easy forcing capability whereby in greenhouse use the plant can be flowered the year around.

2,883

NECTARINE TREE

Frederic W. Anderson, Merced, Calif., assignor to Reedley Nursery, Inc., Reedley, Calif., a corporation of California

Filed Oct. 30, 1967, Ser. No. 679,272

Int. Cl. A01h *5/08*
U.S. Cl. Plt.—41 **1 Claim**

A large, vigorous nectarine tree which is a regular and productive bearer of large, globose to slightly oblong, freestone fruit having yellow flesh, and yellow skin substantially entirely overspread with red at maturity.

2,884

STRAWBERRY PLANT

Marion Hagerstrom, Monticello, Minn., assignor to Stark Bro's Nurseries & Orchards Co., Louisiana, Mo., a corporation of Missouri

Filed Aug. 28, 1967, Ser. No. 663,904
Int. Cl. A01h *5/08*
U.S. Cl. Plt.—48 **1 Claim**

1. A new and distinct variety of strawberry plant, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a general resemblance to the variety known as the Christ strawberry (Plant Patent No. 1,365), sold commercially under the registered trademark "Starkrimson" of Stark Bro's Nurseries & Orchards Co., but having more vigorous and hardier habits of growth, a more productive fruit-bearing habit, and more attractive berries of very high quality resembling those of the Christ variety, but being more uniformly large in size throughout the picking season and having a sweeter flavor.

2,885

ROSE PLANT

Eugene S. Boerner, deceased, late of Benton, N.Y., by Lincoln Rochester Trust Company, Rochester, N.Y., and Roger L. Boerner, Milwaukee, Wis., executors, assignors to Jackson & Perkins Company, Newark, N.Y., a corporation of New York

Filed Sept. 14, 1967, Ser. No. 667,869
Int. Cl. A01h *5/02*
U.S. Cl. Plt.—26 **1 Claim**

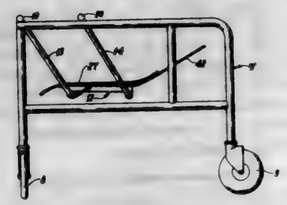
1. A new and distinct variety of rose plant of the floribunda class, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a compact and well-formed plant habit, excellent continuity of bloom, a distinctive and attractive bloom form, and a distinctive and attractive general color tonality of the flowers corresponding to Thulite Pink, lightly overcast with Cameo Pink.

PATENTS

GRANTED MAY 6, 1969

GENERAL AND MECHANICAL

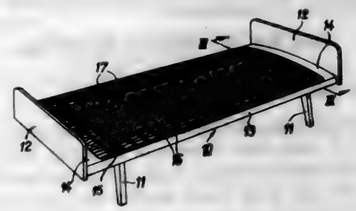
3,441,960
BATH SEAT ASSEMBLIES
Clive Nelson Norton, Queen St., Wallan, Victoria, Australia
Filed Sept. 19, 1966, Ser. No. 580,467
Claims priority, application Australia, Sept. 28, 1965, 64,586/65
Int. Cl. A47k *3/12*
U.S. Cl. 4—185 **2 Claims**



A bath seat assembly having a seat member which may assume an upper and a lower level. The framework is of U-shape having side members with spaced sleeves oppositely disposed mounted thereon. A pair of U-shaped arms have their end portions coaligned and pivotally mounted in the sleeves. Each of the arms has a central intermediate part disposed substantially parallel to the axes of the sleeves but spaced therefrom by a radial distance substantially equal to the difference between the upper and lower levels. A seat member has a frame pivotally attached to the intermediate parts of the arms so that a pivoting movement of the arms through approximately one right angle moves the seat member through a substantially circular quadrantal arc in a substantially non-rotational manner between the upper and lower levels. The central intermediate part of one of the arms has a lug member bearing against the underside of the seat member so that as the seat frame is moved from said lower to said upper level the forward edge of said seat member is raised relative to the rearward edge of said seat member, and is lowered relative to said rearward edge as said seat frame is lowered from said upper level to said lower level.

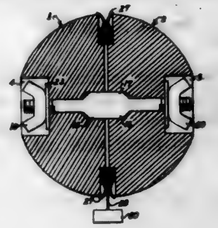
3,441,961
BEDSTEAD WITH SPRING STEEL BOTTOM
Jannes Jonge Poerink, 25 Prins Bernhardlaan, Borne, Netherlands
Filed Jan. 19, 1967, Ser. No. 610,406
Claims priority, application Germany, Jan. 27, 1966, N 27,966
Int. Cl. A47c *23/05, 23/28, 23/26*
U.S. Cl. 5—246 **10 Claims**

This invention provides a bedstead comprising a frame member and a spring steel gauze bottom member. The gauze bottom member includes a plurality of wires interlaced by several transverse wires which are arranged in pairs. A pair of the transverse wires is mounted within a hook means which is carried by the frame member at each end thereof. That is, in each hook portion there is an outermost transverse wire and an inner transverse wire engaged by each of the said hooks. The longitudinal wires have free ends passing between the said outermost transverse wire and inner transverse wire. These free ends are completely bent around the said outermost transverse



wire to connect the said spring steel gauze member to the said frame member.

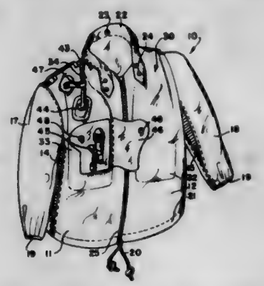
3,441,962
FLOAT MARKER
Willard B. Williams, Dogwood Lane, West Middlesex, Pa. 16159
Filed July 21, 1967, Ser. No. 655,173
Int. Cl. B63b *21/52, 51/02;* **A01k** *95/00*
U.S. Cl. 9—9 **7 Claims**



This invention is a float marker composed of two sections and a horizontal rod which is passed through the approximate center of each section. A nut or other tightening means is secured on at least one end of the rod so that the sections can be placed in more or less close abutment with one another. One end of a line or other flexible means is secured to the marker, and the line is wound in convolutions about the rod between the sections. A weight is attached to the other end of the line so that when the marker float is jettisoned in the water, the line will pay out until the weight strikes bottom anchoring the float in place.

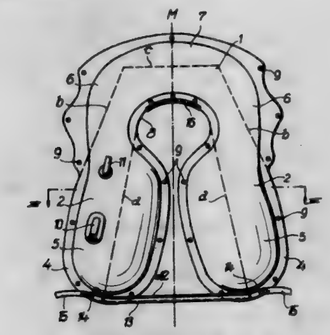
3,441,963
INFLATABLE SAILING JACKET
Augustus J. Steinthal, Rye, N.Y., assignor to M. Steinthal & Company Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 17, 1967, Ser. No. 661,260
Int. Cl. B63 *9/16*
U.S. Cl. 9—314 **7 Claims**

A sailing jacket having a built-in inflatable life preserver. The life preserver is a horseshoe-shaped unitary inflatable member having a large curved inflatable tube which extends out of the jacket at the shoulders; rests



on the back when deflated and pops up behind the wearer's head when inflated.

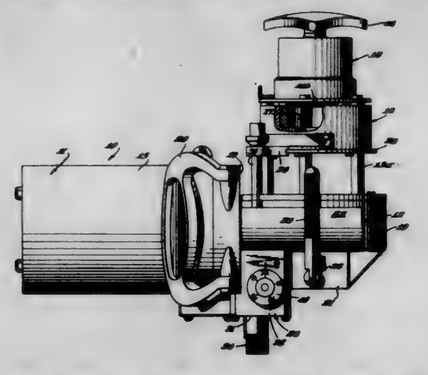
3,441,964
LIFE JACKET
Helmut Koch and Hans Heinrich Heidemann, Hamburg-Harburg, Peter Birk, Hamburg-Eidelstedt, Hans-Jürgen Busch, Hamburg, and Jost Bernhardt, Hamburg-Harburg, Germany, assignors to Bernhardt Apparatebau G.m.b.H. & Co., Hamburg, Germany
Filed Jan. 23, 1967, Ser. No. 610,887
Claims priority, application Germany, Jan. 21, 1966, B 85,492
Int. Cl. B63c *9/08*
U.S. Cl. 9—338 **8 Claims**



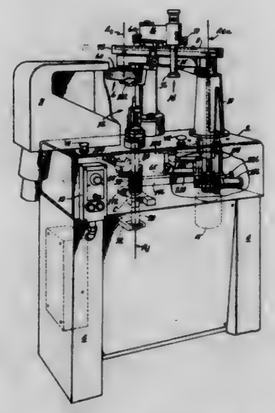
The present invention concerns a life jacket which comprises an inflatable floatable body having a collar section and two wing sections the envelopes of which can be folded together in non-inflatable condition in such a way that in non-inflated condition of the jacket the envelopes of the wings are foldable from the inside toward the outside, whereas the envelopes of the collar section are foldable from the outside toward the inside in such a manner that the folded-over portions will be detachably connected at their marginal portions.

3,441,965
AUTOMATIC REVERSIBLE ELECTRIC MOTOR TOOL
John N. Cutrone, 6717 Navajo, Lincolnwood, Ill. 60645
Filed Dec. 22, 1966, Ser. No. 603,838
Int. Cl. B23g *1/00, 3/04*
U.S. Cl. 10—89 **20 Claims**

An automatic reversible electric tool for performing work, such as cutting threads on a work piece, and wherein a motor reversing switch is so operatively interrelated with the performance of the work that it is not only automatically shiftable from a forward drive position through an off position to a reversible position and back to the off position upon the performance of the work, but is also temporarily held in the off position before going into the motor reversing position so as to allow time for the motor to stop turning before being reversed. Graduated means is also present for varying switch tripping mechanism to provide for different lengths of thread on the work.



3,441,966
HEEL FINISHING MACHINES
Leo F. Stanton, Newburyport, Donald E. Ripley, Peabody, and Frank C. Mattern, Jr., Wenham, Mass., assignors to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey
Filed June 9, 1965, Ser. No. 462,657
Int. Cl. A43d *87/00*
U.S. Cl. 12—87 **10 Claims**



An automatic heel finishing machine for performing operations on the heel portions of a lasted, jack mounted shoe. A finishing tool is guided during its operation by the shoe heel itself. Only the approach and departure of the tool with respect to the heel is controlled by a cam.

3,441,967
FOOTWEAR HOLDER
Paul Salzman, 976 Moncrieff Road, Mount Royal, Quebec, Canada
Filed Dec. 14, 1967, Ser. No. 690,476
Int. Cl. A43d *3/14, 5/00*
U.S. Cl. 12—120.5 **3 Claims**

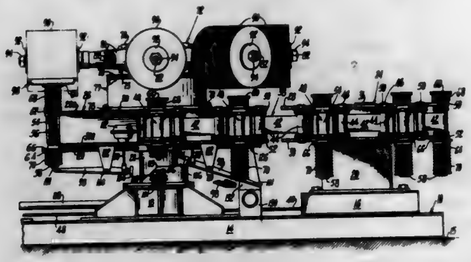
A shoe holder, in which a pair of shoes are supported on each side of a rigid flat strip by a heel grip and a toe clamp, so as to hold the soles in flat condition, each toe clamp consisting of a pivoted member adapted to overlie

the front end of the shoe and a pivoted handle member for each pivoted member serving to lock the toe clamp in its clamping position, each pivoted member being pro-



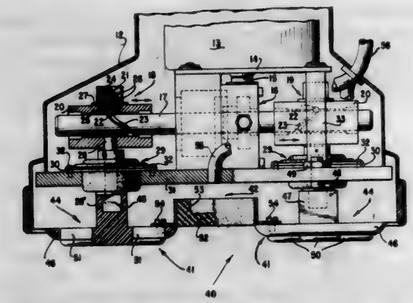
vided with a spring return normally urging the same into open position, so as to considerably facilitate manipulation of the handle member to close the clamp.

3,441,968
AUTOMATIC BUFFING MACHINE
Frank H. Kramen, Portland, Conn., assignor to Harper Buffing Machine Company, East Hartford, Conn., a corporation of Connecticut
Filed Jan. 23, 1967, Ser. No. 611,026
Int. Cl. B24b *29/00*
U.S. Cl. 15—97 **10 Claims**



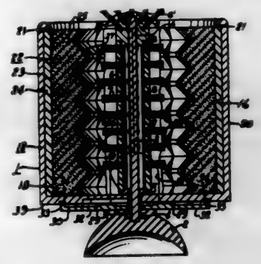
The buffing machine of this invention includes a buff assembly having individual buffs mounted for uninterrupted synchronized movement in sequence with a series of successive workpiece holders supported on a continuously traveling conveyor for movement toward and away from the buff assembly while in registry with a buff.

3,441,969
SHAMPOOING ATTACHMENTS FOR RECIPROCATING FLOOR POLISHERS
Willard A. Dix, Chester, and Oswald M. Porter, Livingston, N.J., assignors to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Mar. 8, 1967, Ser. No. 621,689
Int. Cl. A47l *11/284;* **G03d** *5/06;* **D06g** *1/00*
U.S. Cl. 15—98 **8 Claims**



An attachment for shampooing a rug or like floor covering adapted to be secured to a reciprocating floor polisher comprising a plurality of plastic scrubbing plates having foam producing means operatively disposed relative to the scrubbing plates so that the reciprocating motion of the plates causes a corresponding alternating compression and expansion of the foam means thereby resulting in the depositing of foam upon the rug.

3,441,970
RECEPTACLE CLEANING DEVICE
Anthony J. Krabal, Pittsburgh, Pa., assignor to Brush Manufacturing Co., Inc., New Kensington, Pa., a corporation of Pennsylvania
Continuation-in-part of application Ser. No. 526,019, Feb. 7, 1966. This application Mar. 14, 1967, Ser. No. 622,991
Int. Cl. B08b *9/02;* **A46b** *15/00;* **A47l** *17/08*
U.S. Cl. 15—114 **10 Claims**



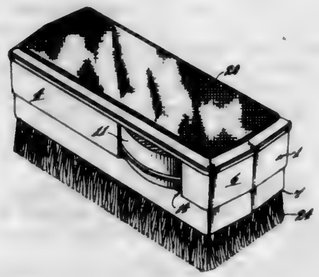
A receptacle cleaning device for submerged use in a sink well filled with a washing solution and having a receptacle receiving cage composed of cage sections which retain a circumferential brushing means surrounding a centrally located brush with biasing means continuously imposed on the cage circumferential brushing means to urge the same inward toward the centrally located brush especially upon separation of the cage sections caused by insertion of a receptacle in the receptacle receiving cage for washing.

3,441,971
HAND-OPERATED BUFFER AND METHOD OF DEVELOPING SAME
Dwight M. Gowdey, 11536 6th NW., Seattle, Wash. 98177
Filed Feb. 6, 1967, Ser. No. 614,170
Int. Cl. A47l *23/08, 23/10, 17/00*
U.S. Cl. 15—210 **17 Claims**



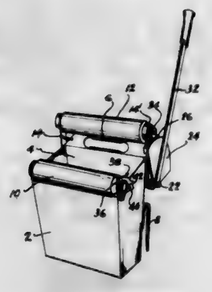
A hand-operated buffer is disclosed which is comprised of a buffer pad and an inflatable bladder that is superposed over the pad and interconnected with it so as to make the two conjointly shiftable. A pair of recesses on opposite sides of the buffer, between the bladder and the bottom of the pad, make it possible to grip the bladder with the hand for purposes of lifting and shifting the buffer about on the surface to be buffed. Certain additional features, and certain disclosed methods for making the buffer, also make it possible to partially disassemble the buffer and then, if desired, to reshape it into a more compact form for storage.

3,441,972
TRAVELLER'S KIT
Jerome H. Rotheraine, 729 Lonesbore Ave., Philadelphia, Pa. 19111
Filed July 17, 1967, Ser. No. 653,697
Int. Cl. A47l *23/28, 23/04;* **A46b** *5/00*
U.S. Cl. 15—258 **2 Claims**



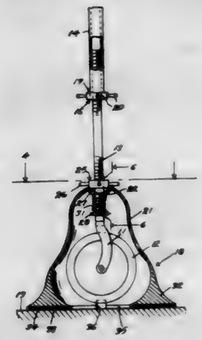
This invention relates to a traveller's kit which is more particularly designed as a shoe shining and polishing kit, although it may be used to contain toilet articles which a traveller carries. It is provided with a plastic container, molded in one piece, with longitudinally spaced integral ribs forming a series of chambers, open at the top and closed by a cover integral with the container. The bottom of the container has integral with it a rectangular arrangement of integral flanges into which a cleaning and polishing brush can be snapped, and if desired, means are provided to secure the back of the brush to the bottom of the container. Chambers or compartments are adapted to receive a cleaning and polishing cloth, a box of cleaning and polishing material and a dauber. A bag is employed into which the container and brush can be slipped so that other articles in the traveller's bag will not be contacted by cleaning and polishing material on the container or brush.

3,441,973
MOP WRINGER WITH GEAR DRIVEN ROLLS
Albert Turk, 35 Crane Ave., Weston, Ontario, Canada
Filed Sept. 19, 1967, Ser. No. 668,866
Int. Cl. A47l *13/59, 13/60, 13/144*
U.S. Cl. 15—262 **7 Claims**



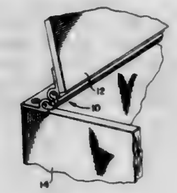
A wringer comprising a rotating first roller and a second roller mounted for movement toward and away from the first roller, and a single lever to effect such movement and to rotate said second roller by a gear and curved rack arrangement to squeeze an article positioned between the two rollers and to expel the article from between the rollers.

3,441,974
ADJUSTABLE LEG SUPPORT
Hollie Thomas Dean, 107 N. Artizan St., Williamsport, Md. 21795
Filed Aug. 31, 1967, Ser. No. 664,788
Int. Cl. B60b *33/06, 33/00, 33/04*
U.S. Cl. 16—33 **6 Claims**



A leg support including a wheel providing a mobile support and a bell-shaped foot member yieldably supported in an elevated position around the wheel, when said wheel is in an operative surface engaging position. A nut which is threadedly mounted on the post of the wheel fork functions to displace the foot member downwardly into a surface engaging position and to elevate the wheel to provide a stationary leg support of substantial area and which is capable of flexing to conform to inclined supporting surfaces.

3,441,975
CONTINUOUS HINGE
Charles E. Shepherd, 4202 Markham, Houston, Tex. 77027
Filed July 25, 1967, Ser. No. 655,821
Int. Cl. E05d *9/00, 15/00;* **E05g** *1/06*
U.S. Cl. 16—150 **3 Claims**

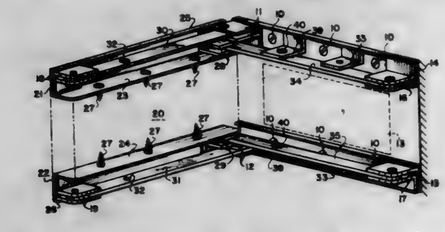


A continuous hinge comprising a separate plastic hinge section having a longitudinally extending depression formed therein defining a hinge axis, the opposed sides of said plastic section being respectively mounted to rigid supporting and hinged members.

3,441,976
TWO-WAY HINGE
Giovanbattista Bellomo, 441 S. 16th St., Newark, N.J. 07103
Filed June 30, 1967, Ser. No. 650,425
Int. Cl. E05d *3/06, 7/02*
U.S. Cl. 16—163 **3 Claims**

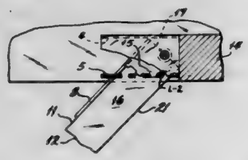
A two-way hinge enabling a door to hinge right or left, having right top and bottom door brackets connected to right top and bottom doorway brackets, by a pair of top and bottom pivotable arms; and also having left top and bottom doorway brackets connected to left top and

bottom door brackets by a pair of top and bottom pivotable arms; and pairs of top and bottom lock brackets for rigidly securing one or the other of the pairs of top



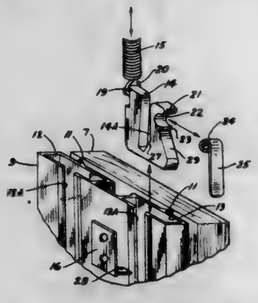
and bottom pivotable arms to one of the pairs of top and bottom lock brackets, to restrict the hinging of the door to one direction.

3,441,977
HINGE
Francis C. Peterson, Webster Groves, Mo., assignor to C. Hager & Sons Hinge Manufacturing Company, St. Louis, Mo. a corporation of Missouri
Filed May 20, 1966, Ser. No. 551,740
Int. Cl. E05d 5/10
U.S. Cl. 16—168 8 Claims



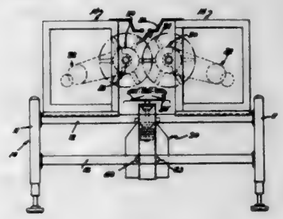
A hinge comprising a gear plate secured to a door frame and a door mounting member secured to a door, said door mounting member having a pinion with teeth thereon adapted to fit into spaces between lugs on said gear plate so that the door moves away from the vertical portion of the door frame as the door is opened.

3,441,978
ANCHOR FOR TILTABLE SASH BALANCER
James G. Perry, 12981 Capital Ave., Oak Park, Mich. 48237
Filed Nov. 6, 1967, Ser. No. 680,754
Int. Cl. E05d 17/00
U.S. Cl. 16—197 6 Claims



This application discloses an anchor for the balance spring of a tilt type window sash. The invention resides in the construction, arrangement and functioning of the anchor element. The anchor consists of a substantially U-shaped member, the free end of each leg having an outwardly directed portion. The end portion of one leg has a hook formed thereon for receiving the end of the balancer spring. The end portion of the other leg has a radius, terminating in a lip formed thereon, for receiving a cylindrical wedge element, the latter element has a downwardly directed locking arm. The same leg has an inclined section for receiving the cylindrical wedge. The central opening of said U-shaped member is arranged to receive the arm of a bracket carried on the window sash. There being an angular face on the inside wall of the last named leg for tilting said U-shaped member into non-locking position when the arm of the sash bracket contacts it. The central opening of the U-shaped member is of sufficient width to permit a 90 degree rotation of the sash bracket arm therein, so that the window sash may be tilted and removed from the window frame.

3,441,979
POULTRY PICKING MACHINE
Allen L. Masters, Ottumwa, Iowa, assignor to International Agri-Systems, Inc., Ottumwa, Iowa, a corporation of Iowa
Continuation-in-part of application Ser. No. 525,969, Feb. 8, 1966. This application Dec. 21, 1966, Ser. No. 603,525
Int. Cl. A22c 21/02
U.S. Cl. 17—11.1 11 Claims



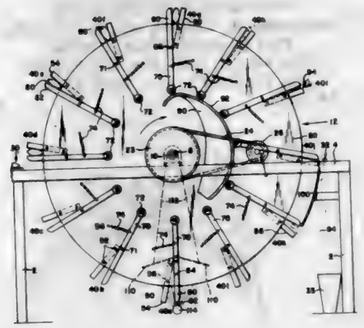
An apparatus for picking fowl comprising two elongated drum pickers mounted in side-by-side relationship on a suitable frame between which the fowl to be picked are adapted to pass. The drums have flexible fingers attached thereto and are rotated by any conventional means such as a motor. Mounted below the path and rotatable about an axis directed vertically toward the path are a series of aligned frusto-conical finger supports upon which are mounted sets of flexible fingers. The frusto-conical finger supports are rotated during utilization of the apparatus. It is understood that this abstract is not to be utilized to limit the scope of this invention.

3,441,980
INJECTOR OF MEAT TENDERIZING AND FLAVORING PREPARATIONS AND SUBSTANCES
George Earl Defenbaugh, 5802 S. New Haven, Tulsa, Okla. 74135
Filed Feb. 16, 1967, Ser. No. 616,547
Int. Cl. A22c 9/00
U.S. Cl. 17—30 2 Claims



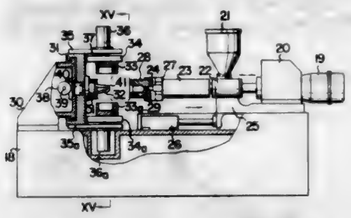
The injector invented consists of the use of dull-crested extrusions having flat bottom valleys spiralling loosely clockwise and counter clockwise around pointed prongs which project from a handle. All extrusions' crests are equidistant from the center line of the prongs to which they are attached.

3,441,981
MACHINE FOR REMOVING MEAT FROM PARTS OF A CRAB
Calvert B. Tolley, Wingate, Md. 21675
Filed Mar. 30, 1967, Ser. No. 627,091
Int. Cl. A22c 29/00
U.S. Cl. 17—71 3 Claims



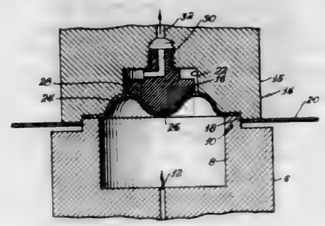
Machine for squeezing meat from pre-cut parts of a hard shell crab, having a rotating body carrying a member of pairs of vanes, one vane of each pair being movable toward and away from the other as the body rotates. Pre-cut crab parts are placed between the vanes of each pair at a loading station, and as the body rotates the movable vane of each pair is moved toward the fixed vane to squeeze out the crab meat, which is removed at a delivery station and collected for use. The remaining trash is removed as the movable vanes move away from the fixed vanes after leaving the delivery station, and this separation permits additional pre-cut crab parts to be placed between the vanes of each pair.

3,441,982
APPARATUS FOR INJECTION BLOW MOULDING
Toshio Sagara, Masahiro Shoji, and Hiroshi Tsukahara, Numazu-shi, Japan, assignors to Toshiba Kikai Kabushiki Kaisha, Tokyo-to, Japan
Filed Nov. 9, 1965, Ser. No. 506,978
Int. Cl. B29c 1/00, 17/04
U.S. Cl. 18—5 4 Claims



1. Apparatus for injection blow moulding a hollow article having a neck smaller than the main body of the article, such as a bottle, said apparatus comprising at least one cooperating preliminary male mould and a female mould, said preliminary female mould being an undivided type, means on which said preliminary male mould is mounted for holding said male mould stationary, mould moving means on which said preliminary female mould is mounted for relatively moving said preliminary female mould toward and away from said preliminary male mould coaxially of said moulds to form an injection cavity therebetween, injecting means connected to said preliminary female mould to inject a placticized moulding material into said injection cavity through said preliminary female mould to form a hollow blank which is smaller than said article, mould separating means coupled to said moulds to separate said preliminary male and female moulds while retaining said blank on said preliminary male mould, a pair of split type blow moulding mould members, said blow moulding members being concentric with said preliminary male mould and movable relative to said preliminary male mould only in a direction perpendicular to the direction of relative movement of said preliminary male and female moulds, mould moving means connected to said blow moulding mould members to hold said blow moulding members open and spaced apart from said preliminary male mould during the period wherein said hollow blank is being moulded and to close said blow moulding mould members around said preliminary male mould and said hollow blank, pressure fluid supply means connected to said preliminary male mould to introduce a fluid under pressure into said hollow blank through said preliminary male mould to expand said hollow blank against the inner surfaces of said blow moulding mould members, whereby said hollow article is formed.

3,441,983
APPARATUS FOR FORMATION OF THERMOPLASTIC SHEET INTO A CUP-LIKE CONTAINER
Grant W. Cheney, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Sept. 9, 1963, Ser. No. 307,558
Int. Cl. B29c 17/04
U.S. Cl. 18—19 3 Claims

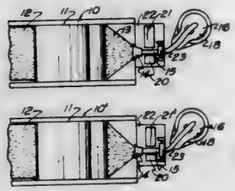


1. Apparatus for forming moldable thermoplastic sheet material into a container comprising, a mold cavity having a container forming recess, and a peripheral projection which serves as a material severing means, and a mold top assembly having a recess with a symmetrically formed undulated curved surface which will provide controlled prestretch of the sheet material at desired areas thereon, said mold top assembly being movable toward the mold cavity and being formed with a disc-like recess which is arranged for a sliding fit with said peripheral projection, said symmetrically formed undulated surface having an axially disposed rounded projection extending in the direction of said disc-like recess, and said mold top assembly being formed to provide a passageway selectively connectible with either a source of subatmospheric pressure or a source of superatmospheric pressure, said mold cavity being formed to provide a passageway selectively connectible with either a source of superatmospheric pressure or a source of subatmospheric pressure.

3,441,984
SELF-MONITORING CARD
Morris M. Bryan, Jr., Jefferson, and Morris W. Roberts, Chamblee, Ga., assignors to The Jefferson Mills, Inc., Jefferson, Ga., a corporation of Georgia
Filed July 28, 1966, Ser. No. 568,548
Int. Cl. D01g 31/00, 23/06
U.S. Cl. 19—.23 2 Claims

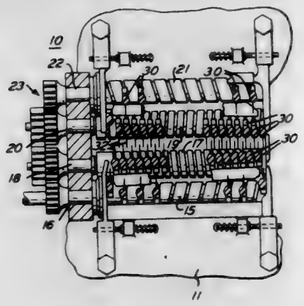
A carding machine for treating textile fibers wherein the web of fibers is fed through a trumpet to form a

sliver, the sliver is monitored to determine its density, and the operation of the carding machine is terminated



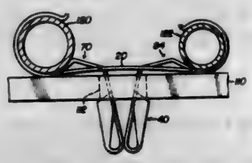
when the average density of the sliver is not within a predetermined density range for a set length of the sliver.

3,441,985
FALLER
Robert H. Hood, Abington, Pa., assignor to R. H. Hood Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed July 12, 1967, Ser. No. 652,957
Int. Cl. D01g 19/00
U.S. Cl. 19—129 5 Claims



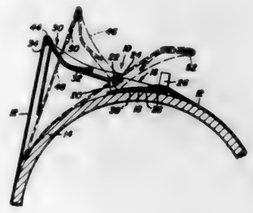
A faller bar for use in textile fiber drafting apparatus known as gill boxes or pin drafters, the bar being of self-lubricating material and provided with a longitudinal edge rib which substantially eliminates or reduces the clearance between successive bars and thus reduces bending of the bars in operation without interfering with the relative movement of the bars.

3,441,986
FASTENING CLIP
John S. Pritchard, Utica, Mich., assignor to Robin Products Company, Warren, Mich., a corporation of Michigan
Filed Aug. 31, 1967, Ser. No. 664,715
Int. Cl. F16l 3/02; F16b 17/00
U.S. Cl. 24—73 10 Claims



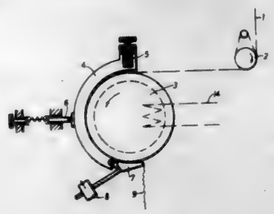
A fastening clip for securing cables, tubes, rods and the like to a support. The clip is a one piece resilient strip formed with a base having holding clips on each end thereof with locking barbs depending from an intermediate portion of the base and legs depending from the base on each side of the locking barbs and adjacent the holding clips to cooperate with the holding clips to form locks and to aid in securement to a support.

3,441,987
BAND MOUNTING CLIP
Raymond W. Cregier, Rte. 1, Box 430, Port Orchard, Wash. 98366
Filed May 8, 1967, Ser. No. 636,876
Int. Cl. F16l 33/12; B65d 63/08
U.S. Cl. 24—271 6 Claims



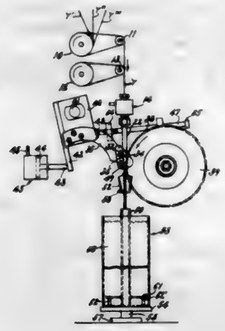
A clamp assembly including an elongated flexible but stiff and deformable band-like tension member and an anchor assembly to which one end of the tension member may be secured and including a movable portion with which a reversely bent portion of the other end of the tension member may be engaged, the movable portion of the anchor assembly being shiftable between a first release position and a second locking position and including means operative to crimp and frictionally lock the reversely bent end portion of the tension member to the movable member as the latter is moved toward the locked position and subsequent final movement of the movable portion to the locked position serving to tension the tension member.

3,441,988
PROCESS AND AN APPARATUS FOR THE PRODUCTION OF CRIMPED FILAMENTS
Hans Bach, Dormagen, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
Filed Sept. 20, 1966, Ser. No. 580,682
Claims priority, application Germany, Sept. 29, 1965, F 47,306
Int. Cl. D02g 3/00
U.S. Cl. 28—1 5 Claims



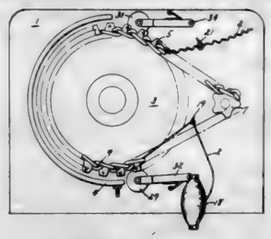
A process and apparatus by means of which improved, fixed-crimp filaments are obtained, involving the passage of such filaments into a wedge-gap zone formed by the outer surface of a crimping roll and the inner surface of an adjustable surrounding segment and heating said filaments in said zone and retarding movement of the resultant crimped filaments to a lower rate than said filaments leave the wedge-gap zone, and removing the filaments from the retarding step or zone.

3,441,989
METHOD AND APPARATUS FOR TEXTURING YARN
Robert J. Clarkson, Winnsboro, and Robert Miller, Columbia, S.C., assignors to Uniroyal, Inc., New York, N.Y., a corporation of New Jersey
Filed Apr. 21, 1967, Ser. No. 632,612
Int. Cl. D02g 1/16; D01d 5/22
U.S. Cl. 28—1 15 Claims



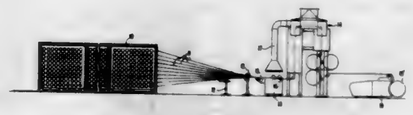
Thermoplastic yarns are textured by a method and apparatus in which the yarn is jetted into a nip of two arcuate surfaces to longitudinally compress the same and pack it in the nip, it is passed through the nip in its packed condition and drops under substantially no tension other than its own weight, and still in its crimped condition, into a container or conveyor and set. The setting may take the form of reheating and subsequently cooling the yarn before subjecting it to longitudinal tension.

3,441,990
APPARATUS FOR TEXTURIZING YARNS
Stanley E. Ross, Passaic, Charles P. Mazzone, Dover, and Carl J. Russo, Montvale, N.J., assignors to J. P. Stevens & Co., Inc., New York, N.Y., a corporation of Delaware
Filed Aug. 25, 1967, Ser. No. 663,255
Int. Cl. D02g 3/00
U.S. Cl. 28—1 16 Claims



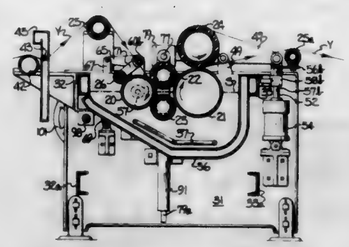
A crimping apparatus comprising a frame, a heated wheel rotatably attached to said frame and having two rows of peripheral dents having openings in the sides thereof and a peripheral groove positioned therebetween; a plurality of pins positioned in the said openings of adjacent dents; and endless crimping means adapted to engage said dents in said sprocket and having such diameter as to set within the said peripheral groove so as to pass over said pins; a tension regulating roller for pressuring said crimping means; a drive roller for guiding said crimping means around said wheel whereby material to be crimped is passed between said crimping means and said pins.

3,441,991
METHOD AND APPARATUS FOR FORMING LOOM BEAM
Morris M. Bryan, Jr., Jefferson, Ga., assignor to The Jefferson Mills, Inc., Jefferson, Ga., a corporation of Georgia
Original application Jan. 18, 1966, Ser. No. 521,369, now Patent No. 3,321,153, dated May 23, 1967. Divided and this application Nov. 3, 1966, Ser. No. 591,804
Int. Cl. D03j 1/02; D02g 3/36, 1/16
U.S. Cl. 28—28 11 Claims



Apparatus for forming a loom beam directly from individual yarn packages, including the combination of a creel comprising a plurality of mobile creel trucks movable into a stationary creel frame, means for withdrawing the yarns from the creel, means for applying sizing to the yarns, means for drying the yarns, and means for winding the yarns onto a spool to form the loom beam. The mobile creel trucks are constructed to support a plurality of yarn packages in upward and lateral rows, and include guide means movable into facing relationship with each yarn package to guide the yarn from the yarn package toward the side of the mobile creel truck. A second set of yarn guides are positioned on each side of the creel truck, at one end of the creel truck, to collect the yarns of lateral rows of yarn packages together as a group of yarns. The stationary creel frame includes yarn guides for collecting the groups of yarns of adjacent trucks.

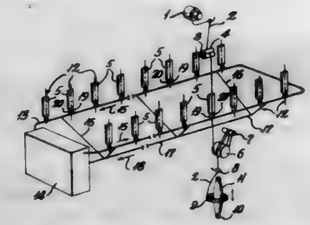
3,441,992
SIZE APPLICATOR HAVING AUXILIARY SQUEEZE ROLLS
Ira L. Griffin, Sr., Charlotte, N.C., assignor to Ira L. Griffin & Sons, Inc., Charlotte, N.C., a corporation of North Carolina
Filed Jan. 16, 1968, Ser. No. 698,195
Int. Cl. D03j 1/02
U.S. Cl. 28—28 16 Claims



An apparatus for applying size solution to textile yarns and having a pair of main squeeze rolls cooperating with upper and lower auxiliary squeeze rolls which are "sandwiched" between and maintained in pressure engagement with the main squeeze rolls to form yarn squeezing nips therewith. In one embodiment, the auxiliary squeeze rolls engage the main squeeze rolls with

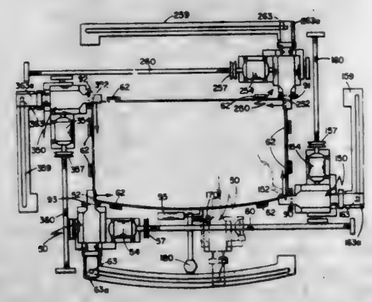
equal pressures. In another embodiment, the pressure of the auxiliary squeeze rolls against the main squeeze rolls may be independently varied and the upper auxiliary squeeze roll may be raised independently of the lower squeeze roll.

3,441,993
APPARATUS FOR HEAT-TREATING TRAVELLING THREADLIKE PRODUCTS
Willem Stelwagen, Toutenburgstraat 5, Arnhem, Netherlands
Filed May 29, 1967, Ser. No. 641,925
Claims priority, application Netherlands, Nov. 8, 1966, 6615712; Dec. 6, 1966, 6617099
Int. Cl. D02j *13/00, 1/22*
U.S. Cl. 28—62 25 Claims



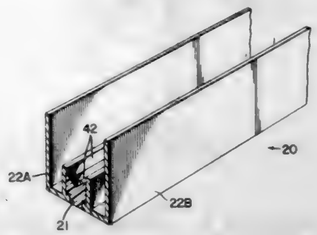
An apparatus for uniformly heat-treating travelling synthetic yarns or other threadlike products which comprises a plurality of processing positions or units for the yarn, each unit comprising yarn feeding means, yarn guiding and transport means and a hollow heating element in contact with the yarn, a main supply line extending along the processing units for conveying a heated, condensing vapor, e.g., saturated steam, to the heating elements, each of the heating elements having inlet and outlet means connected to the supply line for passing heated vapor therethrough, and constriction means arranged in the supply line for providing a reduced flow passage within a portion of the supply line adjacent to each heating element and operatively associated with the inlet and outlet means of each heating element to ensure substantially uniform vapor supply, vapor discharge and condensate discharge for all heating elements.

3,441,994
CUSHION COVER MACHINE
Harold B. Wylie, Barrington, R.I., assignor to Panelstitchers, Inc., Leominster, Mass., a corporation of Massachusetts
Filed Dec. 12, 1966, Ser. No. 601,191
Int. Cl. B68g *7/00*
U.S. Cl. 29—91 8 Claims



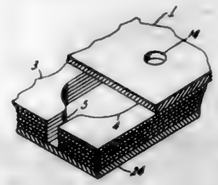
A machine is disclosed for semi-automatically and rapidly attaching together the components of a welted cushion cover or the like. Top and bottom panels are attached to a preformed side strip mounted on an adjustable forming frame. The illustrated example uses four (4) moveable sewing machine heads to simultaneously joint all the edges of a panel to the side strip.

3,441,995
METHOD AND APPARATUS FOR MAKING A THERMALLY INSULATING JOINT CONSTRUCTION
Donald H. Revell and William A. Nolan, Louisville, Ky., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Oct. 6, 1966, Ser. No. 584,792
Int. Cl. B23p *11/00*; B21d *39/00*; F16b *1/00*
U.S. Cl. 29—155 13 Claims



A method and apparatus for making a thermally insulating joint construction from a thermal insulating member and a structural member by placing a channel portion of the structural member over the insulating member, slitting the base portion of the channel part of the structural member to define a pair of adjacent flange means thereof and forming the flange means into clamping engagement with clamping surfaces of the thermal insulating member whereby the resulting joint construction is provided having a pair of spaced apart structural members with the thermal insulating member clamped therebetween.

3,441,996
METHOD OF MANUFACTURING LAMINATED FLUID AMPLIFIERS
Willis A. Boothe, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Continuation-in-part of application Ser. No. 248,630, Dec. 31, 1962. This application Nov. 30, 1966, Ser. No. 616,140
Int. Cl. B21d *53/00*
U.S. Cl. 29—157 15 Claims



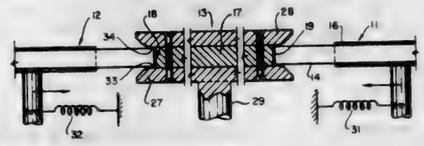
Fluid amplifiers are manufactured by forming a fluid flow pattern in laminates, and then stacking a number of the laminates to obtain a desired fluid flow capacity. The laminates are superposed between two cover plates and are fastened together in fluid-tight relationship by diffusion bonding or other methods to form a unitary structure.

3,441,997
METHOD OF MAKING TIRE VALVE INSERTS
James F. Scherer, Box 210, Milford, Ohio 45150
Continuation-in-part of application Ser. No. 387,070, Aug. 3, 1964. This application Aug. 31, 1964, Ser. No. 394,382
Int. Cl. B21d *53/00*
U.S. Cl. 29—157.1 9 Claims



A method of making tire valve inserts from a cylindrical metal tube comprising the steps of axially compressing to form a peripheral flange, radially expanding, forming internal tapers, and threading various internal as well as external sections of said tube.

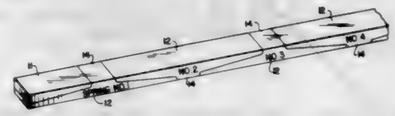
3,441,998
METHOD OF MAKING A CAPSTAN
Marcel Furst and Mervin L. Falk, Sunnyvale, Calif., assignors to Newell Associates, Inc., Sunnyvale, Calif., a corporation of California
Filed Feb. 9, 1967, Ser. No. 614,967
Int. Cl. B21k *1/00*
U.S. Cl. 29—159 2 Claims



Tape roll drive capstan having a periphery wherein the outer margins are harder than intermediate portions so as to eliminate "cupping" of tape rolls. Method of manufacture obtains the difference in hardness from uniformly homogeneous material.

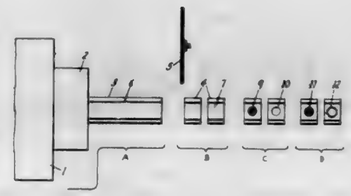
3,441,999
METHOD OF AND APPARATUS FOR MAKING TAPERED SPRING LEAF BLANKS AND THE LIKE
Willard F. Perdue and Howard O. Collins, New Castle, Pa., assignors to North American Rockwell Corporation, Pittsburgh, Pa., a corporation of Delaware
Filed Sept. 12, 1966, Ser. No. 578,607
Int. Cl. B21f *35/00*; B23p *13/00, 17/00*
U.S. Cl. 29—173 14 Claims

A method of making spring leaf blanks directly from a constant width bar of spring steel stock of rectangular cross section wherein successive longitudinal cuts of the same length are made in inclined planes extending entirely across the bar from one side to the other, alternate cuts being oppositely inclined at the same angle and entering and exiting from said blank in parallel transverse lines disposed at the constant width side surface of said blank. The bar has a constant thickness that corresponds to the thickness of the center section of the final spring leaf, and the succeeding entry and exit cut lines across each side surface of the bar are spaced a distance equal to the desired longitudinal dimension of each spring leaf center section. Preferred apparatus for carrying out the method comprises means for holding said bar stationary



with its leading end in a cutting station wherein two successive oppositely inclined cuts are made by a pattern guided flame and then shifting said bar endwise to dispose a succeeding leading end section within said cutting station.

3,442,000
TURNBUCKLES
Russell H. Dornbos, Spring Lake, Mich., assignor to Gerwin Industries, Inc., Michigan City, Ind.
Filed Mar. 29, 1967, Ser. No. 626,843
Int. Cl. B23p *15/00*
U.S. Cl. 29—175 6 Claims

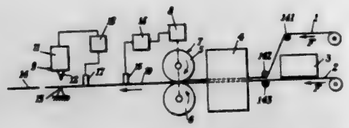


Manufacturing steps of extruding tubular metal bar stock of greater width than thickness and having edges of reduced thickness, with an internal bore of rectangular cross section in the thicker portion of the tube; cutting the tube transversely into slugs of lesser width than the thickness of the tube, boring alined holes into the ends of the slugs through narrower ends formed from the reduced edges and into the ends of the oblong opening formed by the extrusion; and tapping the holes with oppositely pitched threads at opposite ends of the slugs.

3,442,001
PROCESS AND APPARATUS FOR THE AUTOMATIC MANUFACTURE OF PANELS WITH INTEGRATED TUBE-CIRCUITS
André Canteloube, 10 Ave. de Bretteville, Neuilly-sur-Seine, Hauts-de-Seine, France
Continuation-in-part of abandoned application Ser. No. 510,786, Dec. 1, 1965. This application Jan. 11, 1968, Ser. No. 697,133
Claims priority, application France, Feb. 28, 1961, 854,128, Patent 1,290,251
Int. Cl. B23q *17/18*; B23p *17/00*
U.S. Cl. 29—407 34 Claims

A process and apparatus for the automatic and continuous manufacture of intermediate panels comprising integrated tube-circuits by means of two strips delivered continuously and applied against each other by rolling after printing on one of the opposite faces of said strips a tube-circuit pattern formed of a material which prevents adhesion of said faces. The strip on which the tube

circuits are printed is provided prior to rolling with a marking which is retained after rolling and which comprises in respect of each tube circuit at least one mark positioned in a predetermined manner with respect to said



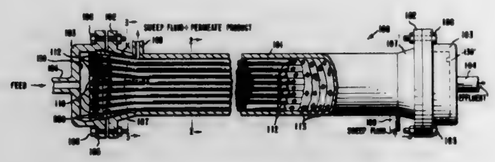
tube circuit. The position of the mark is detected after rolling but prior to cutting of the strip into panels and the cutting operation is controlled as a function of the length of strip which is delivered after transition of the mark which has thus been detected.

3,442,002

METHOD OF MANUFACTURE OF FLUID SEPARATION APPARATUS

James Edward Geary, Jr., Claymont, Del., William Edward Harsch, Staunton, Va., John Murdock Maxwell, Glen Farms, Md., and Richard Donald Rego, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Dec. 22, 1965, Ser. No. 515,535
Int. Cl. B01d *13/00;* **C02b** *1/60*
U.S. Cl. 29—450 **13 Claims**



A manufacturing arrangement, for producing a differential permeation fluid separation unit of the type comprising an elongated tubular casing assembly each end of which is closed by a fluid-tight centrifugally cast wall member of polymeric composition, said unit further comprising a bundle of very small diameter filaments of polymeric composition positioned in the casing, said filaments maintained substantially parallel and in a compact bundle by a flexible porous sleeve member extending along said bundle and having hollow interior portions and open end portions extending through portions and open end portions extending through the wall members, said bundle formed from a hank of continuous hollow filaments, said bundle having end portions each comprising a plurality of loops of said continuous filaments as they traverse the bundle, the ends of the bundle having been encapsulated in a centrifugally cast wall member at the ends of a casing member in which the bundle is positioned and the end portion of the bundle then having been severed to expose the open ends of the encapsulated hollow filaments.

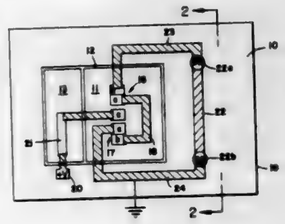
3,442,003

METHOD FOR INTERCONNECTING THIN FILMS

Basil Weir, Palo Alto, Calif., assignor, by mesne assignments, to Teledyne, Inc., Hawthorne, Calif., a corporation of Delaware

Filed July 26, 1965, Ser. No. 474,775
Int. Cl. B23k *31/02;* **H01l** *1/00*
U.S. Cl. 29—472.1 **4 Claims**

In an integrated circuit two thin film areas such as aluminum and tantalum are ohmically connected by placing a preformed metal bridge, such as gold, across the areas. Subsequent heating produces simultaneous solid



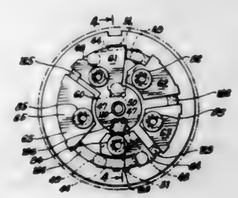
diffusion of the gold bridge atoms into the tantalum and aluminum areas to form an ohmic bond.

3,442,004

METHOD OF MAKING ELECTRICAL SWITCHES

William N. Schink, Crystal Lake, Ill., assignor to Indak Manufacturing Corp., Northbrook, Ill., a corporation of Illinois

Original application July 2, 1964, Ser. No. 379,894, now Patent No. 3,329,790, dated July 4, 1967. Divided and this application Feb. 9, 1967, Ser. No. 614,999
Int. Cl. H01h *65/00*
U.S. Cl. 29—622 **3 Claims**



A plurality of contact segments are formed as a single plate or unit, stamped from sheet metal, and with an interconnecting outer spider. The plate is then mounted on an insulating board having semi-perforated projections which extend between the contact segments. A rivet or the like is employed to secure each contact segment to the board. The outer spider is then trimmed away or otherwise removed. The insulating board is formed with a recess, adapted to receive a prong on a terminal, by squeezing the recess into the insulating board, adjacent an opening therein.

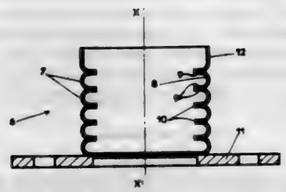
3,442,005

METHOD OF FORMING BELLOWS

Jean Langlet, Neuilly-sur-Seine, and Joseph Gustave Etienne Andre, Toulouse, France, assignors to Callisto, La Garenne and Sud-Aviation, Paris, France, French companies

Filed Apr. 4, 1966, Ser. No. 539,780
Claims priority, application France, Apr. 3, 1965, 11,854
Int. Cl. F16j *3/00*
U.S. Cl. 29—454 **3 Claims**

A method of forming a bellows by forming first a plurality of annular sheet metal elements having a pair of spaced substantially parallel flat annular portions integrally connected by a curved portion and having free annular edges opposite the curved portions, superimposing then the elements aligned along a common axis with the flat portions of adjacent elements abutting against



each other, and finally welding the abutting flat portions along the annular edges thereof to each other.

3,442,006

PROCESS FOR WELDING OR BRAZING TWO MEMBERS OF WHICH AT LEAST ONE IS MADE OF GRAPHITE

Lucien Robert Guichet, Petit Clamart, and Georges Jacques Gotoghian, Paris, France, assignors to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation, Paris, France, a company of France

No Drawing. Filed Dec. 12, 1963, Ser. No. 329,945
Claims priority, application France, Dec. 17, 1962, 918,873
Int. Cl. B23k *31/02*
U.S. Cl. 29—472.7 **4 Claims**

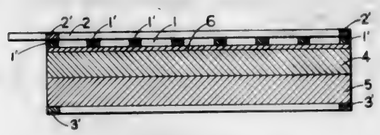
1. Process for welding-brazing a graphite member to a member made from graphite or a refractory material selected from the group consisting of tungsten, molybdenum, zirconium, halfnium, tantalum, titanium and niobium, and the nitrides, carbides and borides of these metals, said process including the steps of interposing between surfaces of said members which are to be united a fixative intermediate layer consisting of a mixture of (1) at least one refractory material selected from the said group together with (2) at least one metal selected from the group consisting of ruthenium, rhodium, palladium, osmium, iridium and platinum, wherein the metal of the latter group is present in the mixture in a proportion between 1% and 50% by mass, eutectic mixtures being excepted, bringing said members together and heating to an elevated temperature.

3,442,007

PROCESS OF ATTACHING A COLLECTOR GRID TO A PHOTOVOLTAIC CELL

Thomas A. Griffin, Lakewood, Richard J. Humrick, Parma Heights, and Edwin R. Hill, Chardon, Ohio, assignors to Kewanee Oil Company, Bryn Mawr, Pa., a corporation of Delaware

Filed Dec. 29, 1966, Ser. No. 605,864
Int. Cl. B23k *31/02;* **C09j** *5/00*
U.S. Cl. 29—472.9 **3 Claims**



Process for affixing a collector grid on the barrier of a cadmium sulfide solar cell by means of heat and pressure applied to the collector grid as it is superimposed on the barrier. Preferably the heat and pressure is applied incrementally to the collector grid and barrier, advantageously by passing through heated rolls.

3,442,008

METHODS OF MANUFACTURING ELECTRODES FOR CATHODE RAY TUBES

Jay H. Johnson, Owensboro, Ky., assignor to Kentucky Electronics, Inc., Owensboro, Ky., a corporation of Delaware

Application Dec. 30, 1965, Ser. No. 517,679, now Patent No. 3,381,156, dated Apr. 30, 1968, which is a continuation-in-part of applications Ser. No. 221,600, Sept. 5, 1962, and Ser. No. 221,601, Sept. 5, 1962. Divided and this application Jan. 8, 1968, Ser. No. 696,230
Int. Cl. H01j *9/02*
U.S. Cl. 29—477 **7 Claims**



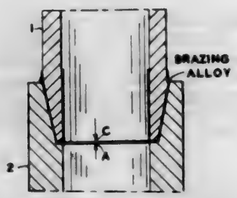
The method of forming cathode ray tube electrodes by rolling a thin flat blank into cylindrical form with two ends abutting at a seam is disclosed. The seam may be notched or welded to interlock and the blank may have its edges rounded to prevent possibility of burrs and resulting corona discharge. The latter may be accomplished by forming the blank of a wire which is rolled and flattened to a constant width blank with rounded edges.

3,442,009

METHOD OF BRAZING ALUMINUM TO FERROUS METAL

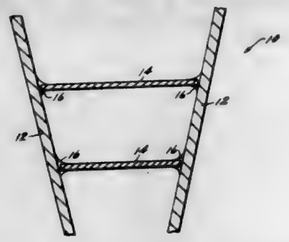
Robert R. Shellman, Northport, and Howard W. Crusey, Huntington, N.Y., assignors, by direct and mesne assignments of forty percent each to Robert R. Shellman, Northport, and forty percent to Filomena Monaco, Carlstadt, N.J., and twenty percent to Howard W. Crusey, Huntington, N.Y.

Filed Oct. 22, 1965, Ser. No. 500,621
Int. Cl. B23k *31/02, 1/20, 35/12*
U.S. Cl. 29—482 **5 Claims**



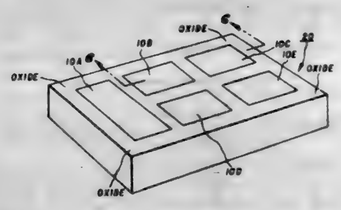
A method of brazing aluminum to ferrous metals. The parts are tapered to provide a predetermined end clearance at room temperature. More specifically, the ferrous piece is tapered and coated with aluminum and is inserted into the aluminum piece which has the same angle of taper as the coated ferrous piece. The room temperature clearance is calculated so that there will be proper fit and clearance at brazing temperature for the brazing alloy.

3,442,010
BRAZING METHOD
George F. Albers, West Chester, Ohio, assignor to General Electric Company, a corporation of New York
Original application Mar. 4, 1965, Ser. No. 437,041. Divided and this application Apr. 26, 1968, Ser. No. 736,889
Int. Cl. B23k *31/02*; C22c *15/00*; C22b *1/00*
U.S. Cl. 29—494 3 Claims



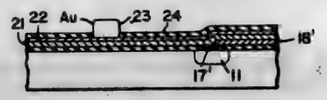
A method of joining titanium members involving the application of two metal powder slurries. The first slurry primarily containing titanium powder and the second slurry primarily containing silver powder.

3,442,011
METHOD FOR ISOLATING INDIVIDUAL DEVICES IN AN INTEGRATED CIRCUIT MONOLITHIC BAR
Frederick J. Strieter, Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed June 30, 1965, Ser. No. 468,209
Int. Cl. H01l *7/00*
U.S. Cl. 29—578 9 Claims



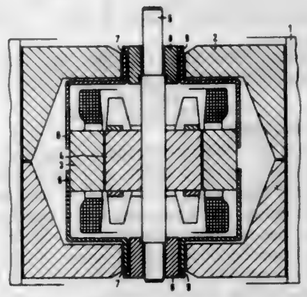
Disclosed is a method for fabricating individual components within a semiconductor body by converting a portion of the semiconductor body to an insulating material to thereby electrically isolate unconverted portions of the semiconductor body.

3,442,012
METHOD OF FORMING A FLIP-CHIP INTEGRATED CIRCUIT
Roger W. Murray, Palo Alto, Calif., assignor to Teledyne, Inc., Mountain View, Calif., a corporation of Delaware
Filed Aug. 3, 1967, Ser. No. 658,153
Int. Cl. B01j *17/00*; H01l *7/00*; B44d *1/18*
U.S. Cl. 29—590 5 Claims



A raised contact pad on a flip-chip type integrated circuit is coupled to an active region by providing a platinum ohmic contact in a window exposing an active semiconductive region. An initial underlay of aluminum which is easily etched allows the unwanted portions of platinum to be stripped away. Thereafter a second underlay of aluminum is selectively placed on areas which are to be ultimately stripped, except for the electrical contact region area between the semiconductive region and the raised contact. Layers of tantalum and gold are placed over the entire chip. The aluminum underlayer is then etched away allowing the gold tantalum layers to be stripped off except in the electrical circuit area. A raised gold contact pad is placed on the top gold layer to form the final device.

3,442,013
METHOD OF PRODUCING TIGHT FITS FOR BALL-BEARING HOLDERS BY MAGNETIC PULSE FORMING
Horst Schenk, Erlangen, and Erhard Proisl, Katzwang, Germany, assignors to Siemens Aktiengesellschaft, Berlin and Munich, Germany, a corporation of Germany
Filed Sept. 21, 1967, Ser. No. 669,606
Claims priority, application Germany, Sept. 23, 1966, S 106,046
Int. Cl. H02k *15/02*, *5/16*; B21d *26/02*
U.S. Cl. 29—596 3 Claims



Method of producing tight fits for ball-bearing holders by magnetic pulse forming which comprises mounting on a shaft, instead of the ball-bearing, a cylindrical phantom thereof consisting of material having a tensile strength substantially equal at least to that of steel and having an outer diameter that is greater than the clearance required for the respective ball bearing at the location of fit, placing a bearing holder in the form of an encasing tube of electrically conductive material over the phantom, and pressing the bearing holder rigidly against the phantom by a magnetic pulse forming process, thereafter removing the phantom and mounting the ball bearing on the shaft in place thereof, and fixing the ball bearing thereon against axial movement relative thereto.

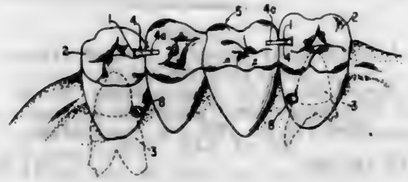
3,442,014
METHOD OF STABILIZING RESISTANCE IN SEMICONDUCTOR MANUFACTURE
John Lopacki, North Tonawanda, N.Y., assignor to The Carborundum Company, Niagara Falls, N.Y., a corporation of Delaware
Filed Mar. 4, 1966, Ser. No. 531,981
Int. Cl. H01c *7/04*
U.S. Cl. 29—612 5 Claims



This invention relates to a method of stabilizing the resistance of a semiconductor assembly comprising a semiconductor body of silicon carbide having metallic leads

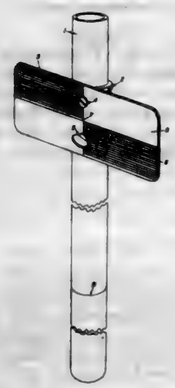
fused directly thereto by a bond including the carbide and silicide of the metal of the leads. The method comprises heating the semiconductor assembly in an oxidizing atmosphere at a temperature above the oxidizing temperature of the metallic carbide and silicide in the bond, but below the oxidation temperature of the semiconductor body for a time which is long enough to oxidize the metallic carbide and silicide to an extent sufficient to increase the resistance of the assembly to a value within the desired range of values.

3,442,015
RIGIDLY MOUNTED REMOVABLE FIXED BRIDGE
Herman W. Goodman, late of 333 W. 56th St., New York, N.Y. 10019; Sophie Goodman, executrix of said Herman W. Goodman, deceased
Filed July 25, 1966, Ser. No. 567,601
Int. Cl. A61c *13/22*
U.S. Cl. 32—6 11 Claims



Describes a rigidly mounted removable fixed bridge for denture wearers in which matching male and female members are provided on the bridge teeth and on the pier teeth and a screw tube and screws hold the bridge firmly in place but permit the bridge teeth to be removed and reinserted in their position between the pier teeth without destroying any portion of the bridge or the pier teeth.

3,442,016
SURVEYOR'S TARGET STAFF
Jonathan B. Kaye, 5529 Uppingham St., Chevy Chase, Md. 20015
Filed Nov. 17, 1967, Ser. No. 684,009
Int. Cl. G01c *15/06*
U.S. Cl. 33—74 1 Claim



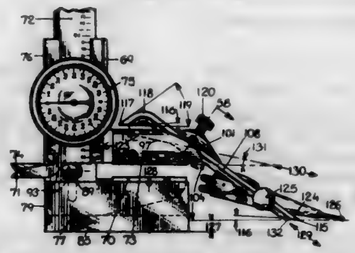
A surveyor's target staff, consisting of a vertical rod upon which is mounted a sliding target mount and target assembly. The assembly includes a set screw means to hold the assembly at any selected height on the rod. The cross marks for sighting on the front of the target are not interrupted by cutouts in the target, and are fully visible at the point of intersection.

3,442,017
SAMPLING LIQUID LEVEL MEASURING DEVICE
Francis Frenkel, Los Angeles, Calif., assignor to American Liquid Instruments, Inc., a corporation of California
Filed July 28, 1967, Ser. No. 656,847
Int. Cl. G01f *23/04*
U.S. Cl. 33—126.4 4 Claims



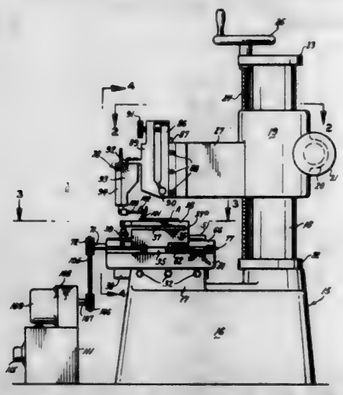
A liquid level indicator for determining the quantity and relative location of various liquids present within a tank. The indicator includes a transparent tube for viewing the quantity and relative location of the various liquids after a valve positioned at the end of the transparent tube is closed and the indicator is brought to the surface. A jacket having a scale and two vertical and parallel rows of slots so that the height of any liquid within the tube may be directly observed any place along the tube.

3,442,018
COMBINED MEASURING INSTRUMENTS
Gerard J. Viollet, El Segundo, Calif. (1619½ W. 134th St., Gardena, Calif. 90249)
Filed Oct. 31, 1966, Ser. No. 590,723
Int. Cl. G01b *3/22*
U.S. Cl. 33—169 5 Claims



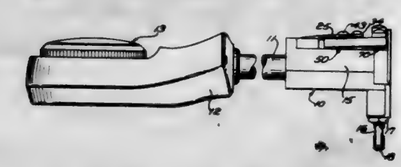
The height gauge has a scriber holder mounted on the movable jaw of the vernier caliper. The slot in the holder for receiving the jaw has an incline surface cooperating with the inclined surface of the jaw for varying the distance between the scriber mounted in the holder and the reference surface upon which the height gauge rests.

3,442,019
RECORDING TYPE PROFILE ANALYSING APPARATUS
Gary C. Breitweiser, Alton, Ill., and William B. Burford III, Webster Groves, Mo., assignors, by mesne assignments, to McDonnell Douglas Corporation, St. Louis County, Mo., a corporation of Maryland
Filed Jan. 24, 1966, Ser. No. 522,454
Int. Cl. G01d 5/02
U.S. Cl. 33—174 7 Claims



Thickness analysing apparatus for thin films whereby the measuring stylus for determining thickness and profile shape of a thin film remains stationary and the holder for the film moves relative to the stylus over a reference surface which establishes a plane in which motion occurs. The thickness response of the stylus is picked up by a linear variable differential transformer in which the transformer core is actuated by the stylus from a null position and is proportional to the displacement of the stylus, and the profile response is obtained by amplifier and magnification means which evaluate the voltage phase and value of the transformer output.

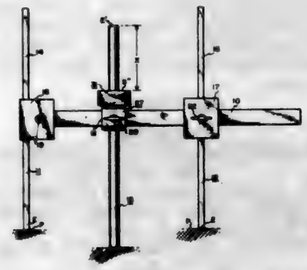
3,442,020
CENTERING MEANS FOR A BORE GAGE
John H. Worthen, Providence, R.I., assignor to Federal Products Corporation, a corporation of Rhode Island
Filed Feb. 23, 1967, Ser. No. 618,027
Int. Cl. G01b 5/12
U.S. Cl. 33—178 2 Claims



A bore gage having a dial indicator and a work contacting head with means to transmit motion to the indicator for determining the size of the bore into which the head is inserted with a novel centering means to properly locate the head in the bore.

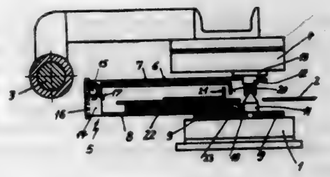
3,442,021
MACHINERY GAUGE
John Lelis, 1833 16th Ave., Salt Lake City, Utah 84103
Filed Feb. 28, 1966, Ser. No. 530,301
Int. Cl. G01b 5/14
U.S. Cl. 33—180 2 Claims

The present invention presents an end-for-end reversible machinery gauge tool for measuring the internal clearance between corresponding interior parts of opposite halves of machinery to be assembled. The tool incorporates an adjustable measuring finger, and adjustable gauge



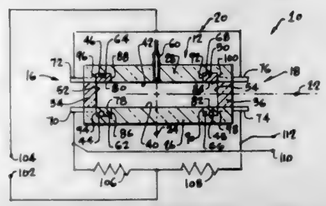
means disposed thereon, for determining the proper thickness of thrust washers to be used in "making up" the machinery.

3,442,022
MARKING APPARATUS FOR BUTTONS AND BUTTONHOLES
Erwin Maier, 19 Unterboihinger Strasse, 7317 Wendlingen, Wurttemberg, Germany
Filed Feb. 21, 1966, Ser. No. 528,984
Int. Cl. A41h 25/00
U.S. Cl. 33—190 12 Claims



Apparatus for simultaneously marking desired locations of buttons and buttonholes on a stack of superimposed pieces of fabric, including a plurality of aligned marker units, each unit including an upper and a lower portion, wherein each individual marker unit is constructed such that it may be shifted with respect to the remaining units merely by adjustment of a single guide member.

3,442,023
VERTICAL SENSOR
Richard C. Remington, Pompton Plains, and Eugene H. Buhler, Ridgewood, N.J., assignors to General Precision Systems Inc., a corporation of Delaware
Filed Jan. 24, 1966, Ser. No. 522,745
Int. Cl. G01c 9/06
U.S. Cl. 33—206 4 Claims



An orientation sensing apparatus for determining the direction and magnitude of tilt from a null position about a horizontal tilt axis comprising a nonconductive enclosure the inner walls of which are a right, circular cylinder and a pair of flat ends enclosing the cylinder. Pairs of congruent, arcuate electrodes are symmetrically disposed on diametrically opposite sides of the interior of the enclosure with the electrodes of each pair embedded in respective recesses of end walls and facing each other along corresponding arcs. The enclosure is substantially half filled with electrolyte and in a null position, equal surface portions of the electrodes are covered. In response to tilt, however, the surfaces of one pair of electrodes become covered to a greater extent and the surfaces of the other pair to a correspondingly lesser extent.

The spacing between electrodes of each pair is low relative to the spacing between an electrode of one pair and an electrode of the other pair to minimize cross coupling effects.

The electrical paths between electrodes of each pair may form respective branches of an electrical bridge circuit which has a pair of matched resistors as the other two branches and by proper excitation of the circuit, the unbalance of the bridge produced by tilting of the sensor can be electrically detected.

3,442,024
LEVEL VIAL HOLDER AND METHOD OF MAKING SAME
Jules M. Don, Naugatuck, Conn., assignor to The Stanley Works, New Britain, Conn., a corporation of Connecticut
Filed Dec. 28, 1966, Ser. No. 605,368
Int. Cl. G01c 9/24
U.S. Cl. 33—211 12 Claims



An assembly comprising a vial and a vial holder having a rim portion with generally inwardly extending openings therein providing seats for opposite end portions of the vial. The rim portion further includes a pair of resilient fingers in diametrically opposed relation to the seats and continuously urging the vial end portions into frictional engagement therewith for providing a quick and easy final adjustment of vial regulation. The final adjustment of the vial regulation is the last step according to a method of assembly of this invention wherein the vials are initially inserted in the vial holder and then the vial holder is permanently fixed in a level stock before final adjustment of the vial regulation.

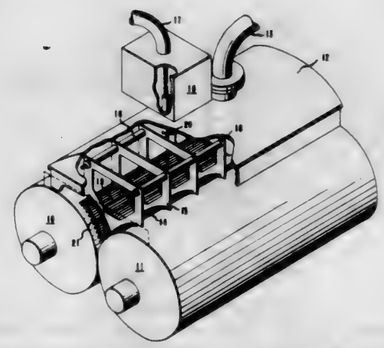
3,442,025
PLUMB BOB DEVICE
Arthur J. Mathiesen, 9130 Parkside, Morton Grove, Ill. 60053
Filed Jan. 13, 1966, Ser. No. 520,429
Int. Cl. G01c 15/10
U.S. Cl. 33—217 14 Claims

A unitary, self-storing plumb bob device including a housing, a spool within the housing having one end of a plumb line attached thereto, a plumb bob attached to the other end of the plumb line and receivable into the open end of the housing. A rewind handle, clutch, brake, and resilient retention means in the housing are provided for release and retrieval of the plumb bob during



use. The plumb bob device being adapted to mark the point from which a plumb line is drawn or to secure the device to this point.

3,442,026
DRUM DRYING OF POLYMERIC MATERIAL
Robert A. Bernard, Media, Pa., William T. Dove, Beaumont, Tex., and Julian C. Smith, Ithaca, N.Y., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Aug. 11, 1966, Ser. No. 571,881
Int. Cl. F26b 5/00; B01k 1/00
U.S. Cl. 34—1 6 Claims

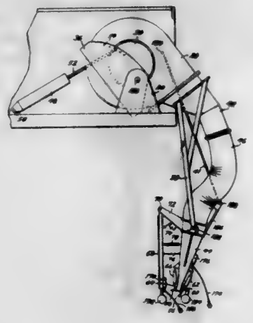


Apparatus and process for drum drying a dielectric solvent solution of a polymer by forming a pool of the solution in the nip of two revolving drums, and with a conductive grid in the nip pool creating a potential difference of at least 10,000 volts per inch between each drum and the grid.

3,442,027
VEHICLE CONTOUR FOLLOWER BLOWER
Paul D. Hurwitz, Wyncote, Pa., assignor to Sherman Car Wash Equipment Co., Palmyra, N.J., a corporation of New Jersey
Filed July 6, 1967, Ser. No. 651,656
Int. Cl. F26b 21/00
U.S. Cl. 34—54 12 Claims

Vehicle drying apparatus is provided having a single contoured nozzle connected to a rotatable blower by a

flexible conduit. Control means is provided to cause the nozzle to move up and down so as to follow the top



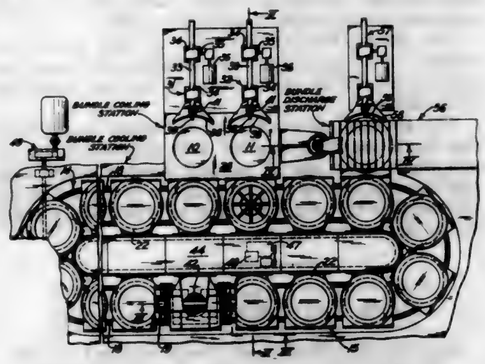
contour of the vehicle while blowing a sheet of air at the vehicle to dry the vehicle.

3,442,028
GAS-SOLIDS CONTACTING STRUCTURE
Maurice A. Bergougnou, Madison, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed Aug. 12, 1966, Ser. No. 572,102
Int. Cl. F27b *17/00, 15/10*
U.S. Cl. 34—57 19 Claims



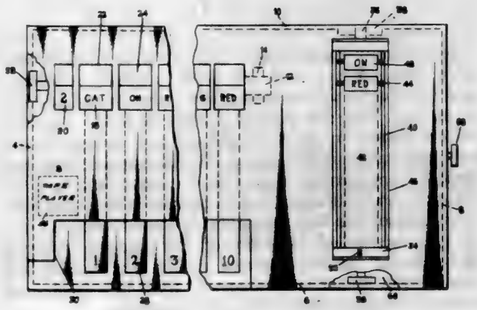
A plate, or mechanical distributing (or redistributing) device for improving contacting in chemical reactions, or physical inner actions, between fluids and fluid-like materials, particularly between fluids and particulate fluidized solids. The plate, which in use is disposed across a flow path, is characterized by a plurality, i.e., an array or distribution, of bin-like modules. Each module is defined by sidewalls which taper inwardly and downwardly, completely encircling and terminating in a bottom central nozzle opening. The sidewalls of a module are provided with relatively small openings, and the net flow of fluidized solids, or heavy materials, is through the bottom central opening while lighter fluids or gases flow upwardly through the side openings. The plates are particularly useful for the treatment of solids and gases at high temperatures, particularly when the plates are used in parallel array as baffles. They are especially adaptable for use in high temperture fluidized iron ore reduction reactions.

3,442,029
COOLING DEVICE FOR WORKPIECES, SUCH AS ROD BUNDLES
James Richard Adair, Pittsburgh, Pa., assignor to United Engineering and Foundry Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 15, 1967, Ser. No. 623,390
Claims priority, application Great Britain, Mar. 17, 1966, 11,863/66
Int. Cl. C21d *9/52, 1/74*
U.S. Cl. 34—105 9 Claims



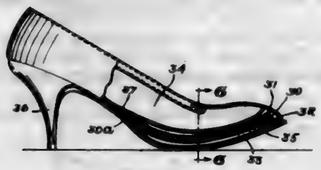
The present invention relates to an improvement in cooling heated workpieces and, more particularly, to a device for the controlled cooling of elongated workpieces, such as hot rods and bars immediately after they issue from a rolling mill.

3,442,030
DEVICE TO AID IN THE TEACHING OF READING
Louise Murphy Brock, Rte. 3, Belmont, Gainesville, Ga. 30501
Filed Aug. 9, 1968, Ser. No. 751,406
Int. Cl. G09b *17/00*
U.S. Cl. 35—35 9 Claims



For teaching reading, a pair of drums are mounted in a casing to turn about horizontal axes. One of the drums has a plurality of slats which are mounted to pass in front of openings in the top wall of the casing, the openings being substantially twice as wide as the slats. A strip is arranged to close the other half of the opening. The slats carry words which are legible through the openings, while no words are printed on the strip. Slides are manually movable from a position outside of each of the openings at the top to engage with blocks which are placed on the slats and are pushed by the slides onto the strip.

3,442,031
SHOE AND METHOD AND LAST FOR MAKING SAME
Joseph Antell, 425 Glen Road, Weston, Mass. 02193
Continuation-in-part of application Ser. No. 396,960, Sept. 16, 1964. This application Feb. 4, 1965, Ser. No. 432,444
Int. Cl. A43b *3/26, 13/38;* D05b *35/02*
U.S. Cl. 36—2.5 11 Claims



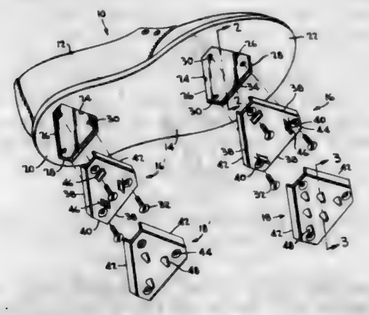
1. A shoe comprising an upper, a sole, an auxiliary sole disposed inside the shoe and having a first portion free of said sole and a second portion removably secured to said sole, and a sock lining overlying said auxiliary sole, freely over said first portion, said first portion having upper and lower surfaces covered with adhesive to secure said auxiliary sole to said sock lining and sole.

3,442,032
SHOE MANUFACTURE
Gilbert F. Jonas, Nashville, Tenn., assignor to Genesco, Inc., Nashville, Tenn., a corporation of Tennessee
Filed Aug. 23, 1965, Ser. No. 481,578
Int. Cl. A43b *1/00, 10/00*
U.S. Cl. 36—2.5 19 Claims



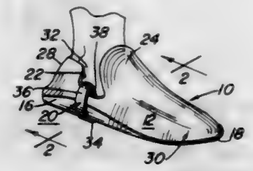
Stiffening portions of apparel and other things which are essentially flexible by applying to the portions thereof which require stiffness a strip of thermoplastic material having inorganic (glass, silicon carbide, aluminum oxide, metal) fibers embedded therein.

3,442,033
ATHLETIC SHOE WITH BASE INSERTS
Glenn E. Hilburn, Jr., Alexandria, Va. (46716 Crawford St., #23, Fremont, Calif. 94538)
Filed Jan. 16, 1967, Ser. No. 609,498
Int. Cl. A43b *5/00;* A43c *15/02, 15/04*
U.S. Cl. 36—2.5 5 Claims



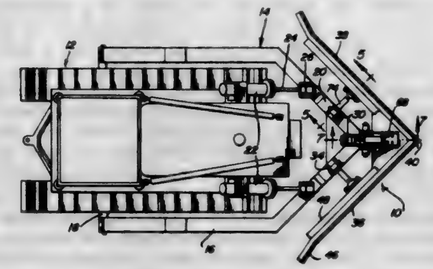
An athletic shoe having a base member with a plurality of recesses adapted to receive auxiliary base inserts. The auxiliary base inserts are formed with different kinds of outer surfaces to permit various uses of the combination shoe.

3,442,034
DISPOSABLE SURGEON'S BOOT
Frank C. Moore, 3935 Arthington Blvd., and Leon R. Perkinson, 4925 E. 40th St., both of Indianapolis, Ind. 46226
Filed Mar. 3, 1966, Ser. No. 531,461
Int. Cl. A43b *3/16*
U.S. Cl. 36—7.1 15 Claims



A disposable sanitary foot covering comprising a pair of superimposed layers of sheet material marginally heat sealed together by an intermediate film of impervious thermoplastic material having a lower fusing temperature, the upper of said layers being of porous or open-celled expanded plastic material and the bottom layer being a suitable fabric material having a melting point higher than the fusing temperature of the intermediate film, said upper layer having an opening therein for the insertion of a wearer's foot.

3,442,035
DOUBLE-BLADE DITCHER
Moise J. Hymel, Box H, Gramercy, La. 70052
Filed Jan. 5, 1966, Ser. No. 518,961
Int. Cl. E02f *5/02, 3/85;* A01b *59/048*
U.S. Cl. 37—98 11 Claims

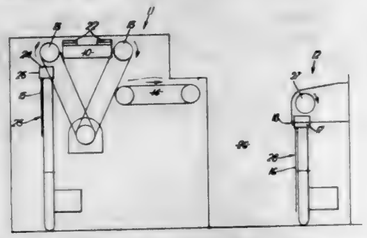


A ditcher blade assembly positioned by a tractor-mounted pivoted support for ditch digging purposes. A blade backing frame consisting of laterally spaced channels interconnected by triangular front braces mount rearwardly diverging blade sections from which lower cutting edge portions project. The frame is adjustably positioned on the pivoted support by turnbuckle joints.

3,442,036
FEEDING OF LAUNDRY FLATWORK
Ernest Taylor, Nottingham, England, assignor to Manlove, Alliott & Co., Limited, Nottingham, England
Filed Sept. 24, 1965, Ser. No. 489,919
Int. Cl. D06f *67/04;* D06c *3/06;* B65h *29/68*
U.S. Cl. 38—143 7 Claims

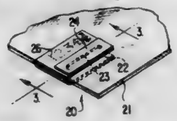
1. A laundry flatwork feeding device, comprising a conveyor frame means and first conveyor means thereon feeding laundry flatwork articles in succession along a conveying course leading toward a laundary ironing machine, a first edge-straightening device mounted at the upstream end of said frame means and operating on the

trailing edge of each flatwork article to straighten and smooth it, further frame means disposed downstream of said conveyor means and a second edge-straightening device mounted on said further frame means and operating



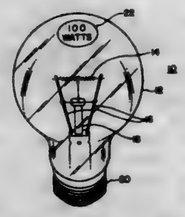
likewise on the trailing edge of the flatwork article but after said article has been turned over end for end whereby both end edges of said article are straightened and smoothed in succession.

3,442,037
MARKING TAG AND METHOD OF MAKING AND ATTACHING THE SAME
James J. Grimm, 90 Winthrop Road, Columbus, Ohio 43214, and Robert J. Valihura, 67 Grassland St., Lexington, Mass. 02173
Filed Apr. 7, 1967, Ser. No. 629,303
Int. Cl. G09f *3/02, 3/16, 3/10*
U.S. Cl. 40—2 **24 Claims**



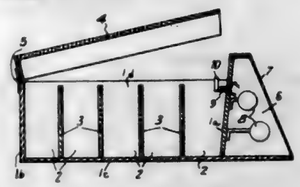
A price tag secured to an article by a nondamaging fine wire. A strip of tearable sheet material is folded over an edge of the article to be marked and a fine wire is passed through the sheet near its inward edge, then through the article, then through the opposite side of the sheet, whereafter the wire is folded parallel to the article with the ends of the wire extending toward the edge of the article. A cover layer is placed over the wire and is secured to the tearable sheet material by an adhesive to anchor the ends of the wire therebetween. The tag is removed by pulling the sheet material away from the article so that the wire tears through the sheet to free one end of the wire, whereupon on continued pulling, the freed end of the wire is withdrawn from the article.

3,442,038
LAMP MONOGRAM AND MONOGRAM INK
Walter A. Boyce, Glen Ridge, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 1, 1966, Ser. No. 530,882
Int. Cl. G09f *3/02*
U.S. Cl. 40—2.2 **7 Claims**



Monogram for glass lamp envelope substantially comprises a thin layer of glass adhered to the envelope and having finely divided silver oxide embedded therein. The glass of the thin layer has a softening temperature less than about 450° C. and also less than that of the glass envelope. The ratio by weight of the glass in the monogram to silver oxide in the monogram is from 1:1 to 2.5:1.

3,442,039
INDEX FILE FOR PHOTOGRAPHIC NEGATIVES WITH BUILT-IN VIEWER
Jean Michel Saizelet, 4 Ave. Hoche, Paris 8e, France
Filed Aug. 7, 1967, Ser. No. 658,730
Claims priority, application France, Aug. 12, 1966, 72,987
Int. Cl. G09f *13/10, 13/20;* **A47b** *47/02*
U.S. Cl. 40—106.1 **4 Claims**

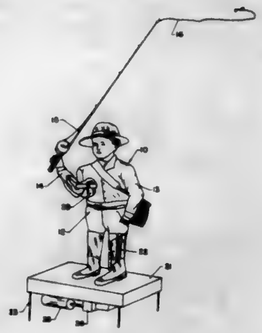


An index file cabinet structure for transparencies such as photographic and radiological negatives and diapositives of large format, and the like comprises a rectangular cabinet with a hinged lid, the interior of the cabinet being divided by parallel partitions into compartments for selected filing of the transparencies.

The cabinet is provided with a built-in viewing means which includes a chamber containing a light source in front of which is located a translucent plate to which the transparencies are attached for viewing. In one embodiment, the chamber, light source and translucent plate are located at the front of the cabinet. In another embodiment, these elements are incorporated in the lid structure.

Switch means actuated by the lid are provided for turning the light source on and off, the light source being turned on when the lid is opened, and turned off when the lid is closed.

3,442,040
ANIMATED FIGURE
Karl H. Dore, 361 Queen St., Fredericton, New Brunswick, Canada
Filed Sept. 1, 1966, Ser. No. 576,692
Int. Cl. G09f *19/08;* **A63h** *13/04, 33/26*
U.S. Cl. 40—106.35 **5 Claims**



An animated figure having a stationary body and an arm to which a fly rod or the like is secured, such arm being swingable from a horizontal position to a substantially vertical position, is described. The device includes a mechanism for actuating the arm so as to simulate the

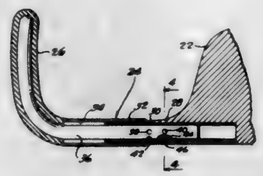
actions of an angler using fly casting equipment. The mechanism includes means for delaying the turn of the arm to the horizontal position to allow the fly line to move into what is known as the "back cast" position. The mechaniam also includes means to cause intermittent operation of the arm whereby the arm will remain in the horizontal position for a short period of time to simulate fishing between successive casts.

3,442,041
PLASTIC PHOTO MOUNT
Burton D. Morgan, Hudson, Ohio, assignor to Morgan Adhesives Company, Stow, Ohio, a corporation of Ohio
Filed Oct. 4, 1966, Ser. No. 584,268
Int. Cl. G09f *1/10*
U.S. Cl. 40—158 **2 Claims**



A plastic photo mount laminate including a sheet of clear plastic of substantially rectangular shape has a pressure sensitive adhesive on the entire area of one surface of such sheet. Liner means in the form of first and second liner sheets are applied to the adhesive surface of the plastic sheet and are separately removable whereby the first liner sheet can be removed and an edge of a photo be abutted against an edge of the second liner to position the photo accurately in the laminate. Then the second sheet can be removed and the plastic sheet folded over into engage the exposed areas of adhesive on the non-folded sheet portion, the photo being smalled in size than one-half the area of the plastic sheet.

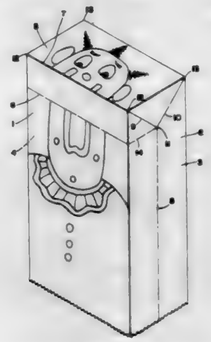
3,442,042
ROTATABLE AND SLIDABLE GUNSTOCK
William Van Tyle Gilbert, 3165 Ferndale St., Las Vegas, Nev. 89109
Continuation-in-part of application Ser. No. 490,180, Sept. 27, 1965. This application June 12, 1967, Ser. No. 645,208
Int. Cl. F41c *23/00*
U.S. Cl. 42—73 **5 Claims**



A gunstock for rifles which includes a cheek-engaging portion, a section extending rearwardly from the cheek-engaging portion, and an arm on the end of the rearwardly extending section in which the arm is rotatable with respect to the cheek-engaging portion and wherein the arm may form a downwardly open pocket, an upwardly open pocket or a sidewardly open pocket for receiving the arm or shoulder of the user is disclosed.

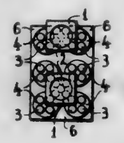
3,442,043
HAND ACTUATED PAPER BAG NOVELTY
Joyce C. Panzer, 2657 Friar Drive, Parma, Ohio 44134
Filed Sept. 23, 1966, Ser. No. 581,643
Int. Cl. A63h *33/00, 3/14;* **B65d** *31/00*
U.S. Cl. 46—11 **2 Claims**

The invention relates to a paper bag of conventional construction, wherein is disposed a figure consisting of portions movable relatively to each other to create an animated effect, whereby the hand of a child may be inserted into the open end of the bag and moved to a posi-



tion wherein the fingers are disposable between the bottom and the upper portion of the front panel of the bag and flexed to move the bottom relatively to the panel to create said animation.

3,442,044
CONSTRUCTION SET WITH MODULAR ELEMENTS
Alessandro Quercetti, 77/16 Via Bardonecchia, Turin, Piedmont, Italy
Filed Oct. 12, 1965, Ser. No. 495,236
Claims priority, application Italy, Dec. 4, 1964, 26,204/64
Int. Cl. A63h *33/08*
U.S. Cl. 46—16 **7 Claims**



A mosaic construction toy comprising elements including square unit elements of a unit modular length (a), having four connection pins protruding from a face, uniformly spaced and centered on the face, and the diameter (d) of said pins is equal to the distance (e) between diametrically opposite pins in each group, and has the value $d=a\sqrt{2}/6$, for allowing correct connection by insertion of the pins of an element between the similar pins of another element. Elements of multiple unit size are also provided, some of which have mutually interlocking edges. Sockets may be provided on faces opposite the pins to mate with the pin groups.

3,442,045
VARIABLE SPEED SELF-RIGHTING TOY
Joseph Green, 54 Prospect Ave., Hewlett, N.Y. 11557
Filed Feb. 6, 1967, Ser. No. 614,147
Int. Cl. A63h *15/06, 5/00*
U.S. Cl. 46—118 **4 Claims**

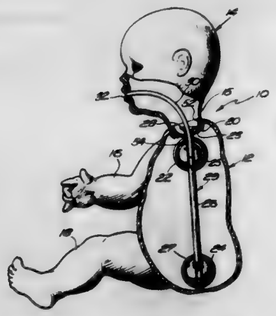
A self-righting toy of the type having a base of rounded configuration which is weighted to tend to maintain the toy in an erect position on a supporting surface is provided with a superstructure extending from the base and desirably formed of telescopically engaged tubular

sections so as to be adjustable in length for varying the speed of return of the toy to its erect position, and hence the frequency of oscillation about the erect position, upon



displacement therefrom. Chimes or the like may be provided in the toy for actuating in response to its oscillation.

3,442,046
DOLL CONSTRUCTION
Gregory L. Tumminio, Brooklyn, N.Y., assignor to Prima Vinyl Molding Co., Inc., Brooklyn, N.Y., a corporation of New York
Filed Jan. 3, 1968, Ser. No. 695,406
Int. Cl. A63h *3/24*
U.S. Cl. 46—161 **7 Claims**



A doll construction having a hollow body in which a plurality of openings are formed, a rod extending longitudinally of the hollow body and being interconnected to socket members that are mounted in head, leg and arm members wherein the head, arm and leg members are mounted for universal movement in said openings.

3,442,047
VEHICLE GUIDING TOY
John B. Quigley and John L. Dohanic, Jr., Girard, Pa., assignors to Louis Marx & Co., Inc., a corporation of New York
Filed Mar. 21, 1966, Ser. No. 535,893
Int. Cl. A63h *15/00*
U.S. Cl. 46—202 **3 Claims**



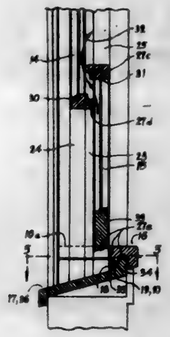
A vehicle turning and guiding track section for a wheeled vehicle in which a base has an entry end and an exit end with guide means at the entry end and a central guide wall with the guide means guiding a vehicle on to the track section and the guide wall guiding the vehicle therealong.

3,442,048
EJECTABLE WINDOW FOR A PASSENGER VEHICLE
Enrique Elias, No. 252 Av. Nuevo Leon, Mexico City 11, Mexico
Filed Mar. 17, 1967, Ser. No. 624,059
Int. Cl. E05c *15/02*
U.S. Cl. 49—141 **7 Claims**



A window for a passenger vehicle whose pane portion is secured to the frame portion by an inflated tube of pliable material simultaneously received in respective recesses in opposite edge faces of the pane and frame portions. When the tube is deflated, the pane portion of the window is ejected by springs.

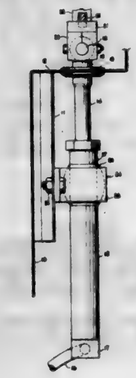
3,442,049
HINGED DOUBLE-HUNG WINDOWS
Peter Nachtsheim, 1927 S. Central Ave., South Plainfield, N.J. 07080
Filed Feb. 23, 1966, Ser. No. 529,279
Int. Cl. E05d *15/22;* **E06b** *7/14*
U.S. Cl. 49—164 **3 Claims**



This invention relates generally to a double-hung window with means for better ventilation control and improved means for interception of wind-driven rainwater for outdoor disposal.

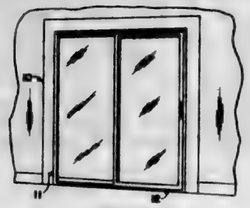
3,442,050
PNEUMATIC WINDOW OPERATING DEVICE
Harry Zoltok, Winnipeg, Manitoba, Canada, assignor to Motor Coach Industries Limited, Winnipeg, Manitoba, Canada
Filed Apr. 12, 1968, Ser. No. 720,841
Int. Cl. E05f *15/08, 15/16*
U.S. Cl. 49—349 **3 Claims**

This invention relates to a single cylinder pneumatically operated device for windows on coaches and the like. Such windows are usually fairly wide and heavy and when operated pneumatically or hydraulically, often jam in the guides. This device consists of a pneumatic cylinder mounted in a spherical bearing adjacent the upper end thereof and being connected by a ball joint to the underside of the window thus providing a complete self-



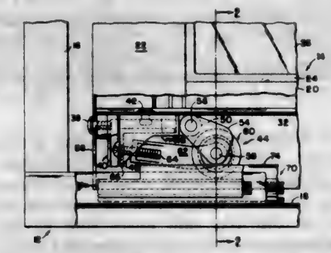
aligning actuator which prevents the jamming of the window within the guides.

3,442,051
CONTROLLED POSITION SLIDING DOOR, WINDOW, PANEL OR THE LIKE
Waldo O. Johnson, Wooster, and James E. Shacklette, Barberton, Ohio, assignors to Weather-Seal, Inc., Barberton, Ohio
Filed Aug. 3, 1967, Ser. No. 658,211
Int. Cl. E05d *15/06, 13/00;* **E06b** *7/10*
U.S. Cl. 49—414 **9 Claims**



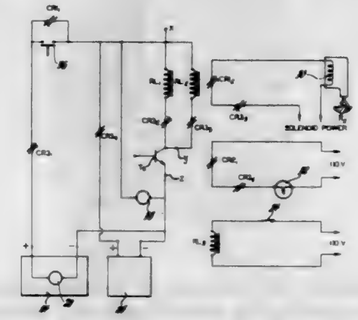
In this invention, a magnetically supported panel, door, etc. has adjustment positioning means associated therewith for maintaining a "floated" closure unit in a central position on its mounting means, and to square or adjust the door to its particular frame positioning means.

3,442,052
SEALING BAR FOR SLIDING GLASS DOOR UNITS
Sidney Levine, Stoneham, Mass., assignor to American Aluminum Window Corp., Malden, Mass., a corporation of Massachusetts
Filed May 2, 1967, Ser. No. 635,602
Int. Cl. E05d *13/02*
U.S. Cl. 49—425 **7 Claims**



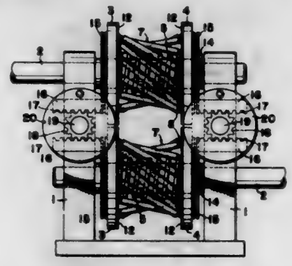
A sealed movable glass door unit includes a frame having a sill with an upwardly projecting rib on which roller wheels bear for supporting movable panel, door or sash. The movable part has a channel-shaped bottom edge in which a sealing bar is slidably received. The wheels are supported in cam links that are adjustably pivoted and engageable with the sealing bar. Adjustment of a link to raise or lower the movable part in relation to the frame correspondingly raises or lowers the sealing bar in relation to the movable part or door to maintain a constant engagement between the sealing bar and the frame.

3,442,053
AUTOMATIC MEANS FOR PRODUCING A MICROELECTRONIC DEVICE
William T. Lemen, Frankfort, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 10, 1965, Ser. No. 507,155
Int. Cl. B24c *3/00;* **H01h** *47/32*
U.S. Cl. 51—8 **6 Claims**



The invention relates to means to automatically measure the value of a microelectronic component such as a resistor and, if its value is too low, to erode away by abrasion a portion of the resistance until its value is within proper limits, and lastly to check the same.

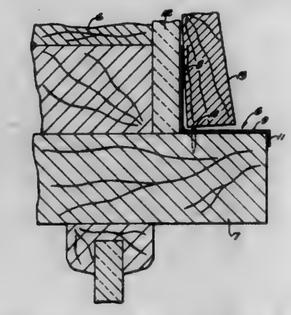
3,442,054
ARCUATE SURFACE GRINDING DEVICE
Kiyoshi Hajikano, 8, 3-chome, Sendagaya, Shibuya-ku, Tokyo, Japan
Filed Oct. 21, 1966, Ser. No. 588,433
Claims priority, application Japan, Oct. 26, 1965, 40/65,283
Int. Cl. B24b *7/00, 9/00, 5/00*
U.S. Cl. 51—80 **5 Claims**



A grinding device in which a pair of parallel driving shafts supports respective pairs of spaced roll supporting wheels carrying a plurality of grinding rolls arranged in cylindrical array around the common axis of each pair of roll supporting wheels, the grinding rolls being inclinably supported at both ends by said roll supporting wheels, and being adjustable in inclination by increasing or de-

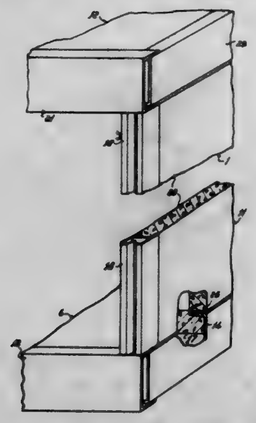
creasing the distance between the roll supporting wheels in each pair, the arrangement being such that the spacing of the wheels of one pair is increased while that of the other pair is decreased, whereby the inclination of the rolls are varied in opposite directions and a workpiece inserted between the rolls will be ground to different curvature on opposite sides thereof by the respective arrays of rolls.

3,442,055
INTEGRAL FLASHING STRIP HAVING RELATIVELY RIGID AND FLEXIBLE SECTIONS
Paul D. Posey, Columbus, Ohio, assignor to Crane Plastics, Inc., Columbus, Ohio, a corporation of Ohio
Filed May 11, 1967, Ser. No. 637,821
Int. Cl. E04d 13/14, 3/38, 1/36
U.S. Cl. 52—62 1 Claim



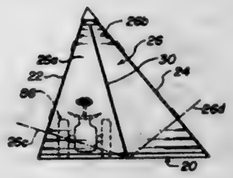
A flashing strip consisting of an integral plastic extrusion providing an inner, flexible web portion and a relatively rigid outer cap section disposed in transversely contiguous and longitudinally coextensive relation.

3,442,056
PREFABRICATED BUILDING SECTION WITH WALL, FLOOR AND CEILING COMPONENTS CAST IN PROFILED EDGE BEAMS
Cornelis van der Lely, 7 Bruschenrain, Zug, Switzerland, and Hendricus Jacobus Cornelis Nieuwenhoven, Baar, Switzerland
Filed Mar. 2, 1966, Ser. No. 531,289
Claims priority, application Netherlands, Mar. 11, 1965, 6503085
Int. Cl. E04h 1/12, 9/06
U.S. Cl. 52—79 8 Claims



A prefabricated building unit wherein the wall, floor and ceiling components have profiled metal beam frames such as U-beam frames and a castable material such as concrete is cast in the frames. The components are welded or otherwise secured together to form a parallelepiped unit. Deformable material may be used to fill open spaces or on the floor component when the components are secured together. Frame beams are U-shaped with a smaller U-shaped beam therein, the legs of each terminating in the same area with continuous or interrupted spaces therebetween adapted to receive and hold the cast material. Inward extensions from the frame beams extend into the cast material.

3,442,057
OFFCENTER A-FRAME BUILDING STRUCTURE
Elmer B. Derr, Stockton, Calif., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Sept. 29, 1967, Ser. No. 671,670
Int. Cl. E04b 7/02, 1/00
U.S. Cl. 52—90 7 Claims



Building structure of triangular shape, one side being more nearly vertical than the other, having doors at the ends, the doors on the more nearly vertical side being wider than the others providing greater opening to accommodate bigger pieces of equipment; doors are hinged on the inclined edges to swing abruptly upwardly from the horizontal ground edge to clear ground obstructions; includes a skeleton framework having separable pieces, and enclosure panels for enclosing the area within the building structure.

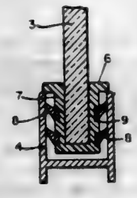
3,442,058
CONCRETE FLOOR CONSTRUCTION WITH DUCT-FORMING VOIDS
Kenneth C. Naslund, Chicago, and Leonard A. Bihler, Wheaton, Ill., assignors to The Engineers Collaborative, Ltd., Chicago, Ill., a corporation of Illinois
Continuation-in-part of application Ser. No. 514,948, Dec. 20, 1965. This application May 31, 1968, Ser. No. 740,808
Int. Cl. E04b 5/48, 5/16; E04c 2/04
U.S. Cl. 52—221 32 Claims



A concrete floor construction comprising a reinforced concrete lower slab having hollow preformed cells embedded between a monolithic structure of crisscrossing concrete ribs, said cells being made of concrete, gypsum, vitrified clay or the like, said lower slab having ducts extending between said cells and embedded in said ribs for handling the flow of air, a plurality of preformed blocks or the like covering the upper side of said lower slab, each of said blocks having an upper horizontal rim

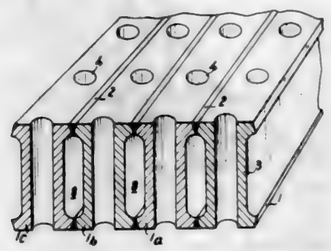
portion with at least one inverted generally frusto-conical member projecting downwardly therefrom and having a flat horizontal bottom surface engaging the lower slab, each member being hollow and having a central opening therein extending downwardly to the lower slab, said blocks being made of concrete, gypsum, vitrified clay or the like, and an elevated concrete slab extending over and covering said preformed blocks, said elevated slab extending downwardly through said openings in said frusto-conical members and forming bonds with the lower slab, said preformed blocks forming air passages between and around said frusto-conical members.

3,442,059
PLASTIC EDGE CHANNEL FOR GLASS WINDOWS
Gerald Kessler, 388 Cranberry Road, Youngstown, Ohio 44512
Filed Jan. 31, 1967, Ser. No. 612,901
Int. Cl. E04b 1/62; E04f 15/14, 15/22
U.S. Cl. 52—399 3 Claims



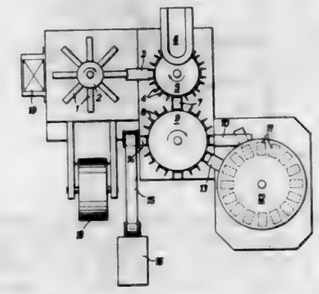
A glass window having metal or rigid plastic frames, the frames having a U-channel into which the glass is forced, there bing a semi-rigid plastic spacer in the form of an intermediate plastic channel member between the glass and the frame channel, said intermediate channel member serving to securely hold the glass in the frame member. Soft plastic inserts in the plastic channel member are provided which are interlocked firmly into the harder plastic in such fashion as to permit easy insertion but to resist withdrawal.

3,442,060
PERFORATED PLATE AND TANK FITTED THEREWITH
Claude Guillot, L'Horme, Loire, and Alphonse Peuchmaur, Boulogne-sur-Seine, France, assignors to Commissariat à l'Energie Atomique, Paris, France
Filed June 22, 1965, Ser. No. 465,924
Claims priority, application France, June 24, 1964, 979,425
Int. Cl. E04c 5/04, 2/42
U.S. Cl. 52—673 5 Claims



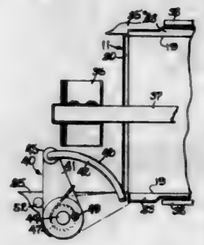
The plates, adapted particularly for forming the end shields of nuclear reactor vessels, are formed by welding the abutting flanges of a plurality of elongated I-beams together. The webs of the I-beams are relatively thick and are provided with a plurality of uniformly spaced bores which open onto the outer surface of the I-beam flanges. A shell or casing may enclose the plates and the opposite ends of pressure tubes may be mounted in the bores of a pair of opposed plates and a cooling fluid may be circulated through the passages formed between the webs of adjacent beams.

3,442,061
METHOD OF PRODUCING FILLED AND SEALED PACKAGES
Alfred Grafinghoff, Stuttgart-Bad Cannstatt, Germany, assignor to Fa. Fr. Hesser Maschinenfabrik-Aktiengesellschaft, Stuttgart-Bad Cannstatt, Germany
Continuation-in-part of application Ser. No. 112,548, May 25, 1961. This application Sept. 10, 1965, Ser. No. 490,770
Claims priority, application Germany, May 30, 1960
Int. Cl. B65b 5/02, 41/18, 31/02
U.S. Cl. 53—22 6 Claims



A method of producing filled and sealed containers by forming on a mandrel an inner bag of flexible material and an outer rigid carton and conveying the bag and its supporting carton through filling, evacuating and sealing stages.

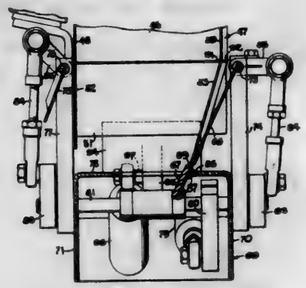
3,442,062
MECHANISM FOR POSITIONING CARTON FLAPS
Robert F. Lense, Rockford, Ill., assignor to Riegel Paper Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 3, 1967, Ser. No. 627,705
Int. Cl. B65b 7/20
U.S. Cl. 53—374 9 Claims



A carton closing machine in which a rearwardly extending trailing flap of an advancing carton is swung upwardly and forwardly by a flap positioning mechanism before the flap is folded across the end of the carton by a

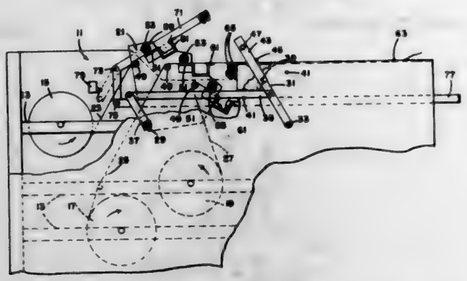
folding shoe. The positioning mechanism includes an arm which is swung out of and returned to the carton path as a result of being engaged by the moving carton, and a finger carried by the arm for swinging the flap into an upright position during the return of the arm.

3,442,063
MACHINE FOR CLOSING CARTONS
Paul A. Martin, Atlanta, Ga., assignor to Riegel Paper Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 3, 1967, Ser. No. 628,126
Int. Cl. B65b 7/20
U.S. Cl. 53—374 9 Claims



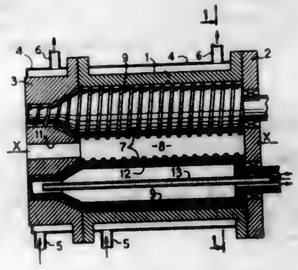
A machine for closing cartons of the type having a closure flap which is tilted relative to the open end of the carton due to the tendency of a side panel joined to the tilted flap to buckle inwardly toward an opposing side panel. A swingable closing arm folds the tilted flap across the end of the carton and carries a hook which engages the flap while the latter is being folded to straighten the buckled panel and to aline the flap with the end of the carton.

3,442,064
ARTICLE WRAPPING APPARATUS
John D. Conti, Elkins Park, Pa., assignor to FMC Corporation, Philadelphia, Pa., a corporation of Delaware
Filed June 10, 1966, Ser. No. 556,608
Int. Cl. B65b 67/08, 11/02
U.S. Cl. 53—390 5 Claims



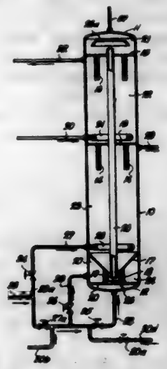
Article wrapping apparatus in which the leading ends of individual rolls of wrapping material are retained in positions for easy access by an operator, and in which a desired length of wrapping material may be severed from a supply roll by a knife while the wrapping material itself is nipped against movement.

3,442,065
APPARATUS FOR ELIMINATING VOLATILE CONSTITUENTS IN VARIOUS COMPOSITIONS
Bernard Foras, Lyon, France, assignor to Plastugil, Lyon, France, a French body corporate
Filed May 1, 1967, Ser. No. 634,932
Claims priority, application France, May 6, 1966, 60,511
Int. Cl. B01d 19/00
U.S. Cl. 55—191 5 Claims



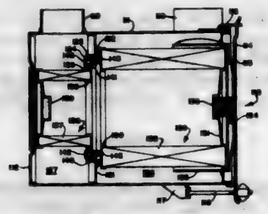
An apparatus for eliminating very high contents of volatile constituents from a composition without risk of pollution of the composition, said apparatus comprising an elongated enclosure which is provided with a devolatilization chamber and in which are rotatably mounted cylinders having parallel axes, each of said cylinders being tangent to two other cylinders, an operational clearance being provided, said cylinders completely surrounding the devolatilization chamber, the longitudinal walls of the chamber being constituted by that part of the lateral surface of each cylinder which is located between the two generatrices on which the cylinder is tangent to two other cylinders and faces the axis of the enclosure.

3,442,066
MOVING BED ADSORPTION APPARATUS
Carl D. Spangler, Jr., Ponca City, Okla., and Walter J. Price, Houston, Tex., assignors to The C. W. Nofsinger Company, a corporation of Missouri
Continuation of application Ser. No. 489,802, Sept. 14, 1965, which is a continuation of application Ser. No. 228,580, Oct. 5, 1962. This application Aug. 12, 1966, Ser. No. 572,152
Int. Cl. B01d 53/08
U.S. Cl. 55—390 1 Claim



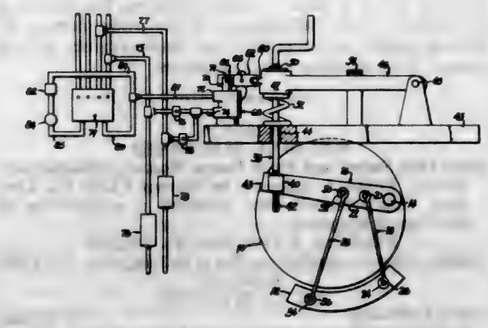
An operable continuous moving bed apparatus for selectively extracting gaseous fluids employing adsorption and regeneration zones in a single vessel and gas lift for recycling the adsorbent requires: (a) maintenance of a pressure balance in the system to assure control of the relative rates of flow of the adsorbent in the gas lift, regeneration and adsorption sections, which pressure balance is obtained by the amounts of lift gas introduced to said gas lift, and adsorption section, and (b) the passage of a small amount of gas upwardly from the adsorption section into the regeneration section which prevents back flow of gas in the opposite direction, arching of the adsorbent and a uniform gravitational flow of the adsorbent in both sections.

3,442,067
AIR CLEANER
Victor Eugene Swenson, Cedar Falls, Iowa, assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Feb. 26, 1968, Ser. No. 708,266
Int. Cl. B01d 46/24, 27/00
U.S. Cl. 55—482 4 Claims



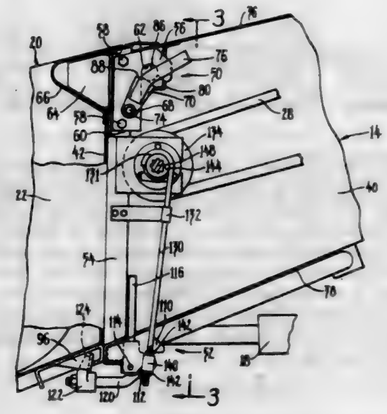
An air cleaner having a primary filter element and a safety filter element mounted end to end within the cleaner casing. The cleaner casing is divided into two chambers by a bulkhead positioned within the cleaner casing between the two filter elements. The bulkhead is provided with a central opening to provide for the flow of air from one chamber to the other. Each filter element is provided with its own individual seal which bears against the bulkhead so that air passing through the cleaner casing must pass through two filter elements or two seals. In the event of the rupture of the primary filter element or its seal, air passing through the cleaner casing will still be required to pass through the safety filter element.

3,442,068
AUTO-GROUND SPEED CONTROL FOR SELF-PROPELLED COMBINE
Shelley A. Bulin, Davenport, Iowa, assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed Aug. 15, 1966, Ser. No. 572,553
Int. Cl. A01d 41/02, 69/00
U.S. Cl. 56—20 11 Claims



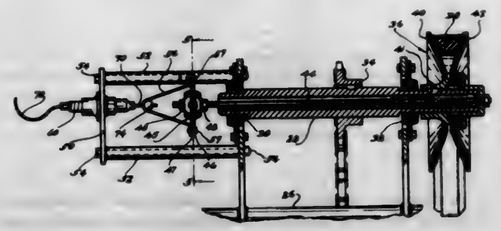
A harvesting machine which has spaced threshing elements biased to a first position to define an optimum rate of feed between said elements. The machine further includes motor means variable to vary the rate of crop feed to the elements with means for varying the supply of pressure fluid to the motor means in response to movement of the elements from the first position.

3,442,069
SAFETY INTERLOCK MECHANISM FOR COMBINE HARVESTER
James G. Butler and Robert Ashton, Islington, Ontario, Canada, assignors to Massey-Ferguson Industries Limited, Toronto, Ontario, Canada
Continuation of application Ser. No. 517,327, Dec. 29, 1965. This application July 5, 1968, Ser. No. 746,696
Int. Cl. A01d 41/04, 41/02
U.S. Cl. 56—20 9 Claims



A safety interlock for combine harvester headers includes a locking member joining a header and an elevator. The locking member is controlled and blocked by a safety interlock which includes a bar with a curved upper end lockingly engaged with the mating shaft ends of the power take-off driveshaft. Only upon release of this bar and the disconnection of the ends of the drive shafts can the header be separated from the elevator of the combine.

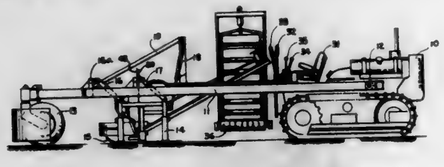
3,442,070
REEL CONTROL MECHANISM
Stephen L. Batog, Moline, Ill., assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed Jan. 3, 1966, Ser. No. 518,350
Int. Cl. A01d 41/04, 41/12
U.S. Cl. 56—21 3 Claims



A harvester having a frame and an operator's station and a header pivotally attached to the harvester and including a rotatable reel. Variable speed drive means are

connected between the drive of the harvester and the header reel for varying the rotational speed of the reel. A drive control means extends from the operator's station to the variable speed drive means for controlling the adjustment of the drive means and thereby controlling the speed of rotation of the reel.

3,442,071
AUTOMATIC CELERY HARVESTING MACHINE
John L. Duda, Jr., Rte. 1, Box 91A, Oviedo, Fla. 32765
Filed Oct. 23, 1965, Ser. No. 503,222
Int. Cl. A01d *45/00, 57/04, 75/22*
U.S. Cl. 56—327 12 Claims



A harvesting machine adapted to harvest a crop such as celery and having a framework thereon that is vertically movable with respect to the remainder of the harvester, which framework can move to conform to ground contours. Cutoff blade means are provided on this vertically movable framework so that the blades will thus be maintained in a substantially constant relationship to the surface of the earth. Adjustment means are provided enabling the operator to individually adjust the blades heightwise on a moment-by-moment basis.

3,442,072
DEVICE FOR LOADING AND UNLOADING SPINDLES
Matteo Gillono, 7 Via San Lorenzo, Ivrea, Turin, Italy, and Pietro Alberto, 16 Via Lamarmora, Biella, Vercelli, Italy
Filed Aug. 31, 1964, Ser. No. 393,055
Claims priority, application Italy, Sept. 4, 1963, 18,126/63; Aug. 18, 1964, 17,948/64
Int. Cl. D01h *9/10*
U.S. Cl. 57—53 25 Claims



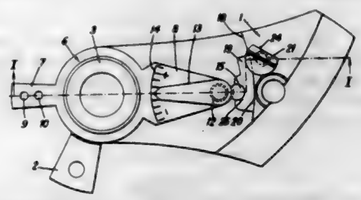
A device is provided for the loading and unloading of bobbins onto the spindles of spinning and doubling machines. The device is provided with pincers which are mounted to engage the bobbins and to move the bobbins in a horizontal plane as well as in a vertical plane. The pincers are mounted on a carriage which slides along a row of spindles.

3,442,073
STRETCHABLE KNITTED FABRICS
Toyokazu Matsumoto, Osaka-shi, and Masao Matsui, Osaka-fu, Japan, assignors to Kanegafuchi Boseki Kabushiki Kaisha, Tokyo, Japan
Original application July 26, 1965, Ser. No. 474,773, now Patent No. 3,365,873, dated Jan. 30, 1968. Divided and this application May 3, 1967, Ser. No. 649,390
Claims priority, application Japan, Sept. 26, 1964, 39/55,372
Int. Cl. D02g *3/04*
U.S. Cl. 57—140 8 Claims



A filament adapted to be knit into a fabric comprising two adherent components of synthetic thermoplastic polymers having different shrinkabilities joined along a conjugate phase and being twisted along its length to provide at least 20° of twist in said conjugate phase per unit stitch length.

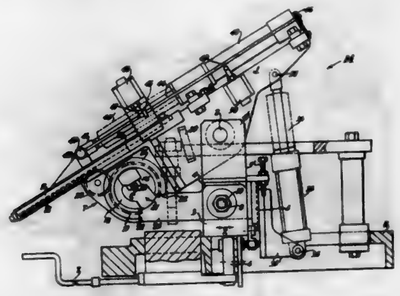
3,442,074
WATCH REGULATOR HAVING FINE ADJUSTMENT MEANS
Emil Ringger, Grenchen, Switzerland, assignor to A. Schild S.A., Grenchen, Solothurn, Switzerland, organized under the laws of Switzerland
Filed Nov. 13, 1967, Ser. No. 682,077
Claims priority, application Switzerland, Nov. 18, 1966, 16,578/66
Int. Cl. G04b *17/14*
U.S. Cl. 58—109 11 Claims



A watch regulator having an adjustment means therefor permitting coarse adjustments to be made without the necessity to disengage the adjustment means from the regulator whereby fine adjustments may immediately be made thereafter. The adjustment means comprises a control lever pivoted in the regulator and also in a slide member which is slidably adjustable along the surface of the balance cock, displacement of said slide member effecting coarse adjustments while displacements of said control lever effecting fine adjustments.

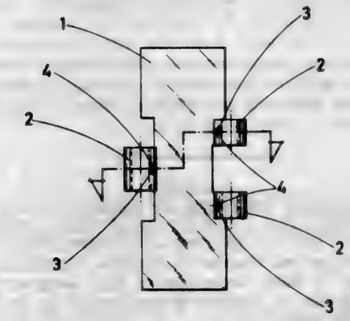
3,442,075
WELDING MACHINES
Hans Otto Smerd and Peter Joseph Bonner, Stourport-on-Severn, England, assignors to Parsons Chain Co. Limited, Stourport-on-Severn, England, a corporation of the United Kingdom
Filed Feb. 5, 1964, Ser. No. 342,685
Claims priority, application Great Britain, Dec. 13, 1963, 49,443/63
Int. Cl. B21l *15/00*
U.S. Cl. 59—29 15 Claims

1. A machine for removing weld flash from a welded member comprising means for supporting a welded member of the type having weld flash disposed at least partially about the exterior thereof, cutting means for removing the flash from the welded member, said cutting means including at least a single leading cutting edge and a single trailing cutting edge, first means for initially moving said cutting means toward the axis of the welded member whereby the leading cutting edge removes a portion of the flash from the welded member, second means for imparting only pure rotational movement to said cutting means about the axis of the welded



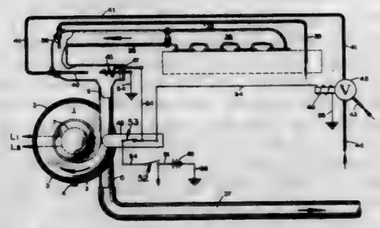
member whereby the trailing cutting edge removes another portion of the weld flash from the welded member, stop means for arresting the initial movement of the cutting means at a position in which the axis of rotation of the cutting means and the axis of the welded member are in coincidence, means for guiding said cutting means during the rotational movement thereof, and said guiding means is defined in part by said stop means.

3,442,076
LINK FOR CREEPER CHAINS
Victor Millan Marzo, Chirivella, Valencia, Spain, assignor to Industrias Yuk, S.L., Chirivella, Spain, a corporation of Spain
Filed May 23, 1967, Ser. No. 640,678
Claims priority, application Spain, June 14, 1966, 122,609
Int. Cl. F16g *13/06*
U.S. Cl. 59—90 3 Claims



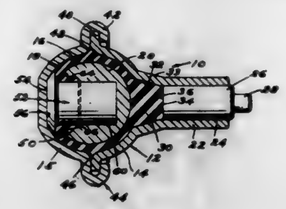
A one-piece link for use in an articulated creeper chain in which each link includes on a flat plate or bar integral connecting or hinge sleeves the opposite edges thereof for connecting adjacent links to form the complete chain, and in which the sleeves comprise reverse-bend portions of a bar having a terminal portion extending through an aperture in the bar and being upset or riveted in said aperture whereby maintenance to the chain and links is reduced to a minimum.

3,442,077
AFTERBURNER TURBINE FOR INTERNAL COMBUSTION ENGINES
Joseph Youhouse, 4885 SW. 118th Ave., Miami, Fla. 33165
Filed May 11, 1967, Ser. No. 637,666
Int. Cl. F01n *1/14, 1/18, 3/14*
U.S. Cl. 60—13 8 Claims



A combination afterburner and turbine attachment for the exhaust system of an internal combustion engine for converting noxious gases into harmless gases, furnishing auxiliary electric power and muffling the acoustical output of the exhaust system.

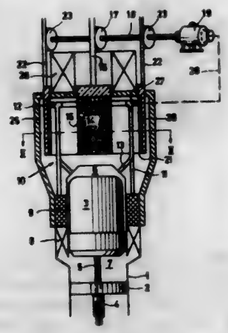
3,442,078
THERMO-ACTUATOR
Richard D. Nolan, Birmingham, Mich., assignor to Advance Stamping Company, Detroit, Mich., a corporation of Michigan
Continuation-in-part of application Ser. No. 194,464, May 14, 1962. This application Dec. 10, 1962, Ser. No. 243,344
Int. Cl. F03g *7/06;* G01k *5/32*
U.S. Cl. 60—23 21 Claims



15. A temperature responsive actuator comprising an elongated hollow housing which is symmetrical about the longitudinal axis thereof, said housing including a cap having an outer surface which is part spherical on one end thereof and part cylindrical on the other end portion thereof and a cup-shaped body member which is part spherical, the spherical parts of said cap and said body member being provided with engageable laterally extending flanges and being joined together at the mating surfaces of said flanges, said housing defining a pair of axially aligned and connected chamber portions, one chamber portion being substantially spherical and including an endless transversely extending relatively shallow substantially V-shaped groove extending around the interior thereof along the line of joinder of said flanges, the other chamber portion terminating in a cylinder having a plunger extensibly movable therealong and having a throat forming an inner continuation of said cylinder and diverging from said cylinder to intersect said spherical chamber portion, a resilient capsule disposed in said housing and

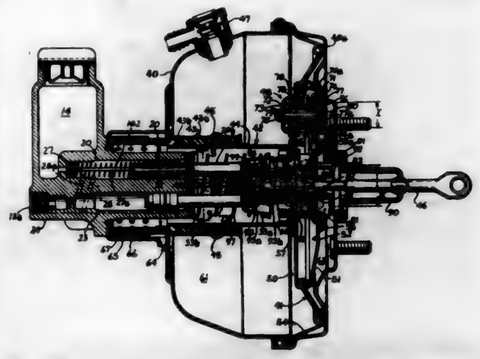
containing a heat expansible material therein, said capsule having a principal axis which is coincidental with the axis of said housing, said capsule being substantially spherical and in surface to surface contact with said spherical chamber portion, said capsule being provided on the exterior side thereof with a resilient cushion having a face which abuts the inner end of said plunger, said cushion being substantially located in and conforming to the shape of said throat, an opening in the bottom of said capsule which is surrounded by a radially inwardly extending tubular lip seal coaxial with said housing, an elongated element extending into said capsule through said opening and through said lip seal in continuous annular sealing contact with said lip seal for sealing the heat expansible material in said capsule, said element having its principal axis coincidental with the axis of said housing and having the inner end portion thereof disposed in contact with said heat expansible material and the outer end portion thereof disposed in contact with said housing, said capsule and said element being disposed in said housing without any fixed connection therebetween, with the inner surface of said capsule being subjected upon expansion of said heat expansible material to a pressure which is applied equally in all directions, the arrangement of said capsule in said housing with the principal axis of the capsule coincidental with the axis of said housing and with the axes of said element and lip seal also coincidental with the axis of said housing providing dynamic balance so as to prevent turning of said capsule in said housing.

3,442,079
THERMODYNAMIC ENGINE
Roelf Jan Meijer and Roland Anton Johan Otto van Witteveen, Emmasingel, Eindhoven, Netherlands, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 20, 1967, Ser. No. 610,563
Claims priority, application Netherlands, Feb. 9, 1966, 6601609
Int. Cl. F01k *27/00*
U.S. Cl. 60—24 **18 Claims**



A thermodynamic engine comprising cylinder and piston means and a gaseous working medium which flows through the intermediary of a regenerator between an expansion space and a compression space defined by the cylinder and piston means. Heat energy is supplied to the heater of the engine by means of an isotope reactor and adjustment means actuated in response to the temperature of the heater are provided for controlling the temperature of the working medium. In one embodiment the thermal coupling between the isotope mass and the heat transfer medium is controlled and in a second embodiment the amount of the gaseous working medium in the engine is controlled.

3,442,080
DUAL HYDRAULIC BRAKE SYSTEMS AND BRAKE BOOSTER MECHANISMS THEREFOR
Edward A. Rockwell, 167 Ashdale Place, Los Angeles, Calif. 90049
Filed Apr. 5, 1966, Ser. No. 540,308
Int. Cl. B60t *11/10*
U.S. Cl. 60—54.5 **13 Claims**

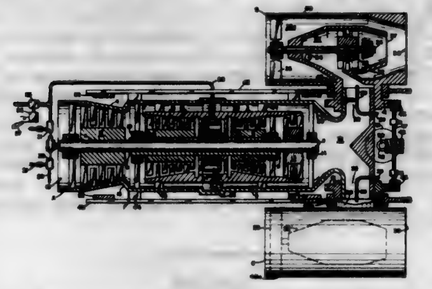


A dual hydraulic brake system having two pairs of master cylinders with the two cylinders of each pair symmetrically disposed on opposite sides of a longitudinal axis, and a pair of independent fluid reservoirs operatively connected to the two pairs of master cylinders through independent hydraulic lines so that the two pairs of master cylinders are hydraulically isolated from each other. The two cylinders of each pair are hydraulically interconnected, and the outputs of the two pairs of cylinders are connected to dual fluid pressure transmitting lines to actuate the brakes. Upon a drop in pressure in one of the pairs of master cylinders due to a drop pressure in one side of the dual system, hydraulic and mechanical balance is maintained in the other pair. The system also includes a movable pedal for actuating the master cylinders, a power booster unit, and a reaction mechanism for providing a mechanical reaction for supposing increments of movement of the brake actuating means. The valve for the power unit is mounted on the power wall and offset from the actuating means, and is operated by a lever having a pivot element located on the power wall on the opposite actuating means from the valve so that axial movement of the actuating means tilts the lever to operate the valve.

3,442,081
HYPERGOLIC METHOD OF OPERATING A BIPROPELLANT LIQUID REACTION MOTOR USING DIFLUOROAMINO COMPOUNDS
Orval E. Ayers and Chester W. Huskins, Huntsville, Ala., and Bert T. Fant, Baton Rouge, La., assignors to the United States of America as represented by the Secretary of the Army
No Drawing. Filed Feb. 27, 1963, Ser. No. 261,545
Int. Cl. F23 *1/02*; C06c *5/08*
U.S. Cl. 60—212 **18 Claims**

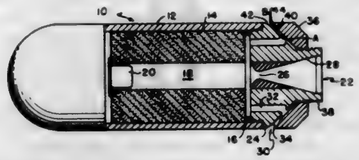
1. A method of operating a bipropellant liquid reaction motor which comprises bringing together in a combustion zone of said motor a difluoroamino substituted compound selected from the group consisting of 1,2,3-tris(difluoroamino) propane and 2,3-bis(difluoroamino) propyl formate and a basic amine selected from the group consisting of 3,3'-diaminodipropylamine, triethylenetetramine, and ethylenediamine hypergolic with said difluoroamino substituted compounds upon contact.

3,442,082
TURBINE GAS GENERATOR AND WORK PROPULSION SYSTEM FOR AIRCRAFT AND OTHER VEHICLES
Adolphe C. Peterson, 4623 Bruce Ave. S., Minneapolis, Minn. 55424
Filed Dec. 19, 1966, Ser. No. 602,625
Int. Cl. F02k *1/02, 3/04*; F02c *7/02*
U.S. Cl. 60—224 **5 Claims**



This invention disclosed relates especially to the class of engine and propulsion means involving turbine gas generation means and utilization of pressurized gases in propulsion of supplementary work means which includes especially supplemental air stream propulsion and involved in gas generation means and also devices for change of direction of jet propulsion for aircraft jet propulsion.

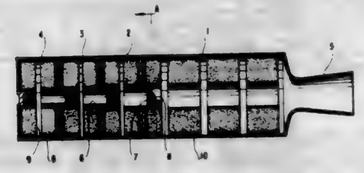
3,442,083
ADJUSTABLE VARIABLE THRUST PROPULSION DEVICE
Ralph E. De Klotz, Richmond, Ind., assignor to Avco Corporation, Richmond, Ind., a corporation of Delaware
Filed July 21, 1967, Ser. No. 655,048
Int. Cl. F02k *9/04, 1/20*; B64c *15/04*
U.S. Cl. 60—229 **8 Claims**



The disclosure illustrates a solid propellant rocket which has bleed ports formed in the rocket casing for discharging a portion of the propulsive gas stream generated by the rocket in a direction to oppose the thrust produced by discharge of the propulsive gas stream through a primary nozzle of the rocket to reduce the rocket's thrust level. A sleeve is threaded onto the rocket casing to vary the flow or throat area of the bleed ports and hence vary the resultant thrust of the rocket.

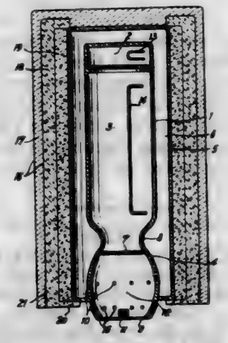
3,442,084
MULTISTAGE SOLID FUEL ROCKET PROPULSION UNIT FOR THE PLACING OF DEPTH CHARGES
Heinz Dilchert, Steyerberg, Rudolf Cramm, Nienburg an der Weser, and Joachim Fibranz, Liebenau, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany
Filed Sept. 21, 1967, Ser. No. 669,496
Int. Cl. F02k *9/04*
U.S. Cl. 60—250 **11 Claims**

A multistage rocket having a plurality of separate serially arranged combustion chambers, each containing a solid fuel propellent charge and an independent ignitor, with all of the combustion chambers arranged to exhaust the propulsion gases out of a common exhaust nozzle device. Check valves are arranged between adjacent combustion chambers to prevent the forward propagation of an igniting flame and forward passage of combustion gases, while allowing the same to move in the rearward



direction. The range of the rocket may be controlled in steps, for a given firing angle, by igniting the fuel within the desired combustion chamber, which will in turn only ignite the fuel in all of the combustion chambers rearwardly thereof but not forwardly.

3,442,085
IMPULSOR WITH POWDER CHARGE, PARTICULARLY FOR PERCUSSION VIBRATIONS TESTS
Robert Victor Bancelin, 45 Rue Prou, 78 Clayes-sous-Bois, France
Filed June 30, 1967, Ser. No. 650,445
Claims priority, application France, July 8, 1966, 68,741
Int. Cl. F02k *9/04*; F01m *9/00*
U.S. Cl. 60—253 **4 Claims**



The present invention is concerned with an impulsor or small powder reactor adapted more particularly for fixing to a structure in which percussion vibrations are to be generated in order to study vibrations generated in this structure, and applicable more particularly for the study of vibrations of different parts of an aircraft during flight. According to the invention the impulsor comprises a thermally insulating coating formed by several concentric layers of substances melting at high testing temperatures and having melting points graduated so as to delay during successive melting periods the transmission of heat to the body of the impulsor.

3,442,086
JET TYPE AIR MOTOR
Hilbert W. Nieman, 941 W. Minnehaha Ave., St. Paul, Minn. 55104
Continuation-in-part of application Ser. No. 539,866, Apr. 4, 1966. This application Oct. 19, 1967, Ser. No. 676,445
Int. Cl. F02k *1/02*; F04b *5/22*
U.S. Cl. 60—269 **8 Claims**

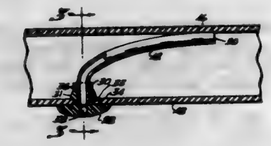
A jet type motor driven by air under pressure expelled from a nozzle wherein further air is entrained from the

surrounding atmosphere by a sleeve surrounding the nozzle. The sleeve has a relatively rapidly tapering first



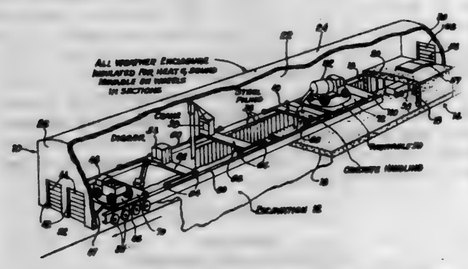
portion connected to a second portion that does not taper as the first portion does with the nozzle disposed in the second portion. Successive similar stages may be used.

3,442,087
SUB-SURFACE IRRIGATION SYSTEM
Sergio Riusech, 1122 NW. 3rd St., Miami, Fla. 33128
Filed Aug. 10, 1967, Ser. No. 659,633
Int. Cl. E02b *13/00*
U.S. Cl. 61—13 **4 Claims**



An improved sub-surface irrigation system which includes a plurality of spaced pipes for distributing water and spaced valves in the pipes, said valves including an exterior foot on the lower surface of the pipe with an upstanding leg to be received within the pipe and including passageways for laterally distributing fluid flow through the pipe which is picked up by a flexible tube within the pipe.

3,442,088
METHOD AND MACHINE FOR BUILDING TUNNELS
Bernard Borisof, 3530 N. Lake Shore Drive, Chicago, Ill. 60657
Filed Feb. 28, 1966, Ser. No. 537,603
Int. Cl. E21d *9/00;* **E01g** *3/06;* **E02f** *1/00*
U.S. Cl. 61—44 **15 Claims**



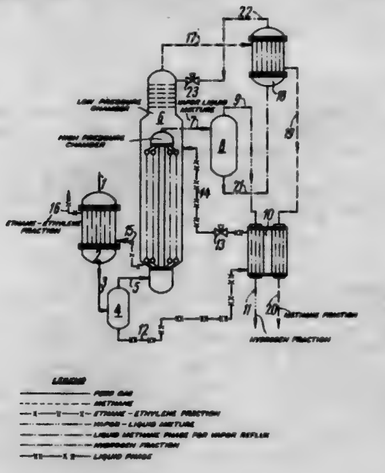
The disclosed method of building a tunnel contemplates providing a shelter or enclosure, placing the shelter over the right of way of the tunnel, excavating an open trench under the shelter, constructing a portion of the tunnel structure under the rear portion of the shelter, moving the shelter to a series of new locations along the right of way, excavating additional portions of the trench under the front portion of the shelter at the successive locations, and constructing additional portions of the tunnel structure under the rear portion of the shelter at the successive locations, whereby the tunnel building operations are substantially enclosed by the shelter. The disclosed machine comprises a portable shelter or enclosure having a rigid framework, wheels mounted on the shelter and supporting the shelter for movement along the tunnel right of way, a pair of spaced rails or tracks mounted on the inside of the shelter, a plurality of carriages having rollers or wheels supported on the rails so that the carriages are movable within the shelter, an excavator mounted on one of the carriages, and various material handling devices mounted on the other carriages. Such material handling devices include a crane, a cart for handling wet concrete to be placed in the trench, and turn tables for supporting trucks or the like so that they can be maneuvered quickly into position for loading and unloading, while obviating any need to back the trucks.

3,442,089
METHOD FOR CASTING CONCRETE FOUNDATION
Alva A. Sollay, P.O. Box 5731, Drew Station, Lake Charles, La. 70601
Filed Jan. 25, 1967, Ser. No. 611,681
Int. Cl. E02d *5/34;* **E04b** *1/16*
U.S. Cl. 61—53.64 **9 Claims**



The present invention relates to a concrete foundation for buildings, bridges and other structures, which comprises a cast in situ, at least mostly subterranean, annular concrete pillar having a removable central core of sand or similarly substantially non-cohesive material supported upon an axially short cast-in-situ concrete plug. The invention also relates to a method for forming the foundation which comprises digging, drilling or otherwise forming a shaft in the earth, placing a smaller O.D. tubular casing in the shaft, filling the shaft/casing annulus with concrete, pouring an axially short plug of concrete into the casing throughbore; depositing sand or a similarly non-cohesive, non-cementitious coring, filler material into the casing throughbore above the plug to substantially fill the throughbore; longitudinally removing the casing; allowing the concrete to harden and preferably removing the coring. This abstract, because of its brief and introductory nature, should not be construed as being all inclusive or as in any way limiting the scope of the claims appended to this specification or the range of applicability of the principles described herein. This abstract is chiefly intended as an aid to persons scanning this document for the first time in quickly ascertaining whether the disclosure on this document may warrant their further study.

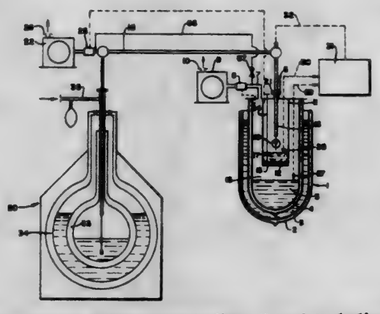
3,442,090
DEMETHANIZATION OF SEPARATED LIQUID THROUGH HEAT EXCHANGE WITH SEPARATED VAPOR
Nikolai Konstantinovich Baibakov, Plotnikov per. 16, kv. 16; Diomid Vasilievich Ivanjukov, Karmanitsky per. 10, kv. 4; Boris Georgievich Bergo, Ukrainsky bulvar 6, kv. 132; Viktor Semenovich Gersh, ul. Vavilova 34/4, kv. 310; Viktor Ivanovich Ivanov, pos. Krasny Stroitel, ul. Gazoprovoda 11, kv. 11; Ilya Rafailovich Cherny, Zubovsky bulvar 31/33, kv. 16; Roman Iosifovich Epstein, Varshavskoe shosse 135-a, korp. 3, kv. 129; Kirill Zyskovich Bochaver, Leningradskoe shosse 124, kv. 114; and Olga Anatolievna Alentieva, Durasovsky per. 3, kv. 17, all of Moscow, U.S.S.R.
Filed Mar. 1, 1967, Ser. No. 619,626
Int. Cl. F25j *3/02*
U.S. Cl. 62—23 **8 Claims**



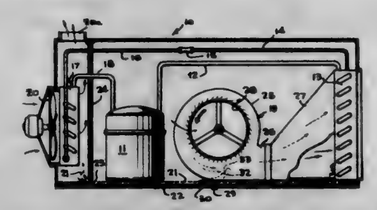
A gaseous hydrocarbon mixture is partially condensed and separated. The separated methane rich vapor phase is passed to the high pressure zone in a demethanizer where further condensation occurs. Separated liquid condensed from the hydrocarbon mixture is expanded into a low pressure zone of the demethanizer where it passes in indirect countercurrent heat exchange with the methane rich vapor in the high pressure zone causing the methane in the expanded liquid to vaporize thus demethanizing the expanded liquid in the low pressure zone through direct countercurrent heat exchange while condensing a methane rich liquid from hydrogen vapor in the high pressure zone of the demethanizer. The demethanized liquid comprised primarily of ethane and ethylene leaving the low pressure zone is vaporized through heat exchange with incoming gaseous hydrocarbon mixture. Partially condensed methane rich vapor after exiting from the high pressure zone is separated into hydrogen rich vapor and methane rich liquid fractions.

3,442,091
DELIVERY OF COOLANT TO CRYOSTATS
Gustav Klipping, Berlin, Albrecht Elsner, Kronach, Upper Franconia, and Gerd Hildebrandt, Berlin, Germany, assignors to Max-Planck-Gesellschaft zur Forderung der Wissenschaften e.v., Gottingen, Germany
Filed Nov. 1, 1967, Ser. No. 679,789
Claims priority, application Germany, Dec. 24, 1966, M 72,183
Int. Cl. F17c *7/02;* **F25b** *19/00*
U.S. Cl. 62—55 **19 Claims**

Method and apparatus for permitting the continuous replenishment of the helium II working bath of a cryostat while maintaining a stable temperature, particularly in the range below the helium λ-point, by delivering liquid helium to a replenishing bath maintained at a low pressure and held in a container at least one portion of which is constituted by a filter which is at least partially impermeable to gaseous helium and helium I and to helium II at a temperature above that of the working bath, but which passes helium II having a temperature equal to or less than that of the working bath, the filter separating the replenishing bath from the working bath.



3,442,092
BLOWER AND ASPIRATOR TUBE ASSEMBLY
John N. Pratt, Harrisonburg, Va., assignor to Space Conditioning, Inc., Harrisonburg, Va., a corporation of Maryland
Filed Dec. 4, 1967, Ser. No. 687,728
Int. Cl. F25b *47/00*
U.S. Cl. 62—279 **6 Claims**



A centrifugal blower of the scroll type producing an air stream, and having an aspirator tube in a wall thereof with one end communicating with a source of fluid and the other end located in the air stream to aspirate a portion of the fluid into the air stream. The blower and aspirator tube assembly may be employed in an air conditioner to aspirate liquid condensate collected from the evaporator into a condensing air stream produced by the blower for re-evaporation of the condensate by thermal exchange with the condenser.

3,442,093
APPARATUS AND EJECTOR FOR PRODUCING COLD
Johan Andriaan Rietdijk, Emmasingel, Eindhoven, Netherlands, assignor, by mesne assignments, to U.S. Philips Corporation, a corporation of Delaware
Filed June 26, 1967, Ser. No. 648,874
Claims priority, application Netherlands, July 1, 1966, 6609177
Int. Cl. F25b *23/00*
U.S. Cl. 62—500 **6 Claims**

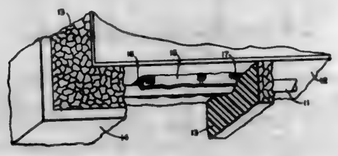
This invention relates to apparatus for producing cold wherein fluid medium from a high pressure source is: first cooled to its inversion temperature associated with that pressure, and then expanded in an ejector and discharged to a first reservoir with vapor therefrom returning to said source; subsequently medium from the res-

ervoir is further expanded in a throttling device, and discharged to a second reservoir with vapor therefrom being pumped in the suction inlet of the ejector. The ejector has jet tube and diffuser portions through



which the medium flows, and the area of the jet tube contacted by the medium or the whole jet tube is made of heat insulating material for preventing the conduction of heat through the walls of the jet tube toward the end thereof.

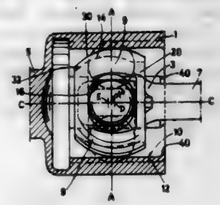
3,442,094
THERMAL MASTIC
William A. Rush, Columbus, and Harold L. Frankenstein, Grove City, Ohio, assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 13, 1967, Ser. No. 690,276
Int. Cl. F28f 7/00; F25d 23/00
U.S. Cl. 62—516 **5 Claims**



A thermal mastic is used to provide good heat transfer between refrigerator tubing and refrigerator walls in refrigeration systems which does not degrade polyurethane insulating foam and is comprised of chlorinated paraffin, filler and wetting agent.

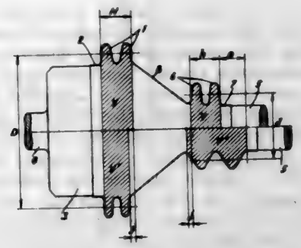
3,442,095
UNIVERSAL JOINT
Gaston Devos, Paris, France, assignor to Lohr & Bromkamp G.m.b.H., Offenbach am Main, Germany
Filed Oct. 4, 1965, Ser. No. 492,391
Claims priority, application France, Oct. 8, 1964, 990,716; Mar. 16, 1965, 9,339
Int. Cl. F16d 3/30
U.S. Cl. 64—21 **2 Claims**

1. A constant velocity joint comprising an inner and an outer member each having an axis, longitudinal grooves formed in said inner and outer members, balls guided in said grooves for transmitting torque between said inner and outer members, cage means having an axis and being disposed between said inner and outer members, a plurality of apertures formed in said cage means for retaining said balls therein in a plane normal to the axis of said cage means, the axes of said inner and outer members intersecting each other in said plane to define the center point of the joint, said cage means having an outer spherical surface cooperating with a cylindrical inner surface of said outer member, said cylindrical surface being concentric with the axis of said outer member, and an inner spherical surface cooperating with an outer



spherical surface of said inner member, the center of said outer spherical surface of said inner member lying on the axis of said inner member, said outer and said inner spherical surfaces of said cage means each having a center, said last mentioned centers lying on the axis of said cage means on opposite sides of and being spaced equal distances from said plane.

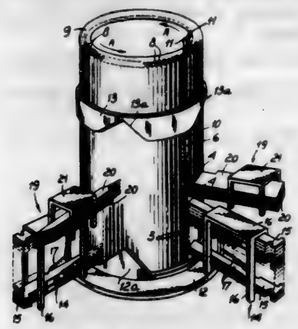
3,442,096
BELLOWS FOR PROTECTING SLIDING DEVICES
Michel Orain, Courbevoie, France, assignor to Societe Anonyme: Glaenzer Spicer, Poissy, Yvelines, France, a corporation of France
Filed Mar. 10, 1967, Ser. No. 622,137
Claims priority, application France, Mar. 18, 1966, 54,143
Int. Cl. F16d 3/84
U.S. Cl. 64—32 **2 Claims**



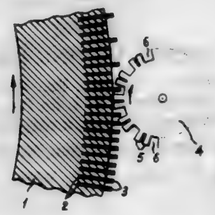
The present invention provides bellows for sliding devices, particularly for sliding joints, in which the pressure prevailing in their interior remains equal to the outside pressure during the different elongations undergone by the universal joint and the bellows during rotation of the shafts.

3,442,097
DEVICE FOR DISPLACING NEEDLES FOR CIRCULAR KNITTING MACHINES
Francesco Lonati, Via Val Sorda 28, Brescia, Italy
Filed Oct. 18, 1965, Ser. No. 496,792
Claims priority, application Italy, Nov. 21, 1964, 25,047/64
Int. Cl. D04b 9/00, 15/16
U.S. Cl. 66—50 **2 Claims**

This disclosure relates to a device for upwardly displacing the needles in circular knitting machines with a needle cylinder provided on its periphery with vertical needle slots in which the needles of the knitting machine are vertically slidable, an intermediate jack below each of said needles within said needle slots and having its upper end abutting against the bottom of said needles, a rocking pattern jack below each of said intermediate jacks within said needle slots and abutting with its upper portion against the butt of the corresponding intermediate jack and with cam stations arranged at preestablished distances around the needle cylinder and including cam means for actuating the rocking pattern jacks.



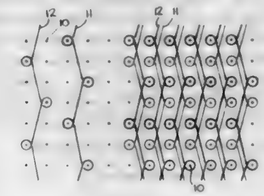
3,442,098
CIRCULAR KNITTING MACHINES
Frederick H. Carrotte and John Ernest Ellis, Leicester, England, assignors to A. Kirkland & Co. Limited, Syston, Leicester, England, a British company
Filed July 26, 1967, Ser. No. 656,117
Claims priority, application Great Britain, July 29, 1966, 34,174/66
Int. Cl. D04b 9/38
U.S. Cl. 66—50 **4 Claims**



A circular knitting machine designed to knit patterned fabric and having a pattern wheel geared to the needle cylinder of the machine, said pattern wheel having peripheral elements adapted to move selector members, for example jacks, radially on the cylinder to initiate knitting movement of the needles. In such a machine the pattern wheel is so geared to the cylinder that the peripheral speed of the pattern wheel lies between the highest and lowest speeds of each selector member in being moved from its outer position to its position on the cylinder.

3,442,099
METHOD OF WARP KNITTING WITH TEXTURED YARN
Calvin Auville and Johann Gross, Charlotte, N.C., assignors to Celanese Corporation, a corporation of Delaware
Continuation-in-part of application Ser. No. 423,499, Jan. 5, 1965. This application Sept. 20, 1965, Ser. No. 489,468
Int. Cl. D04b 23/00, 27/00
U.S. Cl. 66—86 **2 Claims**

Method of warp knitting on conventional warp knitting equipment have two or more threaded guide bars, at least one of said guide bars being threaded with textured yarn ends having a greater aggregate denier than may be practically knitted in conventional manner, the method comprising knitting at least one course with the first bar while



idling the second bar, then knitting at least one course with the second bar while idling the first bar, and in the same manner alternating said knitting and idling in subsequent courses.

3,442,100
FABRIC DRAWOFF FROM KNITTING MACHINES
Charles Frederick Manger, Rugby, and John Michael Klee and Richard James Carter, Leicester, England, assignors to The Bentley Engineering Company Limited, Leicester, England
Filed Mar. 14, 1967, Ser. No. 622,979
Claims priority, application Great Britain, Mar. 26, 1966, 13,477/66
Int. Cl. D04b 27/34, 15/88
U.S. Cl. 66—153 **2 Claims**



A fabric drawoff device for a circular knitting machine having cooperating take-down rollers one of which is yieldably urged towards the other by spring means which is provided with a cam controlled mechanism for varying the resilient pressure between the rollers at predetermined times during the operation of the knitting machine as dictated by a control drum.

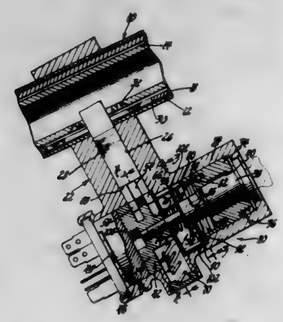
3,442,101
PILE FABRIC
Siegfried Ploch, Walter Scholtis, and Heinz Zschunke, Karl-Marx-Stadt, Germany, assignors to Forschungsinstitut für Textiltechnologie, Karl-Marx-Stadt, Germany
Filed Apr. 1, 1965, Ser. No. 444,640
Int. Cl. D04b 7/12, 9/12, 11/08
U.S. Cl. 66—194 **4 Claims**



1. A textile fabric comprising:
(a) a base; and

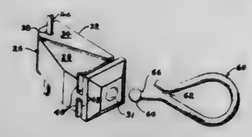
(b) a pile layer comprising a plurality of rows of fiber bundles extending along one side of said base in at least one direction, each of said rows comprising a plurality of substantially twistless fiber bundles secured to said base by extending portions of said bundles through said base to the other side thereof to form, with portions of adjacent bundles, at least two interconnected rows of knitted loops extending in the same direction as the rows of fiber bundles of which they are a part, each of said bundles comprising fibers of a length sufficient to extend into at least two adjacent rows of said knitted loops.

3,442,102
CYLINDER LOCK ACTUATOR
Donald A. Butts, Saginaw, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 14, 1966, Ser. No. 601,599
Int. Cl. E05b *63/00, 15/16*; B60r *25/04*
U.S. Cl. 70—1.5 5 Claims



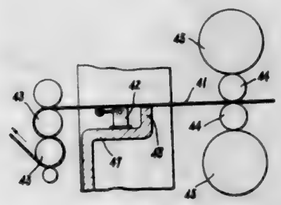
The improved cylinder lock actuator is disclosed as embodied in a combined steering column and ignition lock including an ignition switch and a steering column lock bolt actuated by a rotary actuating member responsive to rotation of a lock cylinder. Coupling means which normally couple the lock cylinder to the actuating member are disabled either under unauthorized forced rotation or forced axial movement of the lock cylinder within its housing intended to destroy the tumbler operated side bar or other locking means of the lock cylinder.

3,442,103
KEY HOLDER
Gerard Le Page, Waterbury, Conn., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed July 25, 1967, Ser. No. 655,826
Int. Cl. A45c *11/32*
U.S. Cl. 70—456 3 Claims



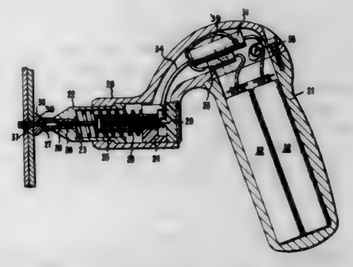
The present invention relates to a multiple key holder. The fastening means for the keys comprises a block pivotally secured to the case and a U-shaped spring clip on the block for retaining the individual keys.

3,442,104
CONTROLLING METHOD AND MEASURING INSTRUMENT FOR THE FLATNESS OF STRIPS
Yoshisuke Misaka, Nishinomiya, Kakunosuke Yamamori, Masahiro Machida, and Michio Nakata, Wakayama, Japan, assignors to Sumito Metal Industries Limited, Osaka, Japan
Filed Jan. 25, 1966, Ser. No. 523,865
Claims priority, application Japan, Jan. 30, 1965, 40/5,262
Int. Cl. B21b *37/12, 37/00, 37/04*
U.S. Cl. 72—9 4 Claims



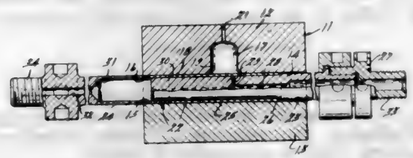
A method for correcting roll contour by guiding a strip under tension between two sets of fixed rolls, providing contactors at three points on the strip, i.e. portions near the center part and both edges across the strip to measure the tension at each said portions and providing a control input signal for a roll contour control system by a deviation in the measured values at the center part and both edges of the strip, whereby a metal strip of favorable flatness can automatically be obtained and an instrument for carrying out the above method.

3,442,105
FASTENER SETTING DEVICE
Edward J. Sosnowicz, Colwyn, Pa., and Frank M. Willis, Sewell, N.J., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Jan. 19, 1966, Ser. No. 521,641
Int. Cl. B21j *15/00*; B21d *26/08*
U.S. Cl. 72—56 11 Claims



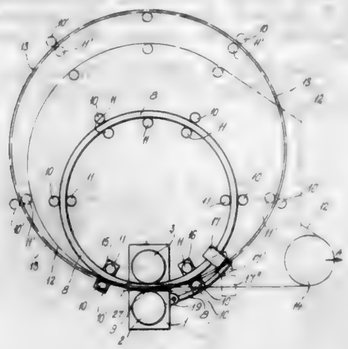
A device for setting electrically-fired explosively-actuated fasteners comprising a current-sensitive explosive in contact with a first electrode and a second electrode. The device comprises a supporting body for two electrodes one of which acts as a positioner for the device with respect to the fastener and is yieldably mounted in the body. The second electrode is mounted in the body for independent movement with respect to the positioning electrode in a direction parallel to the direction of yieldable movement of the positioning electrode.

3,442,106
METHOD AND APPARATUS FOR MAKING WROUGHT METAL BRANCH FITTINGS
Robert A. Gray, Jr., and James F. Shuler, Port Huron, Mich., assignors to Mueller Brass Co., Port Huron, Mich., a corporation of Michigan
Filed Sept. 12, 1966, Ser. No. 583,134
Int. Cl. B21d *39/08, 53/00*; B21k *29/00*
U.S. Cl. 72—58 2 Claims



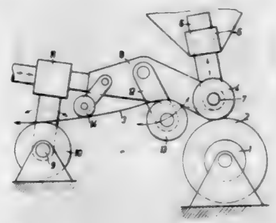
A die has main cavity and a branch cavity. A tubular blank is placed in the main cavity and male and female rams engage the blank ends. The male ram has a reduced portion extending through the blank and into the female ram, and a fluid passage in the male ram conducts fluid pressure to the vicinity of the branch cavity.

3,442,107
ARRANGEMENT FOR MANUFACTURING METAL STRIP
Karl Gunnar Jonason, Vasteras, Sweden, assignor to Aktiebolaget Svenska Metallverken, Vasteras, Sweden
Filed May 19, 1966, Ser. No. 551,454
Claims priority, application Sweden, May 26, 1965, 6,937/65
Int. Cl. B21d *5/12*
U.S. Cl. 72—111 2 Claims



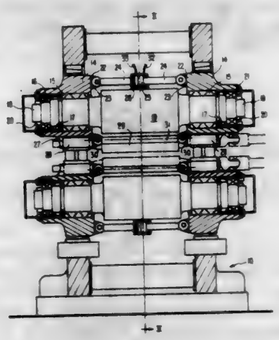
An arrangement for manufacturing metal strip, in which a ring-shaped metal billet is passed between working rolls and first rolled to a much larger diameter such that when the thickness of the billet has been reduced to the extent that the ring tends to collapse, it is extended on backing rolls into an elongated endless loop. The rolled ring is supported on backing rolls as long as its thickness is sufficient to prevent collapse, and after the ring has been reduced to a state in which it can collapse, the backing rolls lead said loop in a plane through the roll gap, the loop forming substantially right angles with said roll gap.

3,442,108
METAL-HANDLING METHOD AND APPARATUS
Friedrich Müller, Hemer, Germany, assignor to Sundwiger Eisenhutte Maschinenfabrik Grah & Co., Hemer-Sundwig, Germany
Filed Jan. 20, 1966, Ser. No. 521,897
Claims priority, application Germany, Mar. 23, 1965, S 96,130
Int. Cl. B21d *1/02, 3/02*
U.S. Cl. 72—164 14 Claims



A method and apparatus for preventing the occurrence of coil breaks while uncoiling an annularly coiled strip by applying a supporting pressure transversely to the strip against the coil at approximately the point where the strip leaves the coil, and deflecting the strip in a direction to effectuate its uncoiling while producing a permanent deformation of the strip, which deformation is approximately equal to the difference between the curvature of the coiled strip and the desired strip curvature.

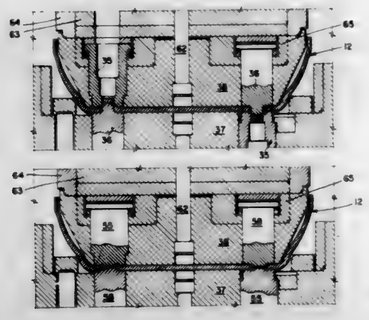
3,442,109
ROLLING MILLS
Lucien Diolot, Neuilly-sur-Seine, France, assignor to Societe Nouvell Spidem, Paris, France, a corporation of France
Filed July 29, 1965, Ser. No. 475,709
Claims priority, application France, July 31, 1964, 983,915
Int. Cl. B21b *31/30*
U.S. Cl. 72—240 7 Claims



The invention relates to a rolling mill construction in which the back-up rolls that are disposed on opposite sides of work-engaging rolls may be caused to have a rocking movement in a vertical plane through a power operated means which extends parallel to the axes of the

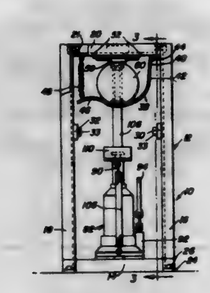
back-up rolls so that a product having accurate tolerances may be produced.

3,442,110
METHOD AND APPARATUS FOR MAKING HOLES WITH COLD-WORKED MARGINS AND THE PRODUCT
Leonard Walton, Grosse Point, and Patrick J. Hogan, Mount Clemens, Mich., assignors to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Aug. 12, 1965, Ser. No. 479,259
Int. Cl. B21d *31/02, 22/00, 31/00*
U.S. Cl. 72—327 17 Claims



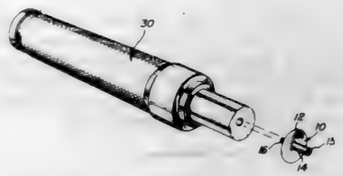
An apparatus and method for making a hole with a cold-worked hardened margin in which a workpiece is placed between mating dies, a hole in pierced therethrough and the adjacent metal stretched in the initial movement of the dies toward each other. Further movement of the dies coins and preshapes the metal about the hole. The metal blank is then transferred to a second set of dies wherein the margin of the hole is further cold-worked and coined to the final accurate shape.

3,442,111
HYDRAULIC PRESS ADAPTED TO UTILIZE PORTABLE HYDRAULIC JACK
William I. Ledford, Brentwood, Calif. (Rte. 2, Box 31–A, Oakley, Calif. 94561), and Jack Sowell, 421 Main St., P.O. Box 722, Oakley, Calif. 94561
Filed Oct. 21, 1966, Ser. No. 588,383
Int. Cl. B21d *9/05, 31/00*; B21j *9/18*
U.S. Cl. 72—389 10 Claims



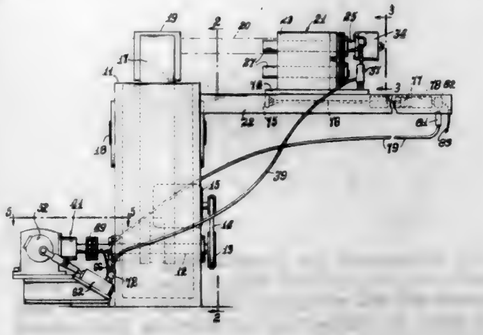
A vertically disposed hydraulic press including a base for receiving the lower end of a vertically extendable hydraulic jack thereon and a crosshead disposed above the base and for disposition above the upper end of the vertically extendable hydraulic jack. The crosshead including a novel work holding attachment adapted to support a workpiece therebeneath and the attachment includes a generally U-shaped member including elongated legs interconnected at one pair of corresponding ends by means of a bight portion. The free end of one of the legs of the work holding attachment is pivotally connected to the crosshead for oscillation about a horizontal transverse axis and an expansion spring is connected between the free end of the other leg and a portion of the crosshead disposed thereabove with the U-shaped work holding attachment opening upwardly and the expansion spring serving to at least lightly clamp a workpiece between the undersurface of the crosshead and the work holding attachment with the workpiece being cradled in the generally U-shaped attachment.

3,442,112
RIVET BUCKER ASSEMBLY
John C. Abromavage, Jamison, and Harry J. Reichardt, Philadelphia, Pa., assignors to Arcon, Incorporated, Portland, Oreg., a corporation of Oregon
Filed May 23, 1967, Ser. No. 640,701
Int. Cl. B21j *15/38*; B21f *13/00*
U.S. Cl. 72—391 6 Claims



A punching tool for setting rivets of the type having axially advanceable pins. The tool is hammered to actuate a ram into driving contact with the rivet pin to expand the rivet shank into securing position.

3,442,113
MATERIAL FEEDING APPARATUS
George F. Beckwell, Sugar Grove, Ill., assignor to Pines Engineering Co. Inc., Aurora, Ill., a corporation of Illinois
Filed Feb. 19, 1965, Ser. No. 434,044
Int. Cl. B21d *43/02, 43/00*; F15b *7/00*
U.S. Cl. 72—421 6 Claims



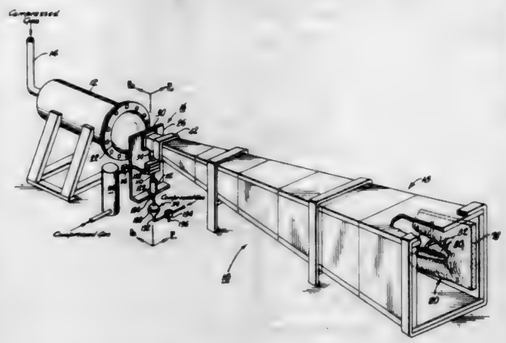
Apparatus for forming tubular stock and including means for incrementally advancing a workpiece toward means to perform work thereon and for incrementally rotating said workpiece during its advance.

3,442,114
BODY PANEL FLANGE BENDING AIR HAMMER ATTACHMENT
Thomas M. Snowden, 212 Hazel Drive, Florence, S.C. 29501
Filed Dec. 13, 1966, Ser. No. 601,484
Int. Cl. B21d *31/06*; B21j *13/02*
U.S. Cl. 72—465 2 Claims



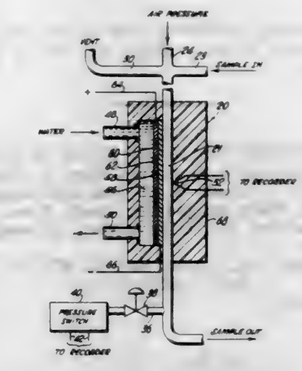
This disclosure pertains to an attachment for an air hammer including a reciprocating chuck from which the attachment is to be supported. The attachment is specifically designed to provide a guide for properly positioning the impact member of the attachment for impact with a body panel flange which is to be bent and simultaneously cause the impact member to impact with the flange in a manner crimping the flange over an associated body panel portion.

3,442,115
SONIC BOOM PRESSURE WAVE SIMULATION METHOD AND APPARATUS
Simon Slutsky, Franklin Square, and Roger Tomboulian, Uniondale, N.Y., assignors to General Applied Science Laboratories, Inc., Westbury, N.Y.
Filed July 21, 1967, Ser. No. 655,142
Int. Cl. G01n *3/62*
U.S. Cl. 73—12 3 Claims



Pressure waves closely simulating "sonic boom" waves are produced by regulating the mass flow rate of a gas from a pressurized source in accordance with a mathematical function derived from the general flow equations describing the gas flow. The resulting pressure waves are transmitted to a test station in substantially spherical form by means of a diverging conduit whose walls are substantially straight in the direction of wave travel. In one embodiment of the invention, the mass flow rate is regulated in accordance with the time-integral of the pressure wave desired by varying the exit area of a sonic nozzle which is supplied with compressed gas at a super-critical pressure. The effects of unwanted reflected waves can be eliminated by providing a vacuum source in combination with the pressure source. Traveling pressure waves closely simulating traveling sonic boom waves are produced in all embodiments of the invention.

3,442,116
POUR POINT METER
Arden S. Brown, Westfield, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed Oct. 5, 1965, Ser. No. 493,015
Int. Cl. G01n *25/02*
U.S. Cl. 73—17 3 Claims



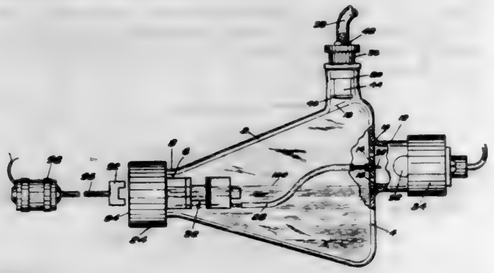
A pour point measuring apparatus and method wherein a constant pressure is applied directly to one end of a solidified sample which includes a pressure transducer directly responsive to the pressure at the opposite end of the sample. Upon raising the temperature of the sample, the applied pressure is transmitted through the sample directly to the transducer at the opposite end thereof to provide an indication of sample pour point.

The present invention relates in general to an improved means and method for measuring the pour point of a normally liquid composition such as lubricating oil. In particular, the present invention relates to improvements in the method and apparatus disclosed in U.S. Letters Patent Nos. 3,122,911 and 3,122,912 assigned to the same assignee as this application.

3,442,117
BIOLOGICAL FLUID BATH
Clarence Lloyd Claff, 5 Van Beal Road, Randolph, Mass. 02368
Filed Jan. 12, 1967, Ser. No. 608,873
Int. Cl. G01n *7/00*
U.S. Cl. 73—19 5 Claims

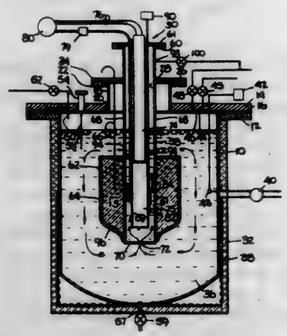
The invention consists of a container for the respirometer fluid having three openings in the container, two being approximately opposite each other in the container and the third being on top. A closure element for the opening on one side of the container supports a magnetic stirring and pumping means; the opposite opening has a closure element supporting an oxygen electrode device for measuring the oxygen tension in the fluid of the container (such as a Clark cell); and the opening on top of the container has a closure element supporting a manometer connection for measuring the gas pressure above the fluid level in the container. A tube connects the outlet of the pumping means to a nozzle which is mounted adjacent the electrode

of the oxygen electrode and directs bath fluid directly against the cell. A perforated diaphragm separates the



oxygen electrode device from the rest of the container so that the fish in the container will not be in contact with the cell.

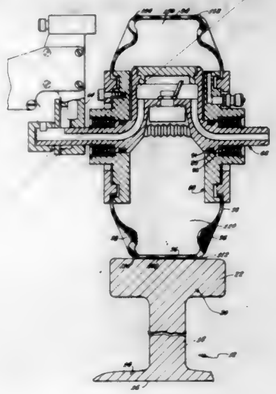
3,442,118
DEVICE FOR TESTING A BODY OF FLUID
Herbert O. Muenchow, Northville, Harry V. Chamberlain and Wayne L. Chase, Royal Oak, and Joseph Bucki, Allen Park, Mich., assignors to Atomic Power Development Associates, Inc., Detroit, Mich., a corporation of New York
Filed Aug. 6, 1965, Ser. No. 477,736
Int. Cl. G01n *11/02*
U.S. Cl. 73—61 **9 Claims**



A testing device including an elongated member immersible in a body of fluid. A chamber is disposed internally of the member and a heating element is disposed within the chamber. A sample of solid material upon which the fluid is to be tested is carried by the heating element. The chamber contains a lower inlet and an upper outlet for the flow of the liquid, and is adapted to direct the fluid into contact with the sample of solid material during its passage therethrough.

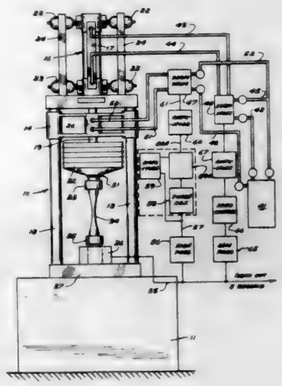
3,442,119
ULTRASONIC SEARCH WHEEL ASSEMBLY
Gerald de G. Cowan, New Preston, Conn., assignor to Automation Industries, Inc., El Segundo, Calif., a corporation of California
Filed Oct. 11, 1965, Ser. No. 494,977
Int. Cl. G01n *9/24*
U.S. Cl. 73—67.5 **12 Claims**

The nondestructive testing system disclosed herein is particularly adapted for simultaneously ultrasonically and inductively inspecting railroad rails for internal defects. An ultrasonic search wheel is provided which includes a tire with reinforced sidewalls and ribs on the tread for



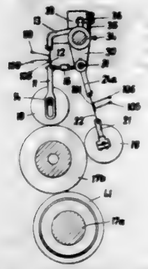
maintaining the wheel acoustically coupled to the rail at all times. Means are also provided for maintaining the wheel search unit and inductive pickup properly oriented with the rail at all times.

3,442,120
SERVO VALVE CONTROLLED HYDRAULIC RESONANT MACHINE
Max E. Russenberger, Schafthausen, Switzerland, and Dennis H. Anderson, Minnetonka, and Martin M. Gram, Bloomington, Minn., assignors, by mesne assignments, to MTS Systems Corporation, a corporation of Minnesota
Filed Apr. 19, 1966, Ser. No. 543,696
Int. Cl. G01n *3/32*
U.S. Cl. 73—92 **7 Claims**



A fatigue test machine applying an oscillatory load on an elastic specimen with the natural frequency of the spring-mass system comprising the specimen in either external weights or a hydraulic mass equivalent. A servo valve is used for providing make up oil compensating for friction losses in the system and to insure the system will continue to resonate. The control circuitry provides adequate response so that the natural frequency of the spring-mass system can be maintained.

3,442,121
DEVICE FOR SUPERVISING THE INK SUPPLY OF A PRINTING PRESS
Burkhardt Wirz, Munich, Germany, assignor to Roland Offsetmaschinenfabrik Faber & Schleicher AG, Offenbach am Main, Germany, a German company
Continuation-in-part of application Ser. No. 471,660, July 13, 1965. This application Dec. 27, 1965, Ser. No. 516,298
Int. Cl. G01b *19/08*
U.S. Cl. 73—150 **5 Claims**



A device for measuring the pulling power of printing inks in which two rotatable measuring rollers with a non-elastic surface engage a non-elastic inking mechanism roller of a printing press. One of the measuring rollers is mounted radially resilient in reference to the inking mechanism roller and the other is mounted tangentially resilient in reference to the inking mechanism roller. Electric measuring means which are responsive to movements of the measuring rollers in radial and tangential direction respectively, as caused by the pulling power of the ink to be supervised, generate signals corresponding to the movements of the measuring rollers and these signals are used to control means for computing the pulling power of the printing inks.

3,442,122
TESTING PROBE FOR SOILS
Yvon Marie-Xavier Broise, 4197 Prince Charles Ave., Chomedey, Quebec, Canada, and Alan Thorley, 686 Lakeshore Drive, Dorval, Quebec, Canada
Filed Dec. 5, 1966, Ser. No. 599,021
Int. Cl. E21b *47/026*
U.S. Cl. 73—151 **6 Claims**



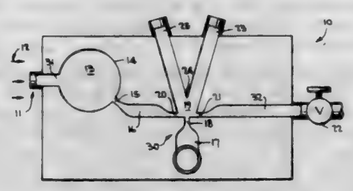
The testing probe is of the type used for measuring the bearing capacities of soils and includes a tube which is insertable in a bore hole of given diameter. The tube is diametrically expandable under pressure to a diameter larger than the diameter of the hole and includes a measuring device having an electrical pulse generating device for measuring the diametric expansion of the tube under a given pressure. Thus, the resistance of the soil at that location can be determined.

3,442,123
TESTING PROBE FOR SOILS
Yvon Marie-Xavier Broise, Chomedey, Quebec, Canada, assignor of one-half to Alan Thorley, Dorval, Quebec, Canada
Filed May 1, 1967, Ser. No. 635,190
Int. Cl. E21b *47/00*
U.S. Cl. 73—151 **12 Claims**



A testing probe having a fluid-inflatable sleeve adapted to be expanded against the wall of a bore for measuring the degree of recession of the wall under such expansion in relation to the fluid pressure applied, expansion restricting means in the form of an umbrella of spokes being attached at each end of the expandable sleeve and adapted to expand with the sleeve to engage the wall of the bore and to present an abutment surface to prevent a longitudinal blow-out of the sleeve, and potentiometer means for electrically measuring the recession of the wall.

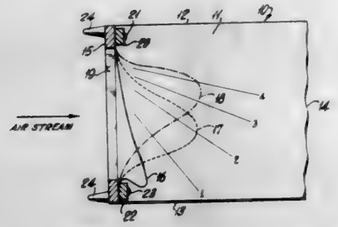
3,442,124
FLUID VELOCIMETER
Raymond W. Warren, McLean, Va., Carl J. Campagnuolo, Chevy Chase, Md., and Jonathan E. Fine, Washington, D.C., assignors to the United States of America as represented by the Secretary of the Army
Filed Dec. 5, 1966, Ser. No. 599,689
Int. Cl. G01f *1/00*
U.S. Cl. 73—194 **8 Claims**



A fluid whose velocity it is desired to measure is passed through a fluid resonator which is coupled to a fluid amplifier. If the fluid in the resonator resonates, indicating a certain fluid velocity range, a low pressure signal

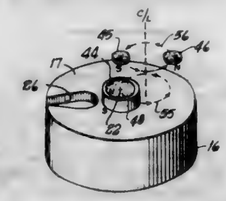
is received by the amplifier while, if the resonator is not at resonance, a high pressure signal is sent to the amplifier. Depending on the type of pressure signal sent to the fluid amplifier a particular type of signal is transmitted from the amplifier indicating whether said fluid is in said certain velocity range or not.

3,442,125
FLUID FLOW MEASURING DEVICE
Thomas P. Foley, Huntington, N.Y., assignor to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York
Filed May 3, 1967, Ser. No. 635,798
Int. Cl. G01f *1/06*
U.S. Cl. 73—228 **4 Claims**



This tape anemometer has one or more cells or passageways, each with a weighted tape strip or streamer attached at the top to hang by gravity. The position of each streamer indicates air flow.

3,442,126
MAGNETIC COUPLING
Kenneth Southall, Wethersfield, Conn., assignor to Neptune Meter Company, New York, N.Y., a corporation of New Jersey
Filed Apr. 5, 1967, Ser. No. 628,704
Int. Cl. G01f *3/08*
U.S. Cl. 73—257 **17 Claims**



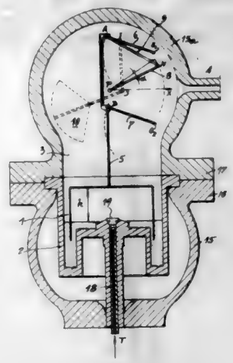
A magnetic coupling for a positive displacement fluid meter, having a driver magnet carried by the meter piston about an annular path and a pair of follower magnets carried by a rigid rotatable mounting for revolution 180° apart in an annular path which is coaxial with the path of the driver magnet and is equal in radius to, or smaller in radius than, the driver magnet path. Rotation of the follower magnet mounting operates a meter indicator mechanism. The driver and follower magnets are disposed on opposite sides of a wall separating the meter flow chamber from the indicator housing, being coupled only magnetically through this wall. Each of the magnets has one polarized end facing the wall; the wall-facing ends of the two follower magnets are opposite to each other in polarity. The two follower magnets are substantially equal in mass and also are substantially smaller than the driver magnet.

3,422,127
LIQUID LEVEL INDICATOR
Edgar B. Nichols, 325 W. Main St., Moorestown, N.J. 08057
Filed Aug. 29, 1966, Ser. No. 575,811
Int. Cl. G01 *23/02*
U.S. Cl. 73—327 **8 Claims**



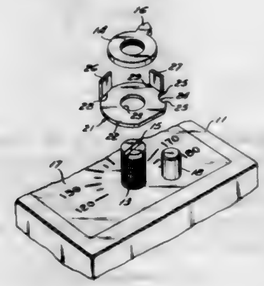
A liquid level indicator having a transparent head that collects and magnifies a plurality of visual signals from a first visual signal means positioned at the end of a stem connected to said head and a second reflective material layer carried by a plug also connected to the transparent head.

3,442,128
CORRECTING DEVICE FOR GASEOUS FLUID METERS
Martial Henri Mathias Muger, Bagneaux, France, assignor to Compagnie des Compteurs, Paris, France, a company of France
Filed Apr. 24, 1967, Ser. No. 633,120
Claims priority, application France, Apr. 28, 1966, 59,436
Int. Cl. G01k *1/26*
U.S. Cl. 73—345 **5 Claims**



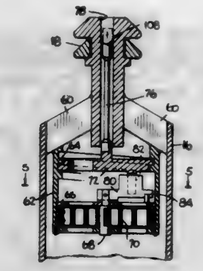
Correcting device associated with a gas meter for gaseous fluid having a variable temperature and pressure comprising a container such as a bellow fitted initially with a sample of gas at ambient temperature and pressure, an enclosure for the gas of unknown temperature and pressure containing also said container, a rod connected to said container and a set of levers pivotally connected to said rod to be angularly operated thereby, the angular displacement of said levers corresponding to a coefficient giving data for correction of the measured volume of gas by said meter.

3,442,129
THERMOSTAT
Clifford S. Odson, Mansfield, Ohio, assignor to Therm-O-Disc, Incorporated, a corporation of Ohio, incorporated 1968
Filed Dec. 18, 1967, Ser. No. 691,602
Int. Cl. G01k *5/50*
U.S. Cl. 73—363 **7 Claims**



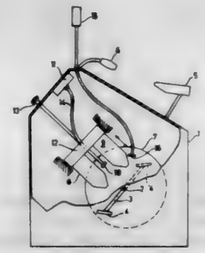
An adjustable thermostat provided with a range stop to selectively limit the range of adjustment of the thermostat. The range stop is positioned over the adjusting stem of the thermostat between the thermostat body and the indicator pointer. A peripheral notch fits around a fixed stop to orient the range stop. Two upstanding projections on the range stop are located to limit the range of adjustment of the thermostat. Each upstanding projection is frangibly connected to the range stop base so that the upstanding projections may be broken away to increase the range of adjustment of the thermostat.

3,442,130
REMOTE TEMPERATURE MEASUREMENT
Edgar D. Oppenheimer, Mamaroneck, N.Y., assignor to Atomic Power Development Associates, Inc., Detroit, Mich., a corporation of New York
Original application Sept. 3, 1964, Ser. No. 394,281, now Patent No. 3,321,370, dated May 23, 1967. Divided and this application July 15, 1966, Ser. No. 565,515
Int. Cl. G01k *5/64*
U.S. Cl. 73—363.9 **12 Claims**



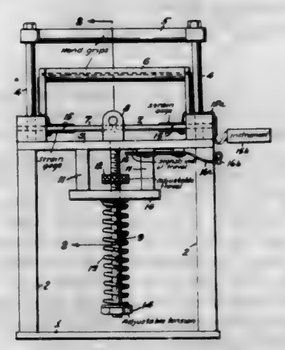
A temperature measuring device which includes first and second elements which are threadedly engageable so that the second element moves longitudinally with respect to the first element when it is rotated. A temperature responsive element is mounted to rotate as the temperature changes and this rotation serves to rotate the second element. The longitudinal displacement of the second element may be sensed without affecting its magnitude.

3,442,131
ERGOMETER
Johannes Leyten, Woudenberg, Netherlands, assignor to Gebr. Mynhardt C.V., a corporation of the Netherlands
Filed June 21, 1966, Ser. No. 559,201
Claims priority, application Netherlands, June 25, 1965, 6508252
Int. Cl. G01l *5/02*
U.S. Cl. 73—379 **9 Claims**



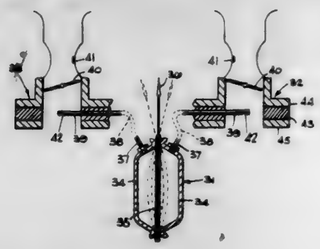
A cycle ergometer for measuring human capacity, in which the resistance torque of the braking device varies in the same sense as the pedal frequency, preferably in a substantially directly proportional relationship. The braking device may be of the eddy current disc type.

3,442,132
ELECTRIC MYODYNAMOMETER
Baltzar Leo De Mare, Aberdeen, Md., assignor to the United States of America as represented by the Secretary of the Army
Filed Mar. 30, 1967, Ser. No. 627,598
Int. Cl. G01l *5/02*
U.S. Cl. 73—379 **2 Claims**



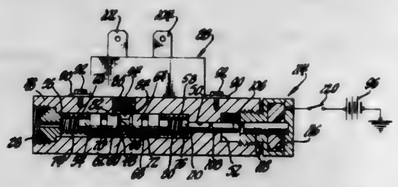
The apparatus is for use in determining muscular energy expended in doing work over a period of time. A handgrip, spring pressed to one position, may be repeatedly squeezed. An element is thereby repeatedly deformed. An electrical strain gage is used to detect the deformations and a recording instrument or electric meter may be used to indicate the changes in the electrical current passing through the strain gage during a period of time. The changes in current flow are proportional to force exerted and tend to show power produced as the person squeezes and releases the handgrip.

3,442,133
DIFFERENTIAL PRESSURE GAUGE
Norman Horwood, Moseley, Alexander Gray, Greenock, and James Irving Nevill, Doveridge, England, assignors to Gray Horwood Engineering Limited, Birmingham, England, a British company
Filed Aug. 28, 1967, Ser. No. 663,826
Int. Cl. G01l 7/08
U.S. Cl. 73—407 2 Claims



A differential pressure gauge in which there are two chambers to be connected to the pressure to be compared. The chambers are closed either by a common diaphragm or by separate diaphragms and means lying outside the chambers are provided for indicating diaphragm movement. The gauges can be used for balancing air flow in carburetors.

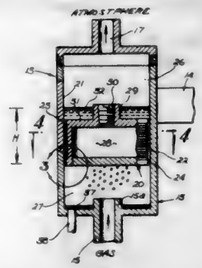
3,442,134
FLUID PRESSURE SENSING AND CONDITION INDICATING MECHANISM
Ronald W. Bennett, Miamisburg, and Kenneth H. Dunlope, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 12, 1966, Ser. No. 600,912
Int. Cl. G01l 7/16
U.S. Cl. 73—419 10 Claims



A dual fluid circuit brake system has pressures from each of the circuits acting on opposite ends of a shiftable piston so that the forces acting on the piston are balanced unless one of the fluid circuits suffers a pressure loss. A sufficient force unbalance due to pressure differences acting on the piston causes the piston to move and actuate a pressure condition indicating circuit. Operation of the mechanism can be checked by actuation of a device which moves the piston independently of the pressures in the fluid circuits. This device is disclosed as a test plunger arranged for movement manually or by a suitable power device to engage the piston and move it until the indicating mechanism is actuated.

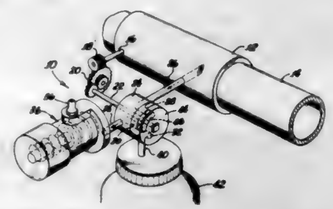
3,442,135
DEVICE FOR MEASUREMENT OF GAS PROPERTIES AND GAS FLOW RATE
Frederick F. Liu, Northridge, Calif., assignor to Quantum Dynamics, Inc., Tarzana, Calif., a corporation of California
Filed Feb. 9, 1967, Ser. No. 614,961
Int. Cl. G01l 7/16
U.S. Cl. 73—419 11 Claims

Piston and casing combination having a capillary channel therebetween with the wall of the piston facing the channel containing a labyrinth. The casing contains a passage for connecting a gas source to one side of the piston, and a reservoir for sealing fluid is located on the other side of the piston and connected with the channel. The head of the fluid in the reservoir is adjustable to approximately balance the gas pressure on the opposite



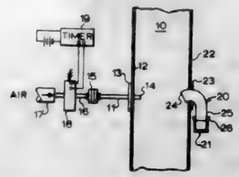
side of the piston. The casing can be tilted to produce gravitation forces on the piston compensating for frictional forces and the casing can be evacuated by a vacuum pump or compensating cylinder so that the piston is sensitive to leakages from a low pressure source into a substantial vacuum such as space.

3,442,136
AUTOMATIC FLUID SAMPLER
Augustus B. Wilson, Jr., Tyler, Tex., assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland
Filed Aug. 10, 1966, Ser. No. 571,650
Int. Cl. G01n 1/10
U.S. Cl. 73—422 1 Claim



The invention includes a fluid sampler in which means defining a passage into sampler are provided for introducing solvents under a pressure greater than the line pressure in an oil line and dissolving accumulated paraffin in the sampler.

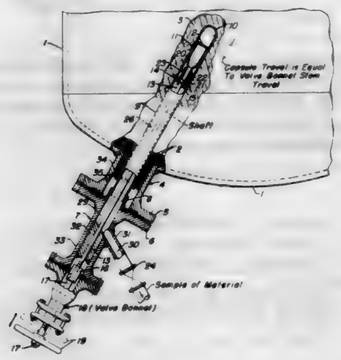
3,442,137
METHOD AND MEANS FOR SAMPLING PULVERULENT MATERIAL
Oliver H. Stohldrier, St. Louis, Mo., assignor to National Lead Company, New York, N.Y., a corporation of New Jersey
Filed Oct. 20, 1966, Ser. No. 588,078
Int. Cl. G01n 1/00
U.S. Cl. 73—422 10 Claims



A sample of pulverulent material is obtained by passing the pulverulent material between a gas jet and an open-

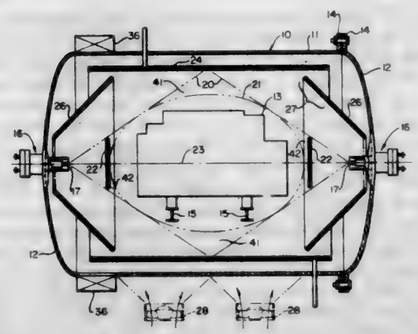
ended sample collector. Periodically a blast of air is emitted by the gas jet to blow a sample of the material into the sample collector.

3,442,138
PARTICULATE SOLID SAMPLING DEVICE
Walter C. Hensel, Palatine, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
Filed Oct. 9, 1967, Ser. No. 673,708
Int. Cl. G01n 1/00
U.S. Cl. 73—423 7 Claims



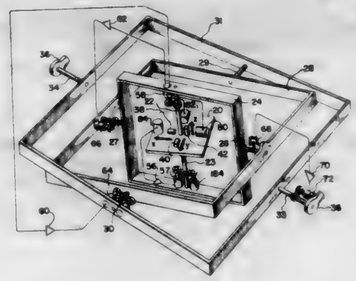
A sampling device particularly adapted to obtain samples of free-flowing particulates from the interior of a contact chamber. The improved device makes use of a non-rotating sample receiving capsule member which can slide in a reciprocating manner within an enclosing lance-like tubular member. In one slide position, a set of inlet openings are in alignment with one another, while, in the other position, a set of sample outlet openings are in alignment.

3,442,139
HIGH VACUUM SPACE SIMULATOR
Donald Frank Munro, Redwood City, Calif., assignor, by mesne assignments, to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York
Filed Oct. 14, 1965, Ser. No. 495,938
Int. Cl. B64g 7/00
U.S. Cl. 73—432 6 Claims



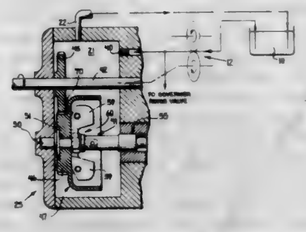
High vacuum pump space chamber for receiving a workpiece in a simulated outer space vacuum environment. Shielding defines a work space in the chamber free of sublimated getter material. An imaginary envelope entirely surrounds the workpiece. Molecules of gas passing outwardly through the envelope enter a surrounding pumping zone laid down by screened sublimators, and are pumped so as not to return into the envelope. The envelope defines the most limiting "flow passage" for molecular flow away from the workpiece to the pumping region.

3,442,140
DRIFT RATE COMPENSATION FOR ACCELERATION SENSITIVITY OF AN INERTIAL NAVIGATION PLATFORM
Frank M. Pelteson, Santa Ana, Calif., assignor to North American Rockwell Corporation
Filed Dec. 24, 1964, Ser. No. 421,049
Int. Cl. G01p 9/00; G01c 21/00; G06f 15/50
U.S. Cl. 73—504 5 Claims



A system for perturbing the direction cosines of a drift controlled rotating platform in accordance with the variance of the drift rate of the platform-mounted gyroscopes under the influence of acceleration. The mean drift rate of the gyroscopes is determined, the perturbing drift rate which varies as a function of the accelerations on the gyroscopes and the platforms is determined, and the perturbed direction cosines are determined utilizing the mean drift rate and perturbing drift rate.

3,442,141
SHROUD ARRANGEMENT FOR CENTRIFUGAL GOVERNOR WEIGHTS
Clessie L. Cummins, Jr., Indianapolis, Ind., assignor, by mesne assignments, to Clessie L. Cummins, Sausalito, Calif.
Filed Feb. 3, 1966, Ser. No. 524,688
Int. Cl. G01p 3/26
U.S. Cl. 73—521 6 Claims



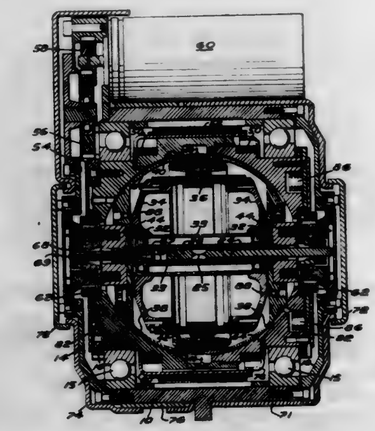
An improved internal combustion engine fuel control of type having a governor shaft, weight and carrier mechanism, a stationary housing with a chamber therein with-

in which the governor rotates, and means for moving fuel through the chamber to lubricate the governor. The improvement comprises a shroud mounted on the governor shaft for rotation therewith and shielding the weights of the governor. The shroud has a cylindrical outer periphery coaxial with the governor shaft to rotate smoothly without beating in the fuel in the chamber and having an interior that is substantially solid around the shaft except for spaces enabling movement of the governor weights, so that the fuel in the chamber is protected from the beating action of governor weights that would occur if the shroud were not present.

3,442,142
GYROSCOPE FLOAT
John Thomas Gresham, Skillman, N.J., assignor to FMC Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed May 10, 1966, Ser. No. 548,853
Int. Cl. G01c *19/04*
U.S. Cl. 74—5.5 **3 Claims**

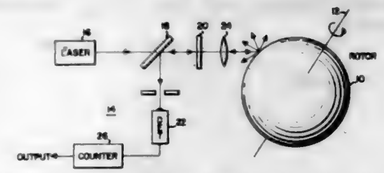
2. A gyroscope comprising a gyroscope float suspended in 1,2,3,4-tetrabromohexafluorobutane.

3,442,143
GYROSCOPE
Helmut W. E. Schlitt, Williamsville, N.Y., assignor to Bell Aerospace Corporation
Filed July 20, 1960, Ser. No. 44,226
Int. Cl. G01c *19/28, 19/06*
U.S. Cl. 74—5.6 **9 Claims**



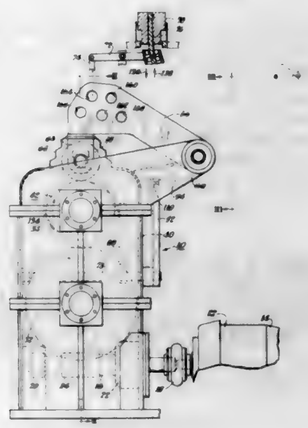
1. In a gyroscope, the combination of a main housing having drive means thereon, a frame journalled in said main housing and connected to said drive means for rotation of said frame about a predetermined axis, a hollow rotor case enclosed within said frame and including a tubular axle substantially coaxial with said predetermined axis; a suspension rod fixed at one end to said frame and projecting into said tubular axle, said suspension rod being fixed at its end remote from the frame to said axle, said suspension rod having a reduced diameter portion between its stated ends located substantially at the center of gravity of said case assembly and of minimum flexural stiffness, said suspension rod clearing said axle from said portion thereof outwardly of the axle to permit said case to rock relative to said frame, a rotor journalled on said axle, and induction means on said case for driving said rotor.

3,442,144
CONTROL APPARATUS
Junior Merle Gray, Coon Rapids, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed July 14, 1965, Ser. No. 471,850
Int. Cl. G01c *19/28*
U.S. Cl. 74—5.6 **3 Claims**



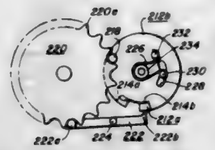
A gyroscope rotor pickoff utilizing the Doppler shift of laser radiation impinging on the rotor to indicate the speed and direction of movement of the rotor in three locations. From this information a computer may calculate the attitude of the rotor.

3,442,145
OSCILLATION DRIVE MECHANISM
Herbert Lemper, Pittsburgh, Pa., assignor to Mesta Machine Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 8, 1967, Ser. No. 659,210
Int. Cl. B22d *27/08;* **F16h** *25/08, 54/04*
U.S. Cl. 74—54 **8 Claims**



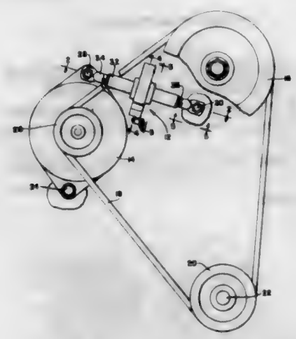
An oscillation drive mechanism is disclosed particularly for use in oscillating the mold structure of a continuous casting machine and for analogous applications. The mechanism includes an output cam member having a plurality of generally parallel camming surfaces thereon. The cam member is keyed for rotation with an elongated output shaft but is slidably movable therealong to juxtapose a selected one of the camming surfaces to a cam follower. The camming surfaces can be individually shaped to produce a substantially similar movement of the cam follower in one direction at a given rotational speed of the cam member but to produce correspondingly differing rates of cam follower movement in the opposite direction at such given rotation speed. The oscillation drive mechanism is particularly useful in connection with a continuous casting machine wherein the mold structure may be driven at different rates in the forward direction depending upon the casting speed but desirably is returned as quickly as possible in the opposite direction irrespective of casting speed for maximum production.

3,442,146
INTERMITTENT ROTARY MOTION
Theodore Simpson, 55 Ash St., Nashua, N.H. 03060
Filed July 7, 1967, Ser. No. 651,951
Int. Cl. F16h *27/04*
U.S. Cl. 74—84 **5 Claims**



An intermittent, rotary motion mechanism wherein a drive wheel having a drive pin and a cam cutout, drives a driven wheel which may be either a gear or a sprocket. A locking device in contact with both the drive wheel and the driven wheel unlocks the driven wheel during those periods the driven wheel is rotating and maintains the driven wheel in a locked condition during those times the driven wheel is not rotating.

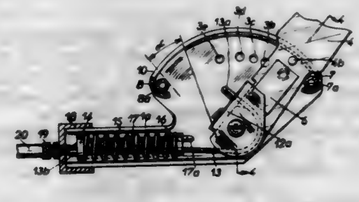
3,442,147
BELT TENSIONING DEVICE
Wayne Allman Downey, Dubuque, Iowa, assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Nov. 3, 1967, Ser. No. 680,493
Int. Cl. F16h *7/12*
U.S. Cl. 74—242.11 **7 Claims**



A device for maintaining uniform tension in a belt, being actuated by a spiral spring, and acting essentially as a turnbuckle in applying a constant pressure against a movable pulley, the pressure on the pulley forcing it outwardly against the belt so as to continuously provide the desired belt tension.

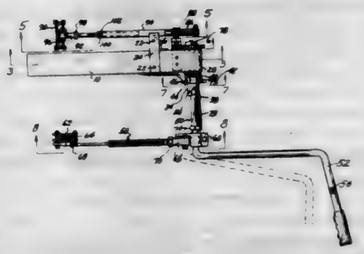
3,442,148
CHANGE SPEED CONTROL DEVICE
Lucien Charles Hippolyte Juy, 75 Rue General-Fauconnet, Dijon, Cote-d'Or, France
Filed May 15, 1967, Ser. No. 638,205
Claims priority, application France, Dec. 23, 1966, 9,617
Int. Cl. G05g *1/10, 11/00, 5/06*
U.S. Cl. 74—470 **10 Claims**

Change speed control device for a derailleur gear system, wherein a chain displacing cable control lever and a plate are mounted for pivotal movement through an arc delimited by stops, said control lever and plate being independently movable to permit the system to be tensioned and detensioned respectively before and after a gear change effected by chain displacement against spring influence, there being a spring-loaded ball carried by the lever and corresponding apertures in the plate to locate



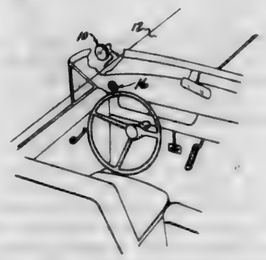
said lever in any one of a number of gear selecting positions in which the ball is received in a corresponding aperture.

3,442,149
HAND MANIPULATED CONTROL FOR OPERATING MOTOR VEHICLES
Frederick S. Schwendenmann, 10123 Tecumseh, Detroit, Mich. 48239
Filed Sept. 22, 1967, Ser. No. 669,812
Int. Cl. G05g *11/00*
U.S. Cl. 74—481 **4 Claims**



A hand manipulated control for operating motor vehicles which consists of a bracket mountable under the instrument panel supporting an operator arm adjacent the steering wheel. Lost motion linkage operatively connected to the operator arm, is attachable to the brake lever and accelerator pedal respectively, so that the same may be separately and selectively operated.

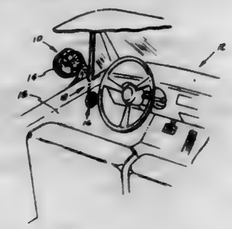
3,442,150
REMOTE CONTROL APPARATUS
Frederick A. Brawner, Detroit, and Lawrence H. Smith, Bloomfield Hills, Mich., assignors to Lee Radke Associates, Inc., Detroit, Mich., a corporation of Michigan
Filed June 29, 1966, Ser. No. 561,467
Int. Cl. B60r *1/06*
U.S. Cl. 74—501 **13 Claims**



A remote control mirror apparatus for an exteriorly positioned automotive rear view mirror wherein the

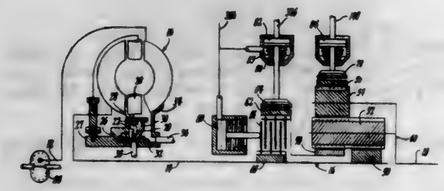
mirror is adjustable about a pivotal support by means of a depressed pivotal button mounted in the interior of the vehicle.

3,442,151
REMOTE CONTROL APPARATUS
Frederick A. Brawner, Detroit, Lawrence H. Smith, Bloomfield Hills, and William L. Pringle, Grosse Pointe Shores, Mich., assignors to Lee Radke Associates, Inc., Detroit, Mich., a corporation of Michigan
Continuation-in-part of application Ser. No. 561,467, June 29, 1966. This application June 12, 1967, Ser. No. 645,155
Int. Cl. B60r 1/06
U.S. Cl. 74—501 10 Claims



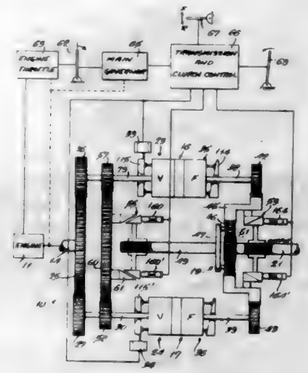
A mirror assembly for automobiles or the like including a pivotally mounted mirror member, a remotely positioned pivotally mounted actuating member and a plurality of cables connecting the mirror member to the actuating member for mirror adjustment. The pivotal mounts on the mirror member and on the actuating member each comprise a similar member, and the pivotal actuating member is disposed substantially within the vehicle door surface for safety.

3,442,152
TRANSMISSION AND CONTROLS
Howard E. Chana, Flint, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Original application June 18, 1964, Ser. No. 376,111, now Patent No. 3,401,581, dated Sept. 17, 1968. Divided and this application June 5, 1968, Ser. No. 734,655
Int. Cl. F16h 39/44, 39/50, 47/00
U.S. Cl. 74—645 5 Claims



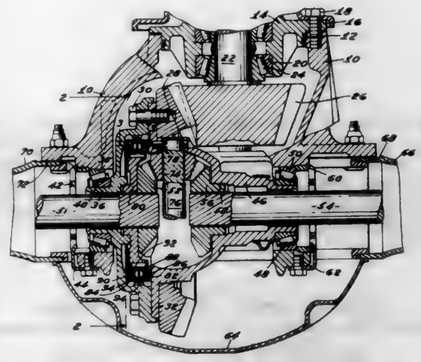
The transmission shown has a torque converter with a motor for variably positioning the blades for varying hydrodynamically the torque multiplication of the converter and a multiratio gear unit having fluid motors for selectively establishing a plurality of ratio drives. A control system to control the supply of fluid to the motors operative with increasing torque demand to provide in a low range of torque demand, relatively low torque multiplication in said torque converter and gearing, in an intermediate range of torque demand relatively high torque multiplication in the torque converter and relatively low torque multiplication in the gearing and in a high range of torque demand, a relatively high torque multiplication in both the converter and gearing.

3,442,153
HYDROSTATIC TRANSMISSION
William A. Ross, Rockford, Ill., assignor to Sundstrand Corporation, a corporation of Delaware
Filed May 8, 1967, Ser. No. 636,818
Int. Cl. F16h 47/04
U.S. Cl. 74—687 23 Claims



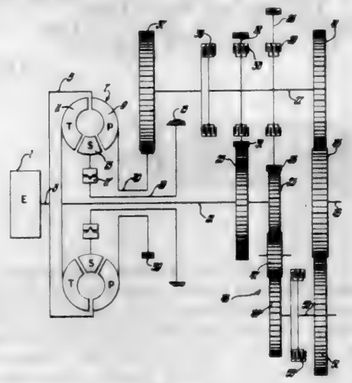
A hydraulic control for a transmission having plural power paths through a hydraulic drive and differential gearing, the control having a shift valve responsive to control fluid pressure indicating the displacement of one of the hydraulic units in the hydraulic drive for controlling clutches which select the power path through the transmission.

3,442,154
HIGH TRACTION DIFFERENTIAL GEAR UNIT FOR WHEELED VEHICLES
Waldemar R. Kotoucek, Detroit, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed June 28, 1967, Ser. No. 649,688
Int. Cl. F16h 1/44
U.S. Cl. 74—710.5 5 Claims



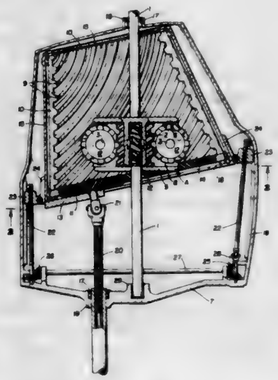
A positive traction, limited slip differential gear unit having a carrier, a pair of side gears, each side gear being connected to one of two aligned axle shafts, differential pinions carried by the carrier in meshing engagement with the side gears, and a torque bias clutch connecting the carrier to one of the side gears, said clutch comprising a cam plate which carries cam balls and a cam ring supported by a ring of yieldable material which permits restrained relative motion between the cam plate and the side gear thereby establishing a torque bias.

3,442,155
COUNTERSHAFT TRANSMISSION
William B. Clark, Acton, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 2, 1966, Ser. No. 591,499
Int. Cl. F16h 47/06
U.S. Cl. 74—720 5 Claims



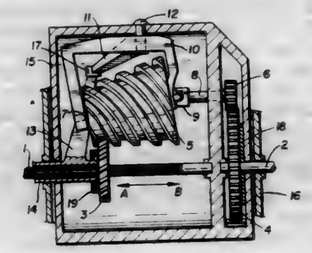
Power transmission in which there is torque converter drive of a countershaft coupled to the transmission output through low and intermediate speed gearsets. There is an all-mechanical drive of the countershaft for higher speed operation. Reverse drive gearing is driven by the converter and each range is established by the engagement of an associated clutch.

3,442,156
INFINITELY VARIABLE SPEED GEAR TRANSMISSION
Harry E. Novinger, 1 Parkway Drive, Englewood, Colo. 80110
Filed Mar. 7, 1966, Ser. No. 535,639
Int. Cl. F16h 57/10
U.S. Cl. 74—793 17 Claims



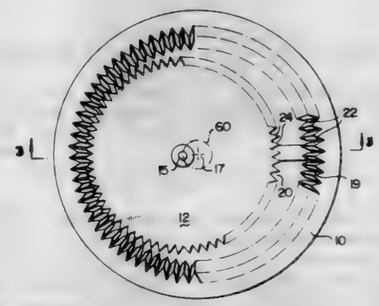
This invention pertains to the use of gear mechanisms for steplessly varying the speed of an output shaft from neutral rotation to higher ratios of rotation relative to the rotation of an input shaft. The input shaft drives a conical drive gear having an internal surface comprised of curved teeth of uniform size and equidistantly spaced throughout their lengths. An output gear unit is variably located within the conical drive gear and consists of a helical gear fixed to the output shaft and a plurality of helical gears mounted about the gear fixed to the output shaft. The drive gear and the output gear unit are supported at variable angles in respect to each other so as to maintain mesh between a portion of the plurality of helical gears and the drive gear that result in steplessly varying the ratio of turn of the output shaft from neutral to aproximate that of the drive gear.

3,442,157
INFINITELY VARIABLE SPEED GEAR TRANSMISSION
Harry E. Novinger, 1 Parkway Drive, Englewood, Colo. 80110
Continuation-in-part of application Ser. No. 605,296, Dec. 28, 1966, which is a continuation-in-part of application Ser. No. 535,639, Mar. 7, 1966. This application Dec. 11, 1967, Ser. No. 689,529
Int. Cl. F16h 3/44
U.S. Cl. 74—793 2 Claims



This invention pertains to use of two interconnected planetary gear mechanisms for steplessly varying the speed of an output shaft from neutral rotation to 1:1 ratio relative to an input shaft; the stepless change being governed by a novel type planetary gear in one embodiment, and by hydraulics in another embodiment.

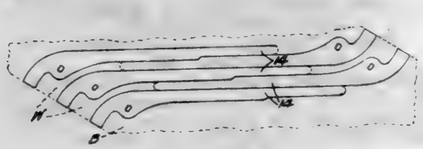
3,442,158
STEPLESS VARIABLE TRANSMISSION
Ernst Marcus, Casilla 258, La Paz, Bolivia
Filed Mar. 21, 1967, Ser. No. 624,911
Int. Cl. F16h 15/50
U.S. Cl. 74—796 11 Claims



Gear reduction is achieved between two cooperating inner and outer ring gears, the inner one of which is eccentrically positioned relative to the axis of rotation of the other, the frictional or toothed surfaces of the gears being conically shaped and arranged for relative axial motion with continuous contact therebetween, such that the outer

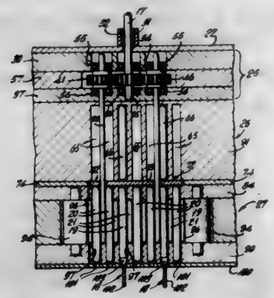
gear presents a variable diameter of cooperating surface to the inner gear as the two gears undergo relative axial movement.

3,442,159
METHOD OF MAKING PLIERS
Walter L. Sarvie, R.R. 3, Alexandria, Minn. 56308
Filed Nov. 17, 1966, Ser. No. 595,107
Int. Cl. B21k 5/00; B21d 37/14
U.S. Cl. 76—101 3 Claims



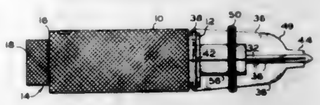
1. A method of making pliers of the type including a pair of lever type handle members pivotally connected together and each having jaw portions integrally formed with one end thereof, said method comprising simultaneously stamping a pair of handle members from a substantially flat blank, said handle members of each stamped pair extending in opposite directions, at least the major portion of the length of each simultaneously stamped pair of handle members having a common mating surface, thereafter shaping the jaw portion of each handle member to increase the width of the gripping surface thereof and forming gripping teeth at said gripping surface.

3,442,160
MULTIPLE DRILL HEAD
William J. Roantree, Port Washington, N.Y., assignor to Roantree Electro-Mech Corporation, Port Washington, N.Y., a corporation of New York
Filed Apr. 18, 1967, Ser. No. 631,780
Int. Cl. B23b 39/16, 47/06; B27c 3/04
U.S. Cl. 77—22 15 Claims



A drill head for drilling a plurality of holes. A plurality of elements including drills having circular cylindrical shanks, dummies (circular cylindrical bodies selectively replacing the drill shanks), circular cylindrical idlers, and a driven member or members having portions similar to the idlers are arranged in a cluster with the drills located at the desired positions. The drill shanks, dummies, idlers, and driven members (herein called "driven idlers") are so arranged that the peripheral surfaces of every pair of engaging elements travel in the same direction. Driving torque is imparted to each of the drills by one or more driven idlers through the rolling contacts between the serially engaged elements. The described manner of driving the drills permits the drilling of a plurality of holes with very close center spacings.

3,442,161
CERAMIC DRILL
Norman E. Moyse, 17168 SW. Fernwood Drive, Lake Oswego, Oreg. 97034
Filed Dec. 14, 1965, Ser. No. 513,707
Int. Cl. B23b 51/18; B25f 1/02
U.S. Cl. 77—66 7 Claims



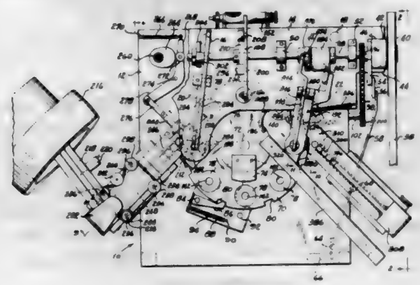
A ceramic drill including a tubular handle and four equally spaced, thin drill blades pivoted to the handle. A slotted slide member within the handle receives the blades within the slots, whereby the blades prevent rotation of the slide. A coil spring encompassing the blades urges camming surfaces of the blades against camming surfaces of the slide. A rotatable adjustment member extending from a rear end of the handle threadedly engages the slide so that rotation of such member slides the slide member axially and thus expands or retracts the blades. A centering pin extends longitudinally between the blades and through the slide, and is fixed to the adjustment member.

3,442,162
DEBURRING TOOL
Glen H. Cogsdill, 48449 W. 9 Mile Road, Northville, Mich. 48167
Continuation-in-part of application Ser. No. 393,965, Sept. 2, 1964. This application Jan. 6, 1965, Ser. No. 423,706
Int. Cl. B23b 51/10; B23d 77/00
U.S. Cl. 77—73.5 16 Claims



1. A deburring tool comprising a cylindrical body having a through slot of uniform width at one portion thereof extending axially to one end of the body to provide a pair of spring arms which are adapted to flex toward each other, the opposite end of said body having a bore therein extending into said slot, a plunger in said bore projecting into said slot for varying the effective length of the slot and means for retaining the plunger in fixed position within said bore and slot comprising means on the plunger slidably engaging said bore with sufficient frictional contact to retain the plunger in an axially adjusted position.

3,442,163
BUTTON ASSEMBLING MACHINE
Bernard D. Chalfin, Tenafly, and Richard J. Peterson, Paramus, N.J., assignors to C & C Button & Trimming Co., Inc., New York, N.Y., a corporation of New York
Filed Dec. 8, 1966, Ser. No. 600,125
Int. Cl. D04d 7/04
U.S. Cl. 79—5 26 Claims

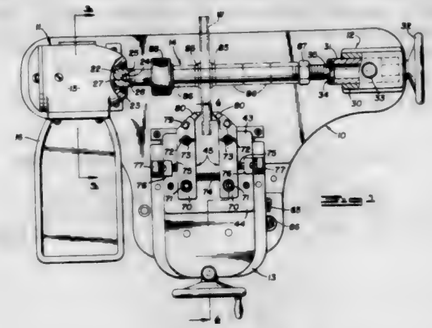


Our invention relates to the art of assembling covered-buttons, each of which comprises a back inserted into a shell and adapted to draw a cover of fabric or the like over the shell face during the assembly operation and to clamp the cover material between the shell wall and the back.

More particularly, we provide an automatic covered-button assembling apparatus in which we successively step an element having a bore slightly larger than the button diameter and formed with a fabric blank retaining recess at the top of the bore wall to a first station at which a cover blank is cut and placed in the recess, then to a second station at which a shell is inserted open end up into the bore to draw the fabric over the shell face and frictionally to retain the blank and shell in the bore. The element is then stepped to a third station at which a back is automatically inserted into the shell and then crimped to complete the button which is then ejected. We preferably provide a plurality of elements carried by one movable member with respective elements registering with the various stations to permit the assembly operations to be performed concomitantly. Our machine is readily adapted to handle buttons of a wide range of thicknesses, profiles and diameters. It is easily converted to semi-automatic operation, such as may be required when it is necessary or desirable for the operator to handle the cover material.

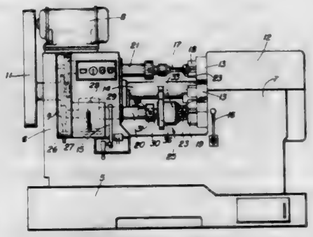
3,442,164
BRAKE DISC LATHE
William J. Blazek, New Lexington, Ohio, assignor, by mesne assignments, to Bear Manufacturing Company, Rock Island, Ill., a corporation of Delaware
Filed Oct. 19, 1966, Ser. No. 587,766
Int. Cl. B23b 5/02, 21/00
U.S. Cl. 82—2 5 Claims

Brake disc lathe having a rotary headstock, a tailstock, an arbor shaft rotatably supported on the headstock and tailstock coaxially therewith and rotated by the headstock, means on the arbor shaft for supporting a brake disc with its faces perpendicular to the axis of rotation of the shaft, a slide movable on an axis perpendicular to said axis of rotation, slide supporting means concentric with the axis of slide movement for centered support thereof on said axis, and a pair of cutting tools on the slide engageable with the opposite faces of a brake disc for simultaneously facing both of its said faces, said tools being spaced equal distances to opposite sides of the



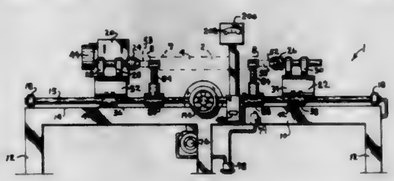
axis of movement of the slide for fully balanced and accurate facing of the disc.

3,442,165
TURNING FIXTURE FOR GENERATING POLYGONAL SHAPES
Henry R. Billeter, Deerfield, Ill., assignor to Sloan Valve Company, Chicago, Ill., a corporation of Illinois
Filed Jan. 23, 1967, Ser. No. 610,941
Int. Cl. B23b 3/28; B23p 23/02; B23c 1/14
U.S. Cl. 82—18 9 Claims



This invention is concerned with a novel turning fixture for use in an automatic chucking machine for forming polygonal flat surfaces upon a valve body in which a series of cutting tools are rotated around a stationary held valve body.

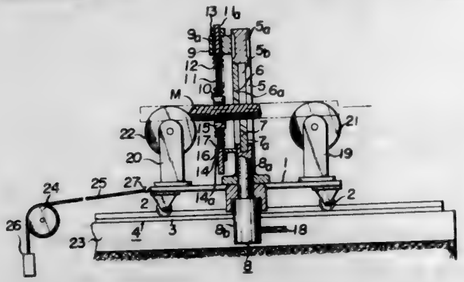
3,442,166
ROLLER TRIMMING AND CENTERING APPARATUS
Grady E. Pope and Jesse D. Armstrong, Jr., Overland Park, Kans., assignors to American Superior Rubber Roller Company, Kansas City, Mo., a corporation of Missouri
Filed Aug. 29, 1966, Ser. No. 575,617
Int. Cl. B23b 5/14, 5/28
U.S. Cl. 82—101 11 Claims



Apparatus for reconditioning rubber covered printing rollers and the like includes a frame having a central reference plane and head and tail stock means on the frame

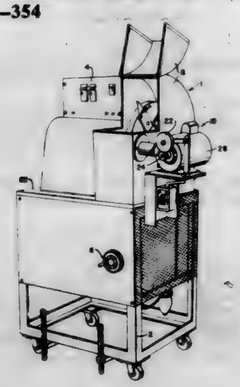
and associated with adjusting means for selectively simultaneously moving the head and tail stock means toward and away form the reference plane while maintaining equally spaced relation to the reference plane. Similar structure is provided to control the positioning of guide means for holding trimming tools.

3,442,167
TRAVELLING SHEAR
Atsushi Ohmasu, 7020 Sannoya, Isogomachi, Isogo-ku, Yokohama-shi, Japan
Filed May 13, 1966, Ser. No. 549,995
Int. Cl. B23d *25/02, 25/04;* **B26d** *1/56*
U.S. Cl. 83—308 **4 Claims**



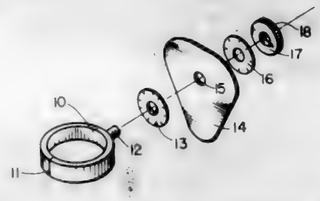
A table or carriage on rollers moves longitudinally on guide rails along the path of movement of a cable to be cut. Two longitudinal speed rollers on standards on the top of the carriage support the cable in its path. A pair of shearing cutter blades are carried on a vertical frame on the table, between the two top rollers, and are disposed for vertical reciprocating movement on opposite sides of a cable. A pair of vertically reciprocable holder clamps are supported on and movable with the frame and are disposed slightly behind the cutters to hold the forward end of the remaining feed cable after the measured piece to be cut has been severed, the clamps and the cutter blades moving jointly.

3,442,168
CUTTING-MEANS FOR CONTINUOUSLY FED MATERIALS
Charles Gatto, 134 Rome St., Farmingdale, N.Y. 11735
Filed July 19, 1966, Ser. No. 569,550
Int. Cl. B26d *5/20, 7/06*
U.S. Cl. 83—354 **14 Claims**



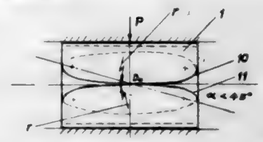
A device for separating an elongated material into sections of predetermined lengths having a cutting knife that is moved into and out of cutting position by an operating structure.

3,442,169
GUITAR PICK HOLDER
Charles E. Bowers, 945 E. Nora St., Spokane, Wash. 99207
Filed Oct. 10, 1967, Ser. No. 674,197
Int. Cl. G10d *3/16*
U.S. Cl. 84—322 **2 Claims**



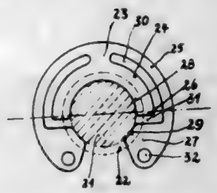
A ring type device adapted to releasably and adjustably position a guitar pick of commerce in one of the habitually familiar playing positions relative the fingers of a player. The holder may be deformably configured to adapt it to various fingers. The guitar pick is releasably attached to the holding ring in a particular mounting fashion to provide clear tone, interchangeability and adjustable positioning of pick.

3,442,170
SLEEVE ADAPTOR
Wilhelm Röder, Kronberg, Taunus, and Ludwig G. Lang, Darmstadt, Germany, assignors to Fa. Röder Präzision, Wilhelm Roder, Egelsbach-Flughafen, Germany
Filed Oct. 5, 1967, Ser. No. 673,163
Int. Cl. F16b *19/02, 13/12*
U.S. Cl. 85—8.3 **9 Claims**



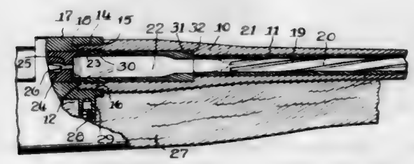
A split sleeve adaptor having a longitudinal slit transversing from one end of the sleeve cylinder to the other. At least one edge of said slit is developed to provide a curved or rolling track for cooperation with the remaining edge of said slit. Such a sleeve construction results in more even distribution of stresses throughout the sleeve and its cooperating members and facilitates reuse of the sleeve.

3,442,171
UNILATERALLY OPEN SAFETY CLIP
Walter Engelmann, Goppingen, Germany, assignor to Fibora AG, Zurich, Switzerland
Filed May 4, 1966, Ser. No. 547,462
Claims priority, application Germany, May 7, 1965, E 29,255; Sept. 10, 1965, E 30,076
Int. Cl. F16b *19/00, 21/00*
U.S. Cl. 85—8.8 **6 Claims**



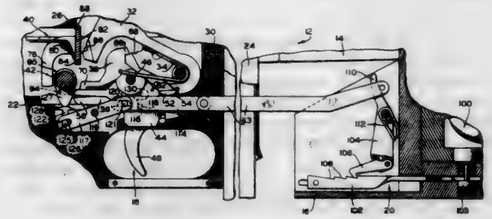
A safety clip, open at one end, and to be tightly clamped in an annular groove of a cylindrical member which comprises a relatively rigid part that extends over an angle of approximately 180° and is intended to engage in the annular groove, and arm portions provided at their ends with resilient retaining tongues for preventing the clip from unintentional removal from the cylindrical member. The retaining tongues may be separated from the arm portions by slots, notches or cut-outs.

3,442,172
GUN BARREL LINER
Ralph F. Wehrmann, North Chicago, and Roy H. Lorenz, Arlington Heights, Ill., assignors to Fansteel Inc., a corporation of New York
Filed Mar. 13, 1959, Ser. No. 799,386
Int. Cl. F41f *17/08;* **C22c** *31/00*
U.S. Cl. 89—16 **6 Claims**



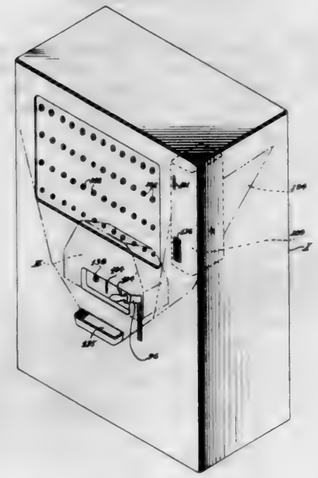
1. A liner for a gun barrel and to be secured within the gun barrel, comprising a substantially tubular member of columbium base metal having a hardness as read on a Rockwell A scale substantially in the range of from about Ra 40 to about Ra 70, said member of columbium base metal being formed of an alloy with oxygen, the oxygen added to the columbium base metal in the alloy being present in the range of from about 0.15 percent by weight to about 0.55 percent by weight.

3,442,173
COMBINED RIFLE AND GRENADE LAUNCHER WEAPON SELECTIVELY FIRED BY A SINGLE TRIGGER
James H. Muller, Jefferson, Ky., assignor to the United States of America as represented by the Secretary of the Army
Filed May 28, 1968, Ser. No. 732,586
Int. Cl. F41d *11/02, 7/00*
U.S. Cl. 89—127 **9 Claims**



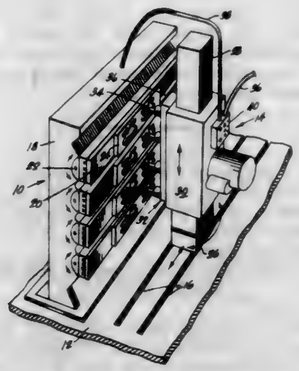
In a weapon including a rifle unit adapted for selective automatic and semi-automatic fire and a grenade launcher unit designed for successively firing a plurality of grenades without reloading, a trigger mechanism releasably connects the firing mechanism of the launcher to the rifle trigger for operation thereby and displaces the trigger relative to the rifle sear so that the rifle firing mechanism is inoperable by the trigger when the weapon is selected for grenade firing. Selection of the different firing operations is effected by a single rotary selector-safety which also acts to make the weapon safe against accidental discharge.

3,442,174
KEY-BLANK DISPENSER-AND-CUTTER APPARATUS
Nathan Weiner, Swampscott, and Irving Marcus, Arlington, Mass., assignors to Vend-A-Key Corporation, Skokie, Ill., a corporation of Delaware
Filed Nov. 24, 1961, Ser. No. 154,412
Int. Cl. B23c *1/16*
U.S. Cl. 90—13.05 **16 Claims**



This disclosure deals with a novel combined key blank dispenser and cutter apparatus having means for rendering the appropriate key accessible and automatically, when in position, effecting contouring of the same to cut an appropriate blank.

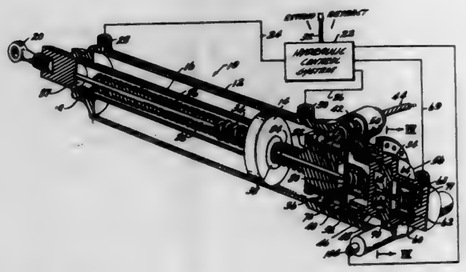
3,442,175
MULTIPLE AXIS MILLING APPARATUS
Forrest J. Heap, Huntington Beach, and Richard A. Myers, Rolling Hills Estates, Calif., assignors, by mesne assignments, to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland
Filed May 3, 1966, Ser. No. 547,238
Int. Cl. B23c *1/00, 3/00, 7/00*
U.S. Cl. 90—15 **13 Claims**



Mill head of apparatus is vertically extending box-like housing having central drive spindle and preferably two

or more driven spindles above and below it, all extending horizontally toward workpieces. Elongate hollow pulley on each spindle serves as flywheel to eliminate tool chatter. Separate flexible belt drive from drive spindle to each driven spindle is quiet and also eliminates tool chatter. At least one pulley smaller than at least one other to inhibit resonance. Automatic tool changer has means to restain draw bolt while spindle rotates to connect and disconnect tools with no hand operation.

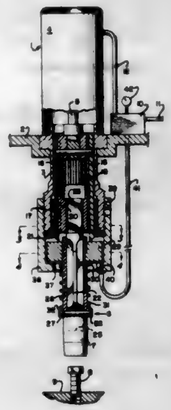
3,442,176
ACTUATOR LOCKING MECHANISM
Howard M. Geyer, Dayton, Ohio, assignor to General Electric Company, a corporation of New York
Filed May 1, 1967, Ser. No. 635,018
Int. Cl. F15b *15/26*
U.S. Cl. 91—44 **14 Claims**



The disclosure shows an actuator comprising a cylinder and a piston displaceable therein to extend and retract a piston rod. A rotatable screw shaft is journaled in the cylinder to cooperate with an acme nut in the actuator piston for synchronizing the displacement of the piston rod with piston rods of a plurality of actuators through a suitable mechanical interconnection. A locking mechanism, provided for the piston and piston rod, comprises a circular ratchet plate mounted in the actuator chamber and a circular ratchet plate mounted on and rotatable with the screw shaft, but displaceable towards ratchet plate. A pair of springs act on the ratchet plate to automatically engage the ratchet plates when the actuator piston rod is almost to a completely retracted position to lock the piston rod securely in that position. Through a hydraulic piston arrangement, the force of the spring urging the ratchet plates into engagement is overcome and the plate separated to permit displacement of the piston. Once the piston rod is extended beyond a point closely adjacent the end of the cylinder, the spring holds the ratchet plates apart thereby preventing inadvertent engagement of the ratchet plates to lock the movement of the pistons while the piston rod is being extended.

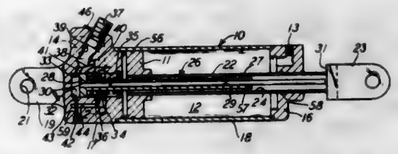
3,442,177
TORQUE CONTROL SYSTEM
Otmar M. Ulbing, Berkshire, N.Y., and Zenonas Katarskas, South Waverly, Pa., assignors to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed May 2, 1967, Ser. No. 635,496
Int. Cl. F01c *21/12*
U.S. Cl. 91—59 **8 Claims**

A power wrench having an automatic torque-responsive system for shutting off the wrench when a fastener reaches a predetermined torque load. The system includes a control air system having a torque-responsive valve mechanism which is normally open to bleed the control air continuously and which closes when the torque load on the fastener reaches the predetermined torque load magnitude. The closing of the torque-responsive valve



mechanism creates a signal which closes a motor control valve to stop the motor of the power wrench.

3,442,178
HYDRAULICALLY ACTUATED STOP FOR A HYDRAULIC RAM UNIT
Guy L. Daniels, deceased, late of Franksville, Wis., by Herbert H. Peters, administrator, Wauwatosa, Wis., assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed Aug. 21, 1967, Ser. No. 662,197
Int. Cl. F15b *13/042, 15/22;* **F01b** *11/02*
U.S. Cl. 91—403 **5 Claims**

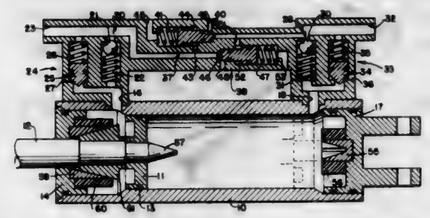


A hydraulically actuated stop for a hydraulic ram unit including a cylinder with a piston movable in a chamber defined by the cylinder. Fluid passageways exist in opposite ends of the cylinder, and a valve is operative intermediate one of the passageways and the cylinder chamber for closing off the passageway and thereby creating an increase in fluid pressure on one side of a piston slidable in the chamber. The increased fluid pressure limits the stroke of the piston, as desired. The valve is located in a bore which provides flow communication between the one passageway and the cylinder chamber, and the valve responds to pressure in a compartment on one side of the valve, and this fluid pressure causes the valve to close the one passageway, as desired.

3,442,179
DOUBLE-ACTING EXPLOSIVE ACTUATOR
Robert C. Comer, Rockaway Borough, N.J., assignor to Astrosystems International, Inc., a corporation of New Jersey
Filed Oct. 18, 1967, Ser. No. 676,220
Int. Cl. F15b *11/08, 13/04;* **F01b** *11/02*
U.S. Cl. 91—420 **6 Claims**

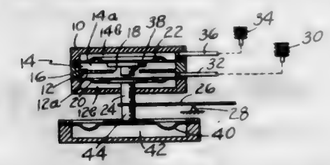
A double acting linear motor means is described for conversion of constant or explosive gas pressure into linear mechanical motion. The mechanism includes a

piston within a hollow cylinder for actuation in either direction by a pressurized gas which may be the result of an explosion, the application of a gas produced by a thermal process, such as steam, or a gas under pressure which is stored in storage tanks and delivered to the actuator by



means of controlled valves. One of the features of the actuator includes a cushioning means at the end of each stroke to prevent excessive impact on the cylinder head and to prevent damage to other mechanisms coupled to the actuator.

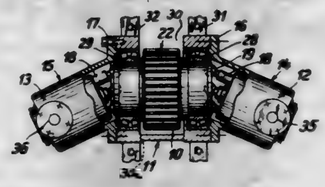
3,442,180
FAIL SAFE SENSING DEVICE
George M. Babic, West Hartford, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed June 28, 1966, Ser. No. 561,226
Int. Cl. F01b *19/04*
U.S. Cl. 92—48 **25 Claims**



A fail safe condition sensor comprising a first diaphragm which is deflected in accordance with the condition to be sensed, the first diaphragm being operatively connected to an output shaft, and a second diaphragm which is normally isolated from the first diaphragm output connection. Isolation of the second diaphragm is accomplished by subjecting the opposite sides thereof to one or more conditions to be sensed. Failure of the first diaphragm or the primary condition sensing device associated therewith results in the moving of the second diaphragm into mechanical connection with the first diaphragm output shaft whereby the sensor unit will remain operative.

3,442,181
HYDROSTATIC AXIAL PISTON TRANSMISSION ASSEMBLY
Wilhelmus Franciscus Theodorus Carolus Olderaan, Gouda, Netherlands, assignor to Metaalbedrijf Rademakers N.V., Rotterdam, Netherlands
Continuation-in-part of application Ser. No. 514,934, Dec. 20, 1965, now abandoned. This application Nov. 24, 1967, Ser. No. 685,347
Claims priority, application Germany, Dec. 22, 1964, M 63,588
Int. Cl. F01b *13/04;* **F16d** *31/06;* **F04b** *1/02*
U.S. Cl. 92—57 **6 Claims**

A hydrostatic piston engine including a primary supporting cylindrical tubular casing upon which cylindrical blocks are mounted for equal angular relationship to the casing, and a drive shaft mounted therein. The cylindrical portion of the casing absorbing bending moments, and



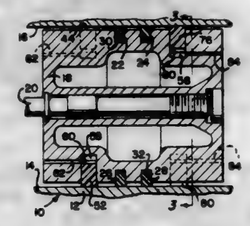
having a power output opening, or openings, defined therein at the location, or locations, of neutral bending moment within the cylindrical casing.

3,442,182
TUBULAR HOUSING STRUCTURES
Frank Eustace Brittain, Chasetown, near Walsall, England, assignor to Girling Limited, Birmingham, England, a British company
Filed May 12, 1967, Ser. No. 638,116
Claims priority, application Great Britain, May 19, 1966, 22,218/66
Int. Cl. F16j *3/00*
U.S. Cl. 92—99 **4 Claims**



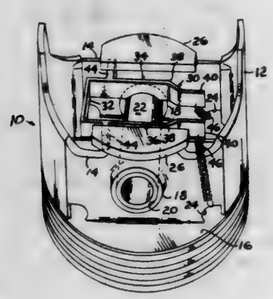
The invention relates to a booster housing primarily for use in servo assisted vehicle brake systems, the housing being constructed in two parts which are secured together in axially aligned relation. A locking ring is provided to lock the housing parts in their secured condition and engages over radially outwardly directed flanges formed on the housing parts where they butt together. The locking ring at one side axially overhangs one of the flanges and is provided at its other side with abutment means engaging the adjoining flange. The overhanging side of the locking ring is locally deformed to present locking means which on rotation of the ring relative to the housing parts cooperate with the other flange to urge the two flanges axially towards one another to hold the housing parts in secured relation. The said other flange is shaped to accept the locking ring by permitting axial movement thereof relative to the housing parts in one rotational position of the ring, the locking means becoming effective when said ring is turned out of said rotational position.

3,442,183
PISTON SUPPORTING MEANS
Frank D. Howe, Painted Post, Joseph P. Swift, Hammondsport, and Allen D. Groves, Painted Post, N.Y., assignors to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Oct. 10, 1967, Ser. No. 674,222
Int. Cl. F01b *31/00*; F16j *1/06*
U.S. Cl. 92—184 12 Claims



A reciprocating piston movably disposed in a cylinder bore and including a plurality of circumferentially spaced, peripheral grooves each slidably containing a supporting element. The supporting elements each include a surface peripherally defining a chamber in their respective one of the grooves and are biased into engagement with the wall bounding the cylinder bore to thereby support the piston in the cylinder bore.

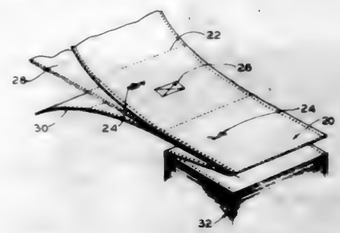
3,442,184
PISTON PIN SILENCER
Arnold J. Pritchard, Box 614, Carnegie, Okla. 73015
Filed Sept. 15, 1967, Ser. No. 667,988
Int. Cl. F16j *1/14*
U.S. Cl. 92—187 5 Claims



A substantially U-shaped bracket straddles the piston connected end of a piston rod and is fulcrumed against the piston pin by a projection, extending laterally of the respective leg of the bracket adjacent its bight portion, which contacts the upper surface of the respective piston pin reinforcing lug while the free end portions of the bracket legs are resiliently connected by springs with an edge forming an aperture in the piston wall adjacent the piston ring land.

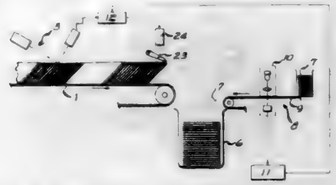
3,442,185
CONTINUOUS METHODS FOR PRODUCING MAILABLE MATERIALS
Eugene J. Buescher, 2229 Entity Ave., St. Louis, Mo. 63114
Filed June 26, 1967, Ser. No. 648,894
Int. Cl. B31b *1/88, 1/14, 1/36*
U.S. Cl. 93—61 8 Claims

A method for producing mailable materials comprising printing messages on continuous data process forms, separating the layers of the forms into individual sheets containing a message, positioning the individual sheets in substantially complete alignment, cutting said sheets to produce an unformed material and forming unformed material into a mailable container. Another aspect of the



invention comprises an envelope formed and perforated in a manner to enable the detachment of a part of the envelope and removal of a message which was originally an integral part of the envelope.

3,442,186
METHOD FOR AUTOMATIC SORTING
Minoru Hirose, Hyogo, Taneji Kishioka, Osaka, and Hajime Shibanuma, Hyogo, Japan, assignors to Hamada Printing Press Mfg. Co., Ltd., Osaka, Japan
Filed Oct. 11, 1966, Ser. No. 585,918
Claims priority, application Japan, June 18, 1966, 41/39,427; Aug. 24, 1966, 41/56,009
Int. Cl. B65h *33/16, 33/18*
U.S. Cl. 93—93 9 Claims



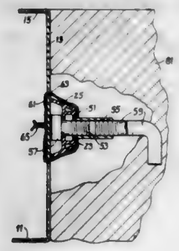
1. A process for automatic control of newspaper and other printed matter characterized by constantly detecting the number of copies of the newspaper or other printed matter being continuously fed out from a rotary or other printing machine by way of the shadow or difference in darkness formed between the folded edge of each sheet of said newspaper or other printed matter and the leading edge of the immediately preceding sheet, guiding the sheets in a continuous flow on a single plane which may be either horizontal or mildly inclined, said sheets remaining in the same partially overlapped position as they are initially placed on said plane, causing memory means to memorize a programmed control information containing such sorting items as the destinations and number of copies of the newspaper or other printed matter to be shipped and other information, feeding the memorized information to direction means, controlling the values detected as above of the newspaper or other printed matter by control means based on the directions provided by said direction means, sorting the flow of said sheets based on said control so as to make bundles of said newspaper or other printed matter, controlling and sorting and delivery operations of a sorting and delivery carrying system by means of said control means, thereby allowing each of the bundles to select a predetermined one of the shipping junctions provided on said delivery carrier system, and loading the bundles from said shipping junctions into trucks or other vehicles parked alongside said junctions, each of said trucks or other vehicles being destined to carry the bundles sorted out as above.

3,442,187
SHIFTABLE ROAD PATH LIMITING STAKE
Josef Hausegger, 8563 Ligist Nr. 63, Styria, Austria
Filed Aug. 1, 1966, Ser. No. 569,444
Claims priority, application Austria, Aug. 12, 1965, A 7,435/65
Int. Cl. E01f *9/00*
U.S. Cl. 94—1.5 6 Claims



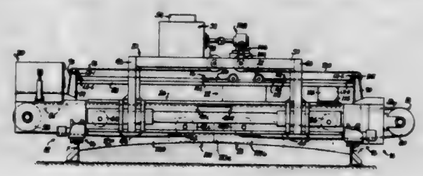
A shiftable road path limiting stake having a tubular upper part and base part connected by a flexible pulling member spring means including two leg portions passing through two pairs of bores in the bearing surfaces of the parts and connected at their corresponding ends in each part for providing a force which returns the parts to their original position after any displacement.

3,442,188
KEYWAY STRIP FOR CONCRETE PAVEMENT FORMS
James A. Rappas, 101 Hampton Parkway, Kenmore, N.Y. 14217
Continuation-in-part of application Ser. No. 551,401, May 19, 1966. This application May 31, 1968, Ser. No. 733,629
Int. Cl. E04c *23/04, 11/02*
U.S. Cl. 94—39 16 Claims



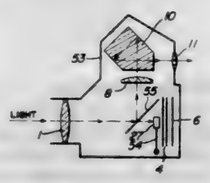
A keyway strip, preferably of extruded plastic material, is of generally trapezoidal form, with a front wall, two side walls extending obliquely rearwardly from opposite edges of the front wall and diverging from each other, and a rear wall parallel to the front wall and connecting the diverging side walls to each other intermediate their length so that when the rear edges of the side walls are laid against a concrete form, the rear face of the rear wall will be spaced a substantial distance from the concrete form, to provide space for receiving the head of a bolt which holds a dowel pin in place while concrete is being poured around it, with no need for the bolt to extend through the concrete form itself. Strengthening webs are also provided between the front wall and the rear wall of the keyway strip, these webs serving, in combination with the front and rear walls, to provide a rectangular channel for receiving a dowel member extending from one section of keyway strip into the end of the next section thereof, to keep adjacent sections in alinement with each other. When the strip is to be used for slip form paving, thin clips attached to the concrete form hold the keyway strip tight against the form without the need for wiring or bolting the keyway strip to the form, and tie rods within the channel at the rear of the keyway strip connect one section of strip to the next adjacent section to anchor it against longitudinal movement when the concrete form is slipped or dragged longitudinally along the partially hardened concrete to a new location for pouring additional concrete.

3,442,189
CONCRETE SPREADER
Maurice E. Robinson, Livonia, and Robert E. Jokinen, Taylor, Mich., assignors to Cleveland Equipment Corporation, Garden City, Mich., a corporation of Michigan
Filed Sept. 15, 1966, Ser. No. 579,667
Int. Cl. E01c *19/48*; B65g *15/00, 17/00*
U.S. Cl. 94—46 6 Claims



Apparatus for spreading concrete onto a road bed and including a carriage having a central frame and extensible and retractable side frames. The carriage supports an endless belt which has a carrying run that is at all times coextensive with the length of the frame and a traveling plow having drive means which are extensible and retractable to accommodate adjustment of the side frames on the central frame.

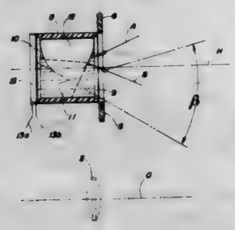
3,442,190
PHOTOGRAPHIC APPARATUS
Roger D. Erickson, Littleton, Colo., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed July 21, 1965, Ser. No. 573,590
Int. Cl. G01j *1/52*
U.S. Cl. 95—10 1 Claim



Automatic exposure control in a single lens reflex camera wherein a photocell having a memory initially views through the taking lens the light from the scene to be photographed. When the camera shutter is manually opened, the viewing mirror moves up and blanks the

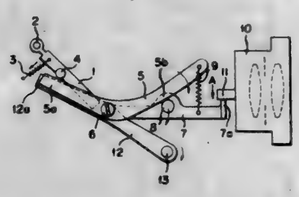
photocell which is then electrically switched into a timing circuit which closes the shutter at the end of a time period determined by the resistance memory of the photocell and hence by the intensity of the light which the photocell received before being blanked.

3,442,191
OPTICAL MEANS FOR CONTROLLING ACCEPTANCE ANGLE OF A PHOTORESPONSIVE DEVICE
Donald M. Harvey, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed May 27, 1966, Ser. No. 553,432
Int. Cl. G01j 1/06; G02f 1/34
U.S. Cl. 95—10 5 Claims



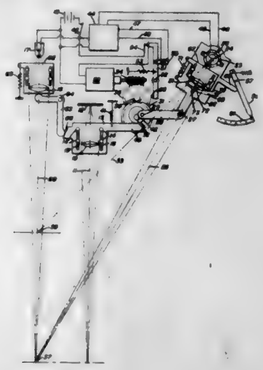
In a camera having a lens with an optical axis and an automatic exposure control device, the effect of high back lighting on the device is controlled by using optical means including a transparent chamber having a gas bubble which floats in a liquid. When the camera is rotated about the optical axis of the lens, the position of the bubble changes with respect to the exposure control device to thereby control the field of view through which light is provided to the device.

3,442,192
MANUAL MIRROR AND PRESET APERTURE STOP CONTROL DEVICE FOR SINGLE LENS REFLEX CAMERAS
Akihiko Sato, Tokyo, Japan, assignor to Nippon Kogaku K.K., Tokyo, Japan, a corporation of Japan
Filed May 23, 1967, Ser. No. 648,707
Claims priority, application Japan, May 25, 1966, 41/48,693
Int. Cl. G03b 19/12
U.S. Cl. 95—42 7 Claims



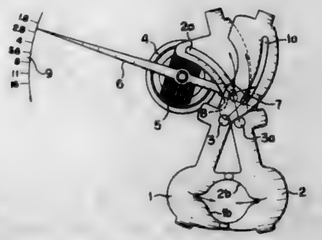
A mirror positioning device for a single lens reflex camera having a viewing mirror movable from a viewing position to an exposure position, and having a preset aperture stop control assembly on the objective lens. An interlock is provided between the mirror device and the preset aperture stop control comprising a mirror lever cooperating with a stud on the mirror and a pivotable transmission lever biased toward the mirror lever and cooperating with the preset aperture stop control assembly. There is also a manual control knob for selective manual control of either the viewing mirror or the preset aperture stop, or a third position in which both are activated automatically upon depression of the shutter button.

3,442,193
AUTOMATIC FOCUSING SYSTEM
Armin B. Pagel, Janesville, Wis., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed May 31, 1966, Ser. No. 559,633
Int. Cl. G03b 3/10
U.S. Cl. 95—44 15 Claims



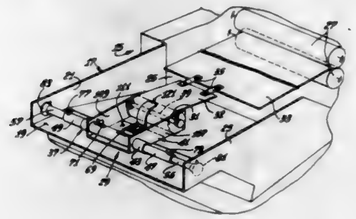
An automatic focusing system for a camera in which a beam of light is directed toward a subject from a light source within the camera and a portion of the light beam reflected from the subject back to the camera is sensed by photoelectric means. The angle between the emitted and reflected beams is translated into a mechanical movement which is a function of the distance from the camera to the subject. The projected and reflected beams are focused in accordance with the distance to the point of reflection and there is a mechanism providing for sequential operations which insures completion of various adjustments prior to exposure.

3,442,194
AUTOMATIC ADJUSTMENT MECHANISM FOR APERTURE FORMING BLADES OF A CAMERA
Koji Sho, Yokohama-shi, Japan, assignor to Nippon Kogaku K.K., Tokyo, Japan, a corporation of Japan
Filed Mar. 23, 1966, Ser. No. 536,916
Claims priority, application Japan, Mar. 24, 1965, 40/23,078
Int. Cl. G03b 9/06
U.S. Cl. 95—64 4 Claims



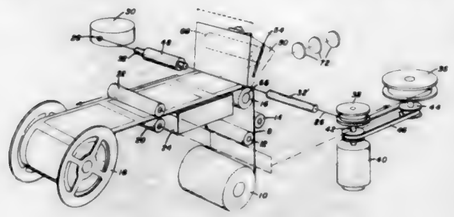
An automatic exposure adjustment mechanism for the diaphragm forming blades of a camera. Maximum angular moment of the diaphragm blades is obtained by locating the pivot points of the blades on a line tangent to the curved cam slot provided in the blades at a point where the pin driven by a light responsive mechanism is in the vicinity of the maximum aperture position of the blades.

3,442,195
APPARATUS FOR HOLDING FILM
William L. Guynes, Torrance, Calif., assignor of thirty-eight percent to Albert F. Werner, Redondo Beach, twelve and one-half percent to Nancy M. Sims, Walteria, and twelve and one-half percent to Joan Taupier, Redondo Beach, Calif.
Filed Oct. 3, 1966, Ser. No. 583,633
Int. Cl. G03d 3/00
U.S. Cl. 95—89 8 Claims



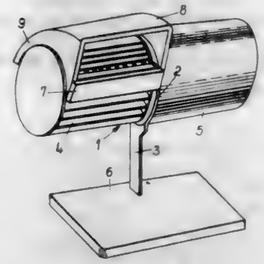
Apparatus for developing film having a film holder device to mount the film to the inlet section of the developer. The film holder includes a supporting member, a spindle and a support device. The support device is attached to the support member for releasably supporting the spindle. The supporting member is provided with a device for releasably attaching the supporting member to the inlet section of the developer.

3,442,196
YARN MATERIAL PHOTOGRAPHIC PROCESSING APPARATUS
Merriam E. Johnson, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Continuation of application Ser. No. 558,518, June 17, 1966, which is a continuation of application Ser. No. 360,862, Apr. 20, 1964. This application Apr. 29, 1968, Ser. No. 725,221
Int. Cl. G03d 5/06; B05c 1/14
U.S. Cl. 95—89 10 Claims



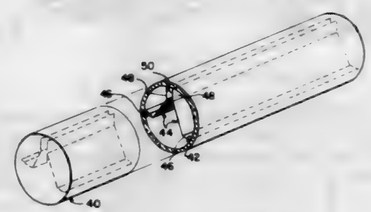
A photographic processing apparatus utilizing a yarn material of a substantially constant diameter for applying a processing solution onto the exposed latent image of a photosensitive material for processing the latent image to a visible image. The yarn material is presoaked with processing solution and is moved in a direction transverse to the movement of the photosensitive material through the apparatus. The processing apparatus has a device therein for guiding and urging the yarn material into pressure engagement with the photosensitive material as the photosensitive material is being moved through the apparatus.

3,442,197
VENTILATOR SYSTEM AND VAPOR DISPENSER
Claus Christian Cobarg, Bad Soden, Germany, assignor to Braun Aktiengesellschaft, Frankfurt am Main, Germany, a corporation of Germany
Filed Feb. 2, 1967, Ser. No. 613,531
Claims priority, application Germany, Feb. 12, 1966, B 65,212
Int. Cl. A61l 9/04
U.S. Cl. 98—30 4 Claims



A ventilator with a cross current air blower that has an air stream exit is provided with a dispenser to hold a substance that gives off volatile vapors. The dispenser is disposed near the turbulence zone of the blower, and is operative to store the aforesaid substance and to permit at least some of the vapors to be discharged towards the air stream that exits from the blower. A dispenser, for use in connection with a ventilator which has a cross current air blower that includes an air stream exit; the dispenser is held near the blower and includes a pocket structure that has an opening near the air exit side of the blower, so that the exiting air stream will sweep across the opening.

3,442,198
EXPOSURE CONTROL SYSTEM
Conrad H. Biber, Needham, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Dec. 23, 1966, Ser. No. 604,425
Int. Cl. G03b 9/02
U.S. Cl. 95—64 6 Claims



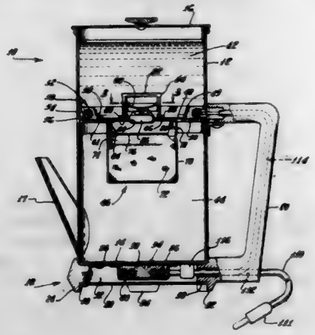
An exposure system for a camera in which exposures are made by moving an aperture and a photosensitive recording medium relative to one another and the duration of exposure is a function of the width of the aperture. The exposure system includes a relatively narrow elongated aperture constructed to provide for rapid changes in width during exposure of an area of the recording medium to form an image therein and a photoelectric control system for rapidly varying the width of the aperture as a function of light incident on the aperture. Aperture structures and control systems are disclosed for dif-

ferentially varying the widths of a plurality of zones of the aperture.

ERRATUM

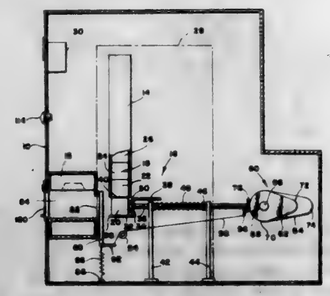
For Class 98—30 see:
Patent No. 3,442,197

3,442,199
BEVERAGE MAKER
John F. McGrail, 13661 Olympic Ave., Costa Mesa, Calif. 92626
Filed Nov. 29, 1967, Ser. No. 686,489
Int. Cl. A47t *31/10, 31/06*
U.S. Cl. 99—283 12 Claims



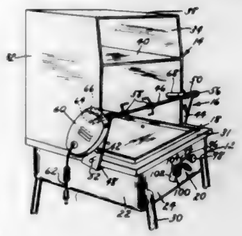
A beverage maker, such as is used to make coffee by the drip method, in which an upper water compartment and a lower beverage compartment are provided in a single cylindrical container. Thermostatically controlled heating elements are provided in the two compartments. A unitary valve and coffee basket assembly is removably positioned in the container so as to separate the two compartments. Improved bimetallic actuated valves are disclosed for controlling flow of water from the upper compartment to the lower compartment.

3,442,200
FOOD VENDING APPARATUS
Kurt Babel, 3 Henry St., Passaic, N.J. 07055
Filed Feb. 21, 1967, Ser. No. 623,492
Int. Cl. A47j *27/00*; B65h *3/00*; G07f *11/22*
U.S. Cl. 99—357 8 Claims



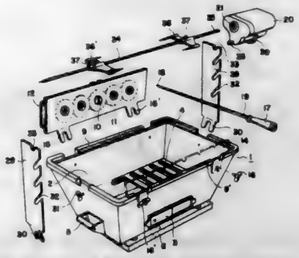
In the disclosed embodiment of the invention, food products, such as frankfurters, are placed in boxes stacked in a refrigerated hopper. The lowermost box in the stack is received on a loading shelf, which is caused to move the box into a microwave oven where it is pushed off the shelf. After the shelf is withdrawn, the food product is cooked in the oven.

3,442,201
PIVOTED SPIT AND FIREBOX ASSEMBLY FOR BARBECUE GRILLS
Richard Kates, Madison, N.J., assignor to Federal Steel Corporation, Raratin, N.J., a corporation of New Jersey
Filed Feb. 10, 1967, Ser. No. 615,228
Int. Cl. A47j *37/04*
U.S. Cl. 99—421 1 Claim



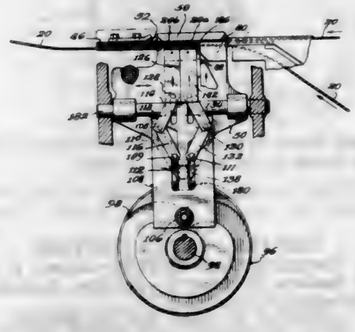
An apparatus for providing access to the motor driven spit and the interior of the firebox of a barbecue grill having a hood enclosing a heating zone. The spit and its motor are mounted on support plates pivoted to the base of the grill for movement of the spit between a retracted operative cooking position within the heating zone and an extended, accessible position outside the heating zone. The fire tray is movably mounted within the base by links which permit the same to be raised and lowered relative to the spit and to be tilted for discharging fuel ashes therefrom. Means are provided for adjusting the vertical position of the fire tray beneath the spit for selectively varying the heat intensity applied to the food on the spit.

3,442,202
AUTOMATIC ROTISSERIE APPARATUS
Taizo Ishida, 14 of 2, Tokiwa 4, Urawa-shi, Saitama-ken, Japan
Filed June 8, 1967, Ser. No. 644,708
Claims priority, application Japan, Dec. 24, 1966, 41/84,373
Int. Cl. A47j *37/04*; F24b *3/00*
U.S. Cl. 99—421 4 Claims



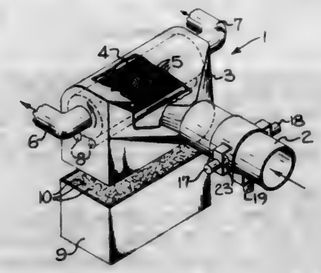
An automatic rotisserie apparatus including a range having rotisserie attachments adapted to be placed thereon comprising a horizontal extending spit member support and a vertical extending spit member support. The horizontal extending split member support includes a plurality of interconnected rotating means and the vertical extending spit member support includes a plurality of positioning means permittng different vertical positions of the spit member.

3,442,203
AUTOMATIC STRAPPING MACHINE EMPLOYING FRICTION-FUSED JOINTS
Robert J. Kobiella, Rolling Meadows, Ill., assignor to Signode Corporation, a corporation of Delaware
Filed Apr. 10, 1967, Ser. No. 629,799
Int. Cl. B65b *13/04, 13/34*; B32b *31/08*
U.S. Cl. 100—26 19 Claims



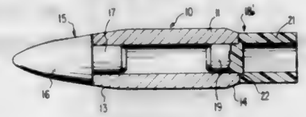
This disclosure is directed to an automatic strapping machine wherein plastic strap is fed about a package at a high rate of speed into overlapping position with the trailing end of the strap. The strap disposed about the article is tensioned and the overlapped ends are moved into engagement under pressure. The straps are moved relative to each other at a high rate of speed to form a friction-fused joint at the interface regions. The strap ends are in tension during the formation of the fused joint with the result that the stress distribution existing in the strap during fusion and after the joint has been formed as part of the complete loop is similar.

3,442,204
AUTOMATIC DAMPER MECHANISM FOR BALING STAPLE FIBERS
Stuart D. McCauless and Irvin V. Plowden, Rock Hill, S.C., assignors to Celanese Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 4, 1966, Ser. No. 539,841
Int. Cl. B30b *9/30*
U.S. Cl. 100—35 6 Claims



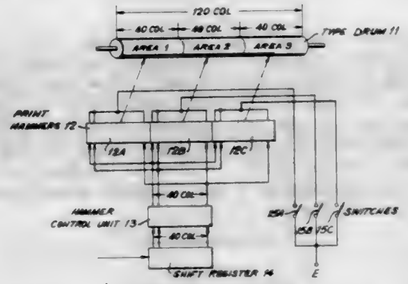
Staple fiber bales are provided of more uniform dimensions and density by depositing the fibers in a more uniform layer. Such a layer is provided by altering the forward course of travel of the fibers during the conveying thereof, and just prior to their being condensed into a layer over some predetermined sequence and period of time.

3,442,205
AMMUNITION
Hans Stadler, Nuremberg, and Heinz Gawlick, Furth, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany
Filed June 2, 1966, Ser. No. 554,853
Claims priority, application Germany, May 29, 1965, D 47,391
Int. Cl. F42b *11/36*
U.S. Cl. 102—92.7 15 Claims



A practice projectile having a central plastic cylindrical tubular body with a through axial bore, a rear closure plug of readily destructible material to block the passage of propellent gases through the axial bore during the initial period of firing for actuation of automatic mechanisms and to be driven forwardly through and out of the axial bore during the latter period of firing to reduce the range of the projectile body, and a front closure member resembling the tip of a live projectile to be driven forwardly away from the projectile body by the forwardly moving rear closure.

3,442,206
APPARATUS FOR LINE PRINTING
Tadashi Sugimoto, Kawasaki-shi, Japan, assignor to Fujitsu Limited, Kawasaki, Japan, a corporation of Japan
Filed May 17, 1967, Ser. No. 639,212
Claims priority, application Japan, May 19, 1966, 41/31,915
Int. Cl. B41j *9/10*
U.S. Cl. 101—93 3 Claims

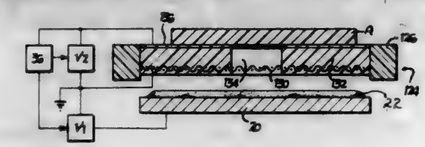


A plurality of printing hammers of line printing apparatus are successively operated in groups to print groups of columns in succession. The number of columns in each of the groups is less than the total number of columns and is the same in each of the groups.

3,442,207
ELECTRICAL PRINTING APPARATUS USING SCREEN WITH THICK COATING TO DEFINE IMAGE
William E. Johnson, Temperance, Mich., assignor to Owens-Illinois, Incorporated, a corporation of Ohio
Filed June 3, 1965, Ser. No. 461,126
Int. Cl. B41f *15/00*
U.S. Cl. 101—114 4 Claims

Electrical printing methods and apparatus of the type wherein powder particles are electrically transferred from a supply source through a stencil screen to an article sur-

face. The invention is especially directed to improvements in stencil screen construction which result in a high degree

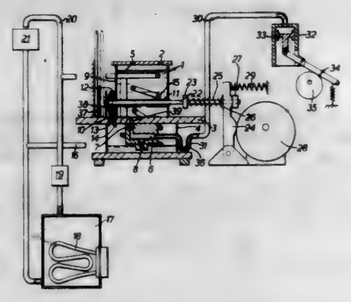


of resolution and sharpness in the powder image applied to the article surface.

3,442,208
APPARATUS FOR PRINTING CODE MARKS FROM A FLUID MEDIUM

Geoffrey Percy Copping, Chesham, and Kenneth William Herbert Whittington, Barking, England, assignors to Her Majesty's Postmaster General, London, England

Filed Aug. 8, 1966, Ser. No. 570,801
Claims priority, application Great Britain, Aug. 10, 1965, 34,184/65
Int. Cl. B41f *1/40*
U.S. Cl. 101—318 6 Claims



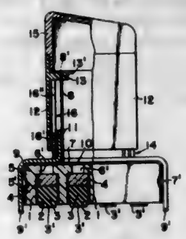
Apparatus for printing code marks on letters comprises a first container for printing ink and from which a stream of printing ink is allowed to flow down a guide surface to a second container from which the ink is pumped back to the first container. Projecting through the guide surface and into the stream is a series of printing pins. Electromagnets are fitted to the pins to move a selection of the pins so that the heads thereof contact the letter to be marked.

3,442,209
RUBBER STAMP

Takaji Funahashi, 1, 2-chome, Kitatakajo-machi, Nishi-ku, Nagoya-shi, Aichi-ken, Japan

Filed Mar. 24, 1967, Ser. No. 625,641
Claims priority, application Japan, Oct. 4, 1966, 41/65,489
Int. Cl. B41f *31/00;* B41k *1/38;* B41l
U.S. Cl. 101—327 6 Claims

A multi-color rubber stamp which comprises a plurality of receiving frames corresponding in number to the colors to be applied and containing rubber letter blocks extending through elongated slots at the bottom faces of the receiving frames and ink absorbers surmounting the rubber blocks. The receiving frames are supported in separate chambers formed in a frame casing, the latter being detachably mounted within a machine frame, which in turn is slidably mounted for vertical movement in a sleeve member between a first position in which the letter blocks are retracted and a second position in which the letter blocks project below the lower edges of the sleeve member. An external frame is connected to the machine frame and slidably receives the sleeve member with the interposition of a spring between the external

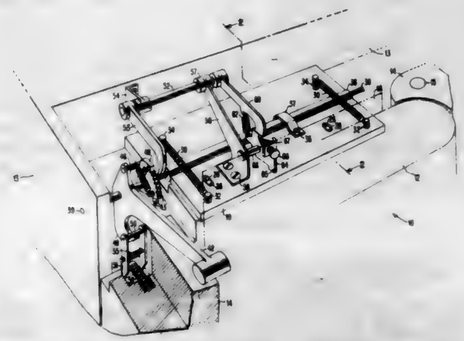


frame and sleeve member, urging the external frame and machine frame to its retracted position.

3,442,210
PRINTER PLATEN CONTROL

John E. Hawxhurst, Endwell, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Dec. 20, 1967, Ser. No. 692,241
Int. Cl. B41f *1/28, 21/00, 1/00*
U.S. Cl. 101—407 6 Claims



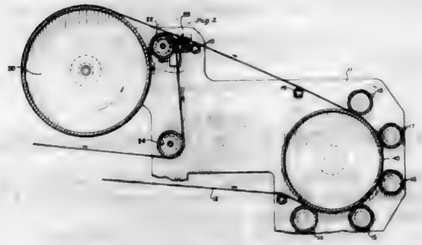
An adjustable printer platen is retracted by operation of a type carrier gate locking handle in opening the gate, and is advanced by operation of the handle to lock the gate in the closed position until a sensing mechanism engages the form and locks the mechanism against further advance of the platen.

3,442,211
HIGH SPEED WEB-FED ROTARY PRINTING PRESS WITH DRIER AND CHILL ROLL

Francis W. Beacham, Williamsville, N.Y., assignor to J. W. Clement Company, Depew, N.Y.

Filed June 13, 1966, Ser. No. 557,188
Int. Cl. B41f *23/04*
U.S. Cl. 101—416 4 Claims

In a high speed printing press having a means for printing ink on a web traveling at a high speed and ink drying and setting means for rapidly drying and setting the ink on the web, which include a heat dryer operating to heat the ink and initiate vaporization of the volatile constituents of the ink and a chill roll following the heat dryer and operating to set the ink constituents remaining on the web, the web training at a high speed around a substantial extent of the peripheral surface of the chill roll while the vaporized constituents of the ink are enveloping the web, the improvement comprising a squeegee roll disposed in bearing engagement with the web and squeezing the web against the chill roll surface whereby the accretion of vaporized constituent condensate products on

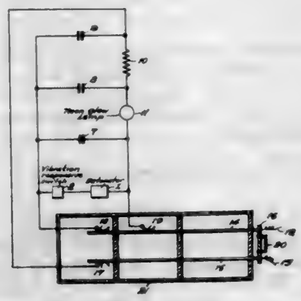


the surface of the chill roll of a thickness sufficient to periodically produce streaking of the web thereby is prevented.

3,442,212
ANTIPERSONNEL LAND MINE

Wesley Ferrell, Wayne, N.J., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed Apr. 22, 1960, Ser. No. 25,483
Int. Cl. F42b *23/26;* F42c *13/06*
U.S. Cl. 102—19.2 1 Claim

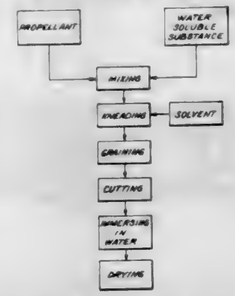


1. A land mine having delayed arming means including an electrically actuated detonator, a vibration sensitive, normally open firing switch and a firing condenser connected in series in a closed circuit; arming means for said land mine comprising a second condenser connected in parallel with said first condenser; an ionizable gas discharge tube connected between corresponding terminals of said firing condenser and said second condenser; a third condenser connected in parallel with said second condenser, a resistance connected between corresponding terminals of said second and third condensers and in series with said discharge tube; and means for charging said third condenser when said mine is laid comprising a housing of insulating material, first and second parallel, spaced, pull-out electrical leads slidably mounted in said housing, a pair of electrical charging leads connected, one each, to the outer ends of said pull-out leads, a tab of insulating material also fixed to the outer ends of said pull-out leads, a first terminal slidably contacting said second pull-out lead, and second and third terminals slidably contacting said first pull-out lead, said first and second terminals being connected across said third condenser and said second and third terminals being connected across said firing condenser, whereby said mine is rendered safe until said pull-out leads are removed.

3,442,213
PROPELLANT CHARGE FOR SMALL ARMS AMMUNITION

Teruhiko Suzuki, Nobeoka-shi, Junichi Nomura and Daijiro Kameyama, Oita-shi, and Minoru Miyoshi, Soka-shi, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Kita-ku, Osaka, Japan, a corporation of Japan

Filed Apr. 18, 1967, Ser. No. 631,580
Claims priority, application Japan, May 23, 1966, 41/32,435
Int. Cl. F42b *5/02*
U.S. Cl. 102—38 2 Claims



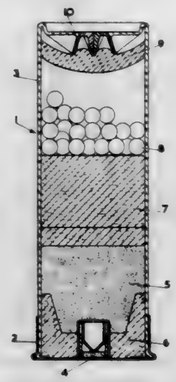
A large amount of water-soluble substances having uniform particle size are mixed with a propellant composition arbitrarily selected from the group consisting of single-base, double-base and triple-base powder. The mixture thus obtained is shaped into a desired shape according to a conventional method, and thereafter the shaped propellant is submerged in water to elute out water-soluble substances, thereby to obtain a porous structure.

The thus obtained propellant has a high burning rate and is capable of being used as a propellant charge of single grain. This propellant charge can be used as a caseless cartridge by fixing a bullet to one end of said propellant charge and a priming device to the other.

3,442,214
SHOTGUN CARTRIDGE

Joseph Walter Huskins, Sutton Coldfield, England, assignor to Imperial Metal Industries (Kynoch) Limited, Witton, Birmingham, Warwickshire, England, a corporation of Great Britain

Continuation-in-part of application Ser. No. 475,636, July 29, 1965. This application Apr. 10, 1967, Ser. No. 629,514
Claims priority, application Great Britain, May 24, 1965, 21,904/65
Int. Cl. F42b *7/04, 7/06*
U.S. Cl. 102—42 8 Claims



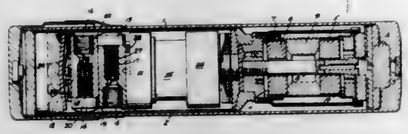
A shotgun cartridge having a cartridge case of polymeric material, a crimp type closure, and a frangible card

between the closure and the shot charge whereby bulging of the case during crimping is obviated.

3,442,215
POSITION MARKER FOR ENTANGLEMENT IN TREE TOPS

Glenn L. Shira, Newark, Del., assignor to the United States of America as represented by the Secretary of the Army

Filed Aug. 18, 1967, Ser. No. 661,730
Int. Cl. F42b *13/44*
U.S. Cl. 102—90 2 Claims

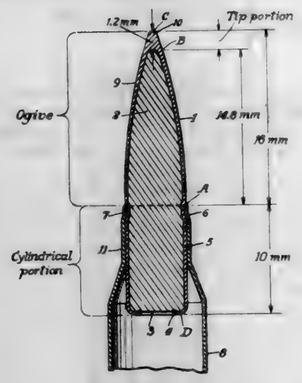


An apparatus to mark a particular object or men from an airborne vehicle for aerial observation in heavily wooded areas or under jungle canopy, designed to maintain a smoke marker on top of the jungle canopy by entanglement of tree entanglement members and cables attached thereto. A marker, so positioned, has the advantage of being visible at greater distances and may not be as easily extinguished at that height as a smoke marker that reaches the ground level.

3,442,216
INFANTRY RIFLE BULLET

Ludwig Six, Karlsruhe, Baden, and Rudolf Niemann, Mullheim, Baden, Germany, assignors to Industrie-Werke Karlsruhe Aktiengesellschaft, Karlsruhe, Baden, Germany, a corporation of Germany

Continuation-in-part of application Ser. No. 506,905, Nov. 4, 1965. This application Dec. 6, 1967, Ser. No. 688,600
Claims priority, application Germany, Nov. 28, 1964, I 27,003
Int. Cl. F42b *11/08*
U.S. Cl. 102—92.2 2 Claims



An infantry rifle bullet comprising a lead filled jacket made of deep drawn sheet metal and having a short cylindrical tail portion of predetermined wall thickness and a longer pointed ogival portion of a wall thickness which gradually increases from said tail portion toward the tip.

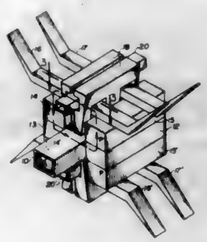
ERRATUM

For Class 102—92.7 see:
Patent No. 3,442,205

3,442,217
ON-OFF SWITCH FOR ELECTROMAGNETIC PUMP

Harry H. Hanlin, Canoga Park, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed May 19, 1967, Ser. No. 641,424
Int. Cl. F04d *7/00, 13/00*
U.S. Cl. 103—1 1 Claim

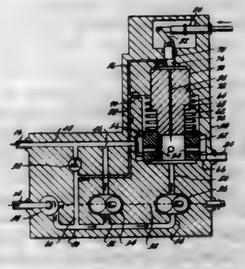


The invention describes a thermoelectric pump which reduces the problem of start-up by using a liquid metal switch to interrupt the thermoelectric circuit during start-up, thereby preventing an unnecessary drain upon the start-up battery.

3,442,218
DUAL PURPOSE PUMP

Thomas B. Wess, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York

Filed Apr. 12, 1966, Ser. No. 542,101
Int. Cl. F04b *19/00*
U.S. Cl. 103—10 6 Claims

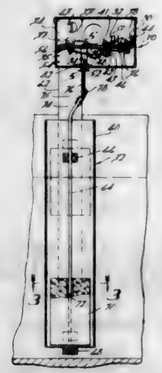


A pump assembly delivers liquid at varying rates and selectively supplies high pressure liquid for hydraulic actuation of an auxiliary device. Two positive displacement pumps are employed in parallel. Selectively actuated means throttle the flow through the output passageway of one of the pumps and valve means responsive to increased pressurization, resulting from the actuation of the throttling means, connects the first pump output to the auxiliary device.

3,442,219
LAUNDRY TUB PUMP DEVICE

Harold W. Fitzgerald, 707 Gertrude, Pontiac, Mich. 48054

Continuation-in-part of application Ser. No. 591,197, Nov. 1, 1966. This application Mar. 23, 1967, Ser. No. 625,526
Int. Cl. F04b *49/04*; H01k *35/18*
U.S. Cl. 103—26 4 Claims

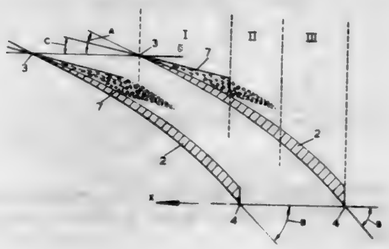


An automatic drainage device which is adapted to withdraw water or other liquid from a tray or tub having an outlet at a low level and to discharge it through an outlet at a higher level and including a switch actuator that is responsive to the liquid level contained in the tray or tub.

3,442,220
ROTARY PUMP

Anthony William Thomas Mottram, Princethorpe, and John Lanfear Scott-Scott, Bulkington, England, assignors to Rolls-Royce Limited, Derby, England, a British company

Continuation-in-part of application Ser. No. 557,217, June 13, 1966. This application Aug. 6, 1968, Ser. No. 750,613
Int. Cl. F04d *13/12*; F03c *3/00*
U.S. Cl. 103—88 6 Claims

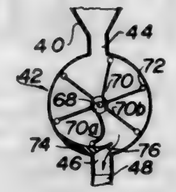


A rotary pump for liquids or liquids containing gas or vapour and capable of operating at a high rotational speed while pumping from a low suction head. The pump has an impeller having at least one cambered blade of screw-like configuration and having a thin leading edge of finely-tapered, wedge-like form extending throughout the whole effective span of the blade from the root to the tip thereof and a blade inlet angle of small magnitude, thereby to intentionally produce cavitation on the suction side of the blade over the whole of the effective span. The or each blade has a pitch which increases from the leading to the trailing edge thereof and a blade angle which increases progressively from the small inlet angle to a larger outlet angle, thereby to terminate the cavitation in a region between the inlet and outlet ends of the impeller.

3,442,221
APPARATUS FOR PRECISION PLANTING OF SEEDS

Irvine L. Phillips, David B. Scott, and James M. Thompson, Salinas, Calif., assignors to Soilserv, Inc., Salinas, Calif.

Filed Jan. 14, 1966, Ser. No. 520,806
Int. Cl. F04c *5/00*
U.S. Cl. 103—117 1 Claim

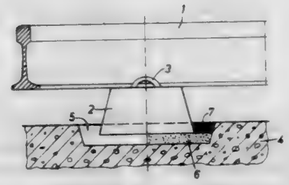


Seed planting mobile unit having a member for forming a channel at the top of a seed bed and an extrusion device for depositing a viscous seed containing mass into the channel. The extrusion device includes a pump having a chamber within which a rotatably driven impeller is mounted. The impeller has flexible blades which slidably engage the chamber surface. A portion of the chamber surface is cammed to distort the flexible blades so that a volume decrease is created ahead of the blade as it is distorted to thereby force viscous seed containing mass outwardly and into the channel in the seed bed.

3,442,222
METHOD OF LAYING RAILROAD TRACKS ON CONCRETE BASES

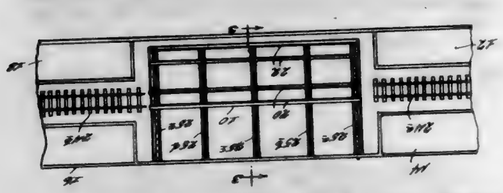
Per-Erik Olson, Nasbypark, near Stockholm, Nils Lundell, Stockholm, and Sigwid Ribbing, Bromma, near Stockholm, Sweden, assignors to Swedish Rail System AB-S.R.S. Solna, near Stockholm, Sweden

Filed Apr. 24, 1967, Ser. No. 633,071
Claims priority, application Sweden, May 6, 1966, 6,115/66
Int. Cl. E01b *29/02*
U.S. Cl. 104—3 5 Claims



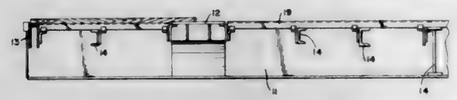
A concrete base for railroad tracks is moulded with recesses for sleeper blocks, said recesses being made deeper and wider than corresponding with the sleeper blocks. A rail with attached sleeper blocks is brought substantially to its proper final position with respect to the recesses and is adjusted in said position by means of temporary supports. Sand is placed and packed in the recesses, under and around the sleeper blocks, and then these blocks are joined to the concrete base by pouring concrete or other suitable material round the sleeper blocks within the recesses for closing the same. Finally the temporary supports are removed.

3,442,223
METHOD AND APPARATUS FOR LOADING OR UNLOADING VEHICLE CARRYING RAILWAY CARS
Joseph E. Graham, 1900 Lismore Lane, Baltimore, Md. 21228
Filed Aug. 8, 1966, Ser. No. 571,101
Int. Cl. B61d 47/00
U.S. Cl. 104—48 6 Claims



The following specification discloses a system for loading and unloading the vehicles which move along a predetermined pathway. A transfer table, having a pair of parallel tracks thereon, is movable between a first position and a second position. The transfer table, when in the first position, is effective to align one of said parallel pairs of tracks with the predetermined pathway and the other of the parallel pair of tracks with a loading and unloading platform located to one side of the predetermined pathway. The transfer table, when moved to its second position, is effective to locate the one pair of parallel tracks in registry with a second loading and unloading to the other side of the predetermined pathway while the other of the pairs of tracks is in alignment with the predetermined pathway. A railroad car may be located on one of the pairs of parallel tracks and then moved to one of the loading and unloading platforms while, simultaneously, a second car may be positioned on the other of said tracks which is in alignment with the predetermined pathway. The platform is then operated to its other position wherein the second car may now be loaded or unloaded and the first car may be removed from the transfer table while a third car is located thereon and the operation then be repeated.

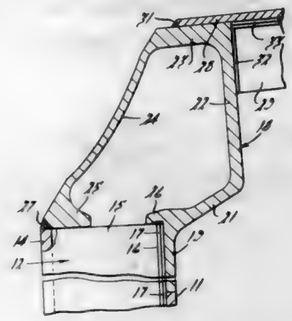
3,442,224
FLOOR BOARD SUPPORT STRUCTURE
Joseph E. Rutkoski, Lyndora, Pa., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed Dec. 23, 1966, Ser. No. 604,263
Int. Cl. B61d 17/00, 45/00
U.S. Cl. 105—368 3 Claims



A floor board structure providing for a tiedown arrangement adapted to be mounted in the underframe of a railway car as a sub assembly, and constructed to be adjustable between positions for supporting a floor board or a tiedown channel, as may be required.

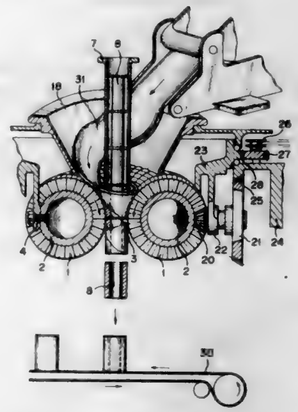
3,442,225
SIDE PLATE FOR RAILROAD CAR
Rolf Mowatt-Larssen, Fayson Lakes, N.J., assignor to Fruehauf Corporation, a corporation of Michigan
Filed May 4, 1967, Ser. No. 636,179
Int. Cl. B61d 17/06; E04b 2/56; E04c 3/32
U.S. Cl. 105—409 9 Claims

The extruded side plate strengthens the top of the side sheets and posts and is provided with a strain relief side to permit expansion to prevent cracking and to compensate for shrinkage due to welding. The side plates form a support for the roof and the crossbows thereof when used. The arrangement also permits the fabrication of the roof separately from the car which may, after



assembly, be moved on to the top of the side plate and be permanently secured thereto as by welding when the top of the car is to be covered.

3,442,226
CAKE AND BREAD MATERIAL MAKING DEVICE
Torahiko Hayashi, 2–3 Nozawa-cho, Utsunomiya-shi, Tochigi-ken, Japan
Filed Dec. 5, 1966, Ser. No. 599,193
Claims priority, application Japan, Mar. 16, 1966, 41/5,846; Mar. 22, 1966, 41/17,266
Int. Cl. A21c 3/04
U.S. Cl. 107—1 2 Claims

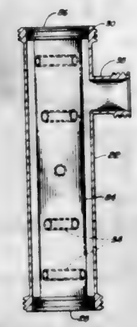


A cake or bread making device for continuously molding and delivering cake or bread or similar material in the shape of a bar.

3,442,227
APPARATUS FOR MANUFACTURING VARIEGATED ICE CREAM
Paul R. Johnston, Rte. 8, Box 238, Decatur, Ill. 62525
Filed Feb. 23, 1967, Ser. No. 618,225
Int. Cl. A23g 3/02
U.S. Cl. 107—1 6 Claims

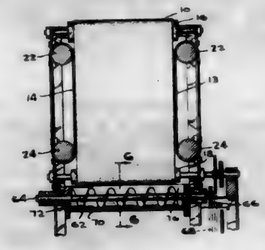
Apparatus for introducing a liquid component into a flow of semi-frozen ice cream downstream of a freezer, particularly of advantage where the ice cream contains pieces of fruit and the like, comprising: a section of conduit having a cylinder positioned internally thereof

to form an annular space through which the liquid is passed from a connecting spud in the conduit wall to a plurality of cross tubes positioned diametrically of the



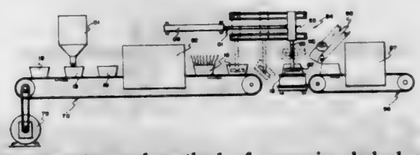
cylinder and spaced along its length. The liquid component is discharged from openings in the cross tubes into the flow of ice cream through the cylinder.

3,442,228
AUTOMATIC DOUGH FEEDING MACHINE
Fausto Celorio, Cumbres de Acultzingo 185, Mexico City, Mexico
Filed Mar. 24, 1967, Ser. No. 625,748
Int. Cl. A21c 11/16; G01f 11/00
U.S. Cl. 107—14 2 Claims



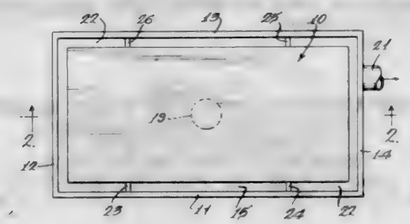
A dough feeding apparatus having a hopper formed of vertically movable bands feeding dough to a driven screw conveyor which forces the dough through an extrusion opening.

3,442,229
METHOD AND APPARATUS FOR REMOVING FOODSTUFFS FROM COOKING RECEPTACLES
Ronald L. Dunn, 1333 N. Main, Wichita, Kans. 67203
Filed Jan. 4, 1967, Ser. No. 607,248
Int. Cl. B29c 7/00
U.S. Cl. 107—54 10 Claims



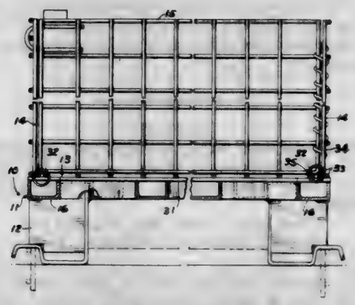
An apparatus and method of removing baked goods from cooking receptacles through the use of a fluid medium under pressure. The apparatus supplies fluid pressure at a plurality of locations about the periphery of a cooking receptacle. The method of this invention utilizes a conveyor system to fill receptacles; bakes the foodstuffs therein; and separates the receptacles and the baked goods through fluid pressure.

3,442,230
WORKTABLE
Percy B. Polen, Skokie, Ill., assignor to Velsicol Chemical Corporation, Chicago, Ill., a corporation of Delaware
Filed Jan. 15, 1968, Ser. No. 697,666
Int. Cl. A47b 85/00, 35/00
U.S. Cl. 108—24 7 Claims



A table comprising in combination:
(a) a generally vertical, continuous closure panel,
(b) a generally horizontal, bottom member joined with the closure panel at a lower position thereof,
(c) a generally horizontal, top member spaced above the bottom member connected to the closure panel at an upper portion thereof and forming with the latter and with the bottom member a chamber,
(d) passageway means providing communication between the uppermost surfaces of the top member and the chamber,
(e) outlet means providing communication between the chamber and the atmosphere.
(f) air moving means for drawing air from the uppermost surface of the top member through the passageway means into the chamber and discharging it therefrom to the atmosphere via the outlet means.

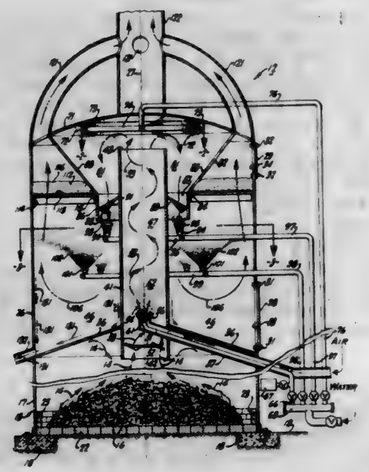
3,442,231
MATERIAL HANDLING CONTAINER
Stanley J. Jurasek, Albion, Mich., assignor to Union Steel Products Company, Albion, Mich., a corporation of Michigan
Filed July 21, 1967, Ser. No. 655,172
Int. Cl. B65d 19/38
U.S. Cl. 108—53 21 Claims



The material handling container disclosed herein comprises a deck bed made of conventional structural shapes joined together to form a peripheral frame. A pocket defining structure is provided in each corner of said peripheral frame to define a substantially square pocket,

and a leg member is selectively positioned in each pocket. Each leg member has a lower portion with a downwardly facing recess for engaging the top edge of an underlying container when the containers are stacked. The upper portion of each leg has a portion which extends into said pocket and another portion which defines a shoulder that abuts one of the peripheral frame members. A deck mat is secured to the deck bed and comprises a plurality of slats including a lower series of spaced slats fixed to said deck bed and an upper series of spaced slats fixed to said lower series and said deck bed. Grid-like wall panels are hinged to the deck mat. Some of the walls include generally horizontal slats secured to opposite sides of vertical slats. A helical coil defines a hinge between said walls and said deck mat.

3,442,232
EFFLUENT CLEANER FOR WASTE BURNER
John H. White, 6494 Leonard Drive, Redding, Calif. 96001
Filed Nov. 9, 1967, Ser. No. 681,711
Int. Cl. F23g 5/00; F23j 3/00; B01d 47/12
U.S. Cl. 110—18 7 Claims

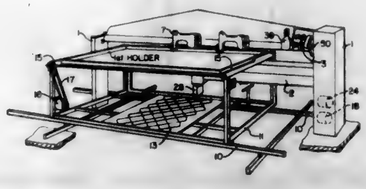


Located above a furnace such as a waste lumber burner, or incinerator, is an enclosure housing various cooperating structures arranged to receive the still-burning and burned effluent material, and to direct the material through a predetermined sequence of quenching, scrubbing and filtering steps culminating in the discharge to the atmosphere of gases substantially devoid of noxious compounds.

3,442,233
YARN GUIDE FOR A TUFTING NEEDLE
Roy T. Card, Chattanooga, Tenn., assignor to Lewis Card & Co., Inc., Chattanooga, Tenn., a corporation of Tennessee
Filed Jan. 7, 1965, Ser. No. 423,925
Int. Cl. D05c 15/00; D05b 55/02
U.S. Cl. 112—79 3 Claims

1. In a tufting machine having yarn supply means, a needle bar and a needle, yarn guide means comprising:
(a) a plate member having an aperture slightly larger than the cross-section of said needle,
(b) means supporting said plate member in fixed spaced relation below said needle bar and transversely of said needle,
(c) said needle depending from said needle bar axially through said aperture, with clearance between one side of said needle and the edge of said aperture for receiving the passage of yarn therethrough from said supply means and downwardly along said needle substantially parallel to the needle axis.

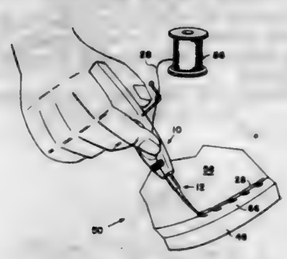
3,442,234
AUTOMATIC NEEDLE RETRACTING QUILTING MACHINE
David R. Cash, Louisville, Ky., assignor to James Cash Machine Co., Louisville, Ky., a corporation of Kentucky
Filed Feb. 1, 1966, Ser. No. 524,035
Int. Cl. D05b 11/00, 35/00, 69/02
U.S. Cl. 112—118 13 Claims



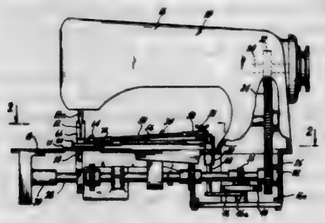
A quilting machine wherein a frame-mounted follower drives a carriage-mounted guide-track to move a carriage-mounted quilt along a path reproducing a sewing line design while a frame-mounted sewing machine sews that design into the quilt. At the end of one sewing cycle plus a small fraction of the next, the apparatus operates automatically to stop the sewing operation, retract the needle, move the sewing head away from the quilt and move the carriage reversely to the starting point. Now the carriage is moved rearwardly to a cutting point where a carriage-mounted cutter is operated to cut the sewing thread permitting the quilt to be removed.

3,442,235
SEWING DEVICE
Dorthey D. Gibson, 17950 Graystone Lane, San Jose, Calif. 95120
Filed Aug. 17, 1966, Ser. No. 573,104
Int. Cl. D05b 1/00; A41h 31/00
U.S. Cl. 112—169 4 Claims

A sewing device with an elongated handle and with a needle mounted on the handle. The needle includes a point that has a thread-receiving eye formed therein. Adjacent the point, the needle is formed with a curved portion. A guide is mounted on the handle and has an eye to receive the thread. A hook-shaped tensioning member is mounted on the handle adjacent the end of the handle that mounts the needle. The tensioning member cooperates with the guide to maintain the thread under constant tension.

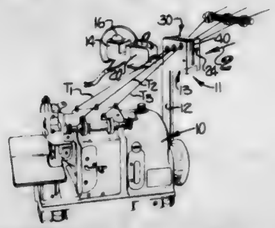


3,442,236
SEWING MACHINE
Ronald J. Boser, 21 Bolan Drive, Huntington Station, N.Y. 11746
Filed July 28, 1967, Ser. No. 656,868
Int. Cl. D05b 27/20
U.S. Cl. 112—213 7 Claims



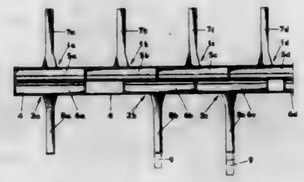
A needle-feed sewing machine having slide members operatively arranged in engagement on opposite sides of the work and simultaneously movable through reciprocating transverse movements during intervals between usual feed movements of the work, whereby the work has a resultant angular movement during stitching which provides a zigzag sewing pattern.

3,442,237
THREAD BREAK DETECTOR
Arthur Bennett Causby, Valdese, N.C., and Clarence W. Minton, Nashville, Tenn., assignors to Stevens Hosiery Division of J. P. Stevens & Co., Hickory, N.C., a corporation of Delaware
Filed Apr. 7, 1967, Ser. No. 629,246
Int. Cl. D05b 51/00
U.S. Cl. 112—218 6 Claims



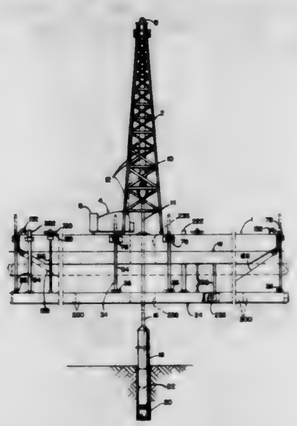
A thread break detector for use with a sewing machine including a plurality of weighted thread sensing members enclosed within a housing and mounted for vertical movement in respective pairs of spaced apart, vertically elongate grooves and switch means having an actuator member extending through the housing beneath the weighted thread sensing members so as to be engaged and actuated by any one of the weighted thread sensing members in the event that a thread breaks or becomes unduly slackened.

3,442,238
FLOATING LANDING-STAGE
Willem Cornelis van Oost, Harmelen, Netherlands, assignor to Grondverbetering- en Ontginningmaatschappij N.V., De Bilt, Netherlands
Filed May 22, 1967, Ser. No. 640,214
Claims priority, application Netherlands, May 23, 1966, 6607059
Int. Cl. B63b 35/34
U.S. Cl. 114—.5 10 Claims



A floating landing stage consists of a plurality of buoyant T-shaped elements whose heads are in alignment in two contiguous parallel rows, the heads of the T's forming the main walkway of the landing stage and the limbs of the T's forming the mooring parts of the stage. Preferably, two parallel beams outwardly bound the heads of the T-shaped elements, and the elements are hollow and box-shaped.

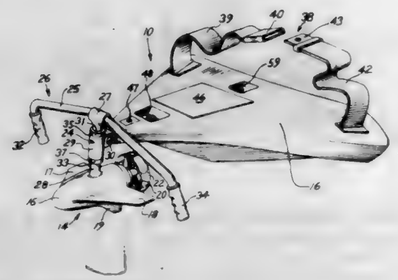
3,442,239
SUBMERGIBLE STABILIZER FOR BARGES
John Hart Wilson, % Wilson Manufacturing Co., P.O. Box 1031, Wichita Falls, Tex. 76307
Filed Mar. 28, 1968, Ser. No. 716,813
Int. Cl. B63b 35/00, 35/28
U.S. Cl. 114—.5 9 Claims



A stabilizer for barges, which stabilizer has the upper surface area thereof as large or larger than the upper surface area of the barge, which stabilizer is composed of a hollow, water tight, compartmented, braced structure, which may be selectively filled with water and submerged to give stability to the barge, or the water may be evacuated from the stabilizer to buoy up the barge. The structure is selectively secured to the barge by spaced apart,

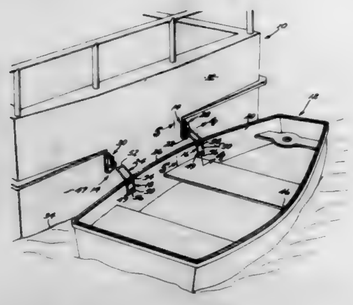
upright standards. Provision is made for a "well" or opening vertically through the submergible stabilizer, which opening or "well" is in register with a "well" or opening in the barge, to permit the passage of drilling tools therethrough to enable well to be drilled, from the barge, into the ocean floor.

3,442,240
POWER SWIMMING AID
Franklin J. Wild, 37423 Palmar Drive, Mount Clemens, Mich. 48043, and Stephen Robinson Loughman, Lawrence, Mich. 49064
Filed Dec. 13, 1967, Ser. No. 690,116
Int. Cl. A63b 35/12
U.S. Cl. 114—16 7 Claims



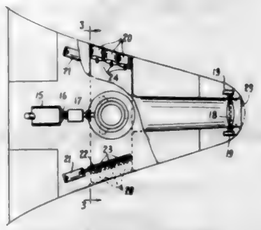
A power swimming aid including a floatable housing for supporting a swimmer and power means for propelling said housing including a motor-driven propeller. The power means is universally mounted on the housing and includes handle means for moving the motor-driven propeller to selectively guide the housing and a swimmer supported thereon in the water.

3,442,241
DAVIT FOR A DINGHY OR OTHER SMALL BOAT
George H. Daunis, 853 5th St., Manhattan Beach, Calif. 90266
Filed Dec. 7, 1967, Ser. No. 688,797
Int. Cl. B63b 23/00, 21/00
U.S. Cl. 114—43.5 10 Claims



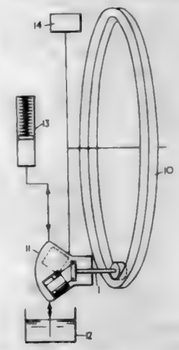
A davit for a dinghy or other small boat comprising a pair of hanger members secured to and extending outwardly over a side of the dinghy and a pair of lock devices secured to the stern of a carrier boat for releasably receiving the hanger members such that the dinghy may be swung upwardly and downwardly on the lock members between a lower in-water position and a raised out-of-water position against the stern of the carrier boat.

3,442,242
STOPPING AND MANOEUVERING MEANS FOR LARGE VESSELS
Norman V. Laskey, St. Lambert, Quebec, and George T. R. Campbell, Montreal, Quebec, Canada, assignors to Algonquin Shipping and Trading Limited, Montreal, Quebec, Canada
Filed June 5, 1967, Ser. No. 649,404
Int. Cl. B63h 11/08
U.S. Cl. 114—148 5 Claims



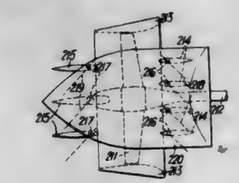
Stopping and manoeuvering means for large vessels having a cycloidal or vertical axis propeller located on the longitudinal centreline of the vessel in a transverse compartment open to both port and starboard sides of the vessel. A longitudinal passageway projects forward from the transverse compartment and is open at the bow of the vessel. Valves serve to open and close the seaward ends of the transverse compartment and longitudinal passage whereby a flow of water can be directed from the bow of the vessel to the propeller and be diverted from the propeller to either port or starboard or can be directed from either port or starboard to the propeller and from the propeller to the opposite side of the vessel. The valves on the port and starboard ends of the transverse compartment can be set at a predetermined angle to discharge water at an angle to the longitudinal centreline of the vessel.

3,442,243
APPARATUS FOR SHIP STABILIZATION
Philip Henry Tanner, Glasgow, Scotland, assignor to Vosper Limited, Paulsgrove, Portsmouth, Hampshire, England, a British company
Filed Jan. 15, 1968, Ser. No. 697,763
Claims priority, application Great Britain, Jan. 20, 1967, 3,203/67
Int. Cl. B63b 39/04
U.S. Cl. 114—124 1 Claim



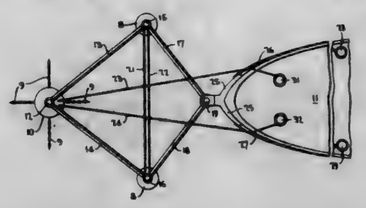
A member rotatable about the longitudinal axis of a ship or other floating body is driven in alternate directions as required for the purpose of reducing roll. This member may comprise a chain. A regenerative drive means is connected to the chain means and is selectively workable as a pump for transferring hydraulic liquid from a sump means to a reservoir and as a motor driven by the hydraulic liquid to the sump means.

3,442,244
PROPULSIVE SYSTEMS FOR VESSELS
Ronald Clark and Ewan Christian Brew Corlett, Basingstoke, England, assignors to Hydroconic Limited, London, England, a British company
Continuation of application Ser. No. 597,283, Nov. 28, 1966. This application Aug. 30, 1968, Ser. No. 757,223
Int. Cl. B63h 25/06, 1/14
U.S. Cl. 114—163 9 Claims



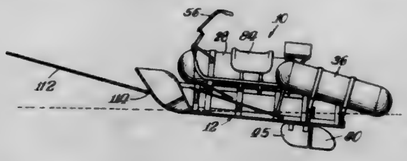
The invention comprises a propulsion and steering assembly for a marine vessel in which a propeller operates within a fixed nozzle and a set of rudder blades are mounted to turn about vertical pintles at the immediate exit of the nozzle. There are three or more of these rudder blades, equidistantly-spaced, and ganged to turn as one; that is to say, the blades are turned as a set to various steering angles while the individual blades maintain a parallel relationship one with another. It is a feature of the arrangement that the blades are set at a spacing such that one prevents break-away of the water stream on the negative pressure side of the blade next to it at larger steering angles of the order of 60° and this enables a beneficial enchanced steering effect to be achieved by virtue of hydro-dynamic "lift" on the negative pressure sides of the blades. The requirement for absence of break-away also demands that the blade should be close to the nozzle exit so as to lie in the still coherent stream issuing from the nozzle and the planes of the blades must be within that stream, i.e. they must lie well inside the vertical planes tangential to the opposite sides of the nozzle. There may be a similar set of blades at the nozzle entry, for use primarily when going astern.

3,442,245
RIGID ARM MOORING MEANS
John A. Christiana, Springfield, Va., and Frank S. Robinson, Marsa el Brega, Libya, assignors to the United States of America as represented by the Secretary of the Army
Filed Apr. 8, 1968, Ser. No. 719,589
Int. Cl. B63b 27/24, 21/00
U.S. Cl. 114—230 5 Claims



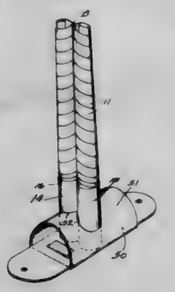
This invention relates to a single buoy mooring system (SBM) and, more particularly, to a monomooring means wherein the structure that rigidly moors a tanker also provides for the delivery of fluids between the tanker and a land based source or storage facility. The rigid arm mooring means of this invention can be made up of four rigid fluid transporting pipes which are pivoted end to end in the form of a rectangle. One such pivot is connected to a mooring buoy and is capable of pivoting thereabout. The diagonally opposite pivot is connected to a saddle which is secured to a tanker. The remaining pivots are mounted on fender buoys and are limited in their separation by nylon ropes. The distance between the tanker and the mooring buoy is limited by the length of mooring ropes. When loading onto a tanker, the fluid passes through a submarine pipeline into a swivel mounted centrally on a buoy on through the rigid pipes and the pivots to the saddle where a flexible pipe delivers fluid to the tanker manifold, usually at midship.

3,442,246
WATER SKI CYCLE
Ernest A. Paolone, 10410 S. Ave. O, Chicago, Ill. 60617
Filed Jan. 19, 1968, Ser. No. 699,223
Int. Cl. B63b 35/72; A63b 35/12; B63h 21/26
U.S. Cl. 115—70 9 Claims



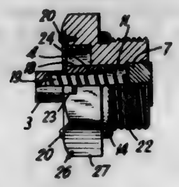
A water ski cycle comprising an elongated runner, an elongated primary tank unit mounted thereabove, auxiliary tank means at the forward end of the runner, elongated secondary tank units mounted at the opposed sides of the tank unit, and steering control means. The water ski cycle may be either pulled by a boat or self-propelled by an outboard motor.

3,442,247
EXTENSIBLE DOUBLE WAND
Carl T. Osterberg, Milwaukee, Wis., assignor, by mesne assignments, to Harold J. Vollmar, Milwaukee, Wis.
Filed June 24, 1966, Ser. No. 560,234
Int. Cl. G08b 5/00
U.S. Cl. 116—63 10 Claims



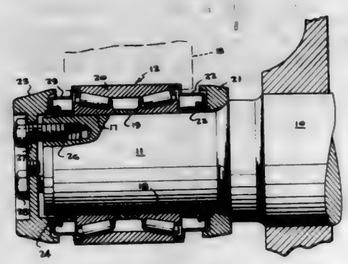
1. A safety device consisting of a cylindrical roll of a first sheet material comprising a multiplicity of turns of said sheet material, said cylinder being provided with a lateral cut substantially at right angles to the axis of said roll and extending from one side of the cylinder to a point close to the other side of the cylinder to leave each ply of said single sheet with an uncut portion, said cylinder being adapted to be bent double about said uncut portion as a hinge to form adjacent cylinders side by side and hinged to each other at the uncut portion, and being further adapted to be grasped at the hinge and pulled axially to extend the successive layers of said cylinder in a double helical pattern having each turn of the helix extending from one cylinder joined to the corresponding turn of the helix extending from the other cylinder by the uncut portion of the sheet whereby to form an extensible and collapsible wand.

3,442,248
MAGNETIC INDICATING DEVICE
John Parkinson, Newark, Alfred Elbich, Parsippany, N.J., and Edward T. Saylor, Jr., New York, N.Y., assignors to United Parmatic Corporation, Livingston, N.J., a corporation of New Jersey
Filed Jan. 11, 1967, Ser. No. 608,580
Int. Cl. G01l 19/12; H01f 7/02
U.S. Cl. 116—70 11 Claims



The present invention relates to an indicating device having a single magnet to hold a magnetically attractable signal indicator until a selected amount of magnetic flux is drawn off said magnet, allowing said signal to be actuated.

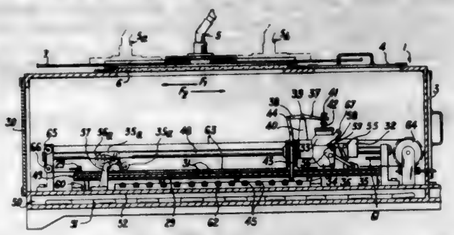
3,442,249
TEMPERATURE INDICATING MEANS
Warner A. Jamison and Robert M. Pilcher, Roanoke, Va., assignors to Standard Pressed Steel Co., Jenkintown, Pa., a corporation of Pennsylvania
Filed Nov. 8, 1967, Ser. No. 681,498
Int. Cl. G01k 1/02
U.S. Cl. 116—114.5 2 Claims



In a device for fastening at least a pair of members together, means for indicating a predetermined temperature of at least one of the fastened members including a fusible element contained in the fastening device, having a melting point sufficient to cause the element to melt and flow out of the fastening device when one of the fastened members disposed in heat transfer relation with the fastening device attains the predetermined temperature.

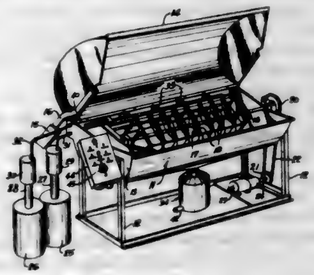
3,442,250
APPARATUS FOR THE DEPOSITION OF A SENSITIVE EMULSION FOR AUTORADIOGRAPHS
Maurice Cornu, Montgeron, and Louis Khau Van Kien, Aix-en-Provence, France, assignors to Commissariat à l'Energie Atomique, Paris, France
Filed Nov. 21, 1966, Ser. No. 595,673
Claims priority, application France, Nov. 26, 1965, 40,812
Int. Cl. B05c 11/00
U.S. Cl. 118—7 6 Claims

Apparatus for applying an emulsion to plates including a holder for holding a plurality of plates in a flat edge to edge relationship and a reciprocating means including a nozzle and a roller which pass over the plates to apply and smooth the emulsion on the plates. Adjustable cams are provided at each plate which may be positioned to



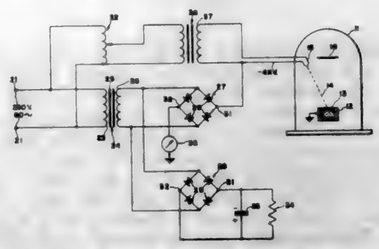
either actuate or not actuate the nozzle as it passes over a particular plate.

3,442,251
APPARATUS FOR COATING ARTICLES
Robert J. Perkel, P.O. Box 236, Dunellen, N.J. 08812
Filed Oct. 18, 1965, Ser. No. 496,914
Int. Cl. B05c 11/10, 11/00
U.S. Cl. 118—9 2 Claims



A metal coating apparatus includes a container having a rotary shaft supporting adjustable arm members forming a grid structure for the work parts. At least two tanks which may contain a metal solution and a reducing solution, respectively, are connected by pumps with conduits extending through the container and having nozzles which can spray the solutions upon the work parts rotating along with the grid. A centrifuge may be located below the container for removing metal residue. The container may be provided with a motor operated cover. The motors actuating the shaft, the pumps and the cover may be included in a single circuit connected to a timing mechanism.

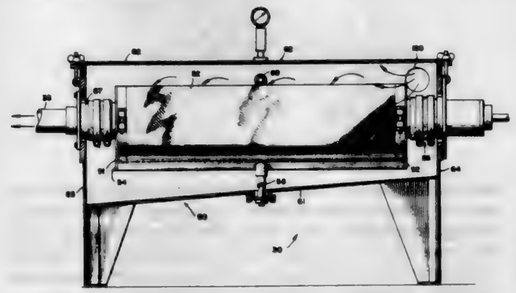
3,442,252
HIGH VOLTAGE D.C. CONVERTER CATHODE SUPPLY CIRCUIT HAVING MEANS FOR CONTROLLING THE VOLTAGE TO THE CATHODE
James W. Ackley, Los Altos, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed July 22, 1965, Ser. No. 473,965
Int. Cl. C23c 13/17
U.S. Cl. 118—50.1 12 Claims



A first rectifier connected to a high voltage transformer supplies current to a load. A second rectifier in parallel

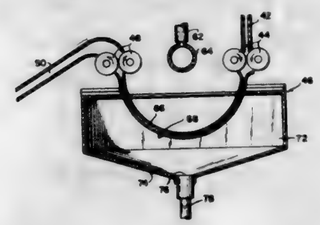
with the first one is connected to a large capacitor which absorbs the energy produced by the transformer reactance following an arc in the load, thus preventing the appearance of a high voltage spike across the load. A resistor across the capacitor dissipates the energy stored therein.

3,442,253
SCREENING SYSTEM AND APPARATUS
Marvin Scott, Hamilton, Ohio, assignor to U.S. Plywood-Champion Papers Inc., Hamilton, Ohio, a corporation of New York
Filed Feb. 8, 1967, Ser. No. 614,742
Int. Cl. B05c 9/10, 11/10; B01f 3/12
U.S. Cl. 118—603 11 Claims



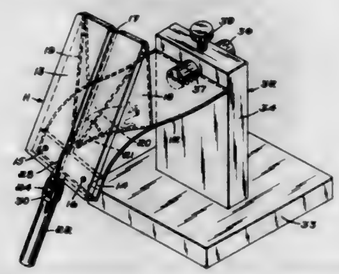
A system and apparatus for screening lumps out of liquids has within a housing a tubular screening element that is moved in an hourglass-shaped orbit while the material being screened moves from the inlet into the housing, through the tubular screen, thence through a flexible outlet passage communicating with the inside of the tubular screening element.

3,442,254
ELECTROSTATIC DEVELOPER
Hideo Akiyama, Los Angeles, and Maurice H. Artaud, Torrance, Calif., assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed Aug. 28, 1967, Ser. No. 663,681
Int. Cl. B05b 5/02; C23d 5/08
U.S. Cl. 118—637 6 Claims



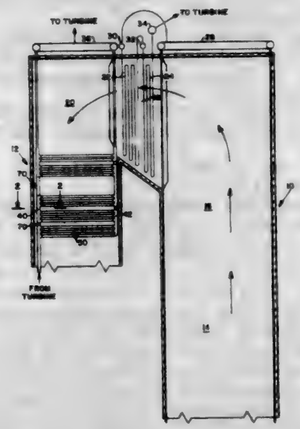
An electrostatic developing unit having a perforate guide member for receiving a substrate on which there is formed discriminate areas of electrostatic charge. A spray nozzle is positioned to direct a spray of an electrostatic developing solution pumped from a supply tank onto the guide member to pass through the perforations therein until intercepted by the substrate. The electrostatically-charged pigment contained in the solution is attracted to the discriminately-charged areas of the substrate. The remainder of the solution flows off the substrates and through the perforated guide member to be funneled back into the supply reservoir. The developed substrate is passed from the unit through a drying station for driving off any remaining solvent. The supply tank is preferably comprised of the bottles used for storing and shipping the developing solution, which bottles can be rapidly interchanged to provide fresh solution to the unit .

3,442,255
RESTRAINER FOR LONG TAILED ANIMALS
Daniel Berkowitz, New York, N.Y.
(213 Lakeview Gardens, Natick, Mass. 01760)
Filed May 8, 1967, Ser. No. 637,883
Int. Cl. A61d 3/00, 7/02
U.S. Cl. 119—103 10 Claims



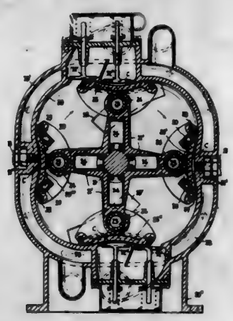
An apparatus for restraining long tailed animals comprising an open ended enclosure tapering to a constricted end into which the animal is drawn by passing its tail through a slot in the wall of the enclosure and restrained by clamping the tail. An opening near the constricted end of the enclosure provides access to the abdominal region of the restrained animal for intraperitoneal injection.

3,442,256
VAPOR GENERATOR TUBE BANK
Clarence C. Eich, Mountain Lakes, N.J., assignor to Foster Wheeler Corporation, Livingston, N.J., a corporation of New York
Filed Apr. 13, 1967, Ser. No. 630,726
Int. Cl. F22d 7/00
U.S. Cl. 122—406 11 Claims



A tube bank in which pairs of vertical tubes are connected to horizontal tubes in a vapor generator. Blocking means are provided in the vertical tubes for creating a restriction to the flow which is confined to the inner surfaces in the vertical tubes.

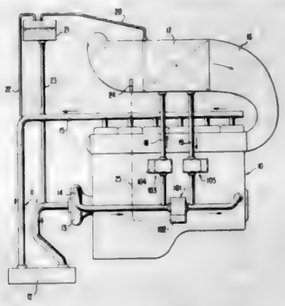
3,442,257
SLIDING PIVOTED PISTON ROTARY ENGINE
Hamilton Walker, 24 Kiripaka Road, Whangarei, North Island, New Zealand
Filed Mar. 7, 1967, Ser. No. 621,183
Claims priority, application New Zealand, Mar. 15, 1966, 144,495
Int. Cl. F02b *55/02, 55/08;* F01c *1/04*
U.S. Cl. 123—17 11 Claims



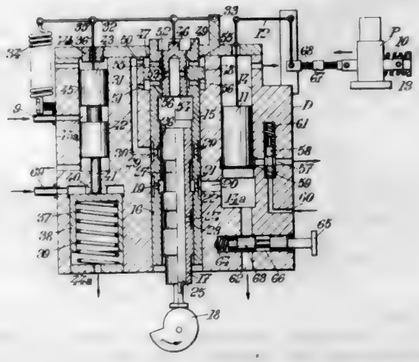
An improved rotary internal combustion engine comprising a stator having an intake port and an exhaust port, a rotor disposed in the stator so as to be capable of rotation about a central axis, the rotor including at least one arm, the or each arm pivoting a substantially rectangular or square shaped piston and the inside contour of the stator shaped so that both ends of the or each piston follow the contour evenly to provide a chamber between the stator and the piston, and a firing means positioned in the stator whereby in a turning of the rotor, fuel mixture is introduced at the intake port and confined in the said chamber between the stator and the piston so that on reaching the firing means the fuel mixture is ignited, the combusted gases force the piston past the exhaust port through which the combusted gases are discharged.

3,442,258
INTERNAL COMBUSTION ENGINE IN WHICH COOLING MEDIUM IS SUPPLIED FROM A PRIMARY COOLING INSTALLATION FOR THE ENGINE COOLING TO A SECONDARY COOLING INSTALLATION FOR THE PRECOMPRESSED COMBUSTION AIR
Frank Rüger, Waiblingen, Hans-Peter Gühne, Fellbach, Wurttemberg, and Herbert Lebig, Stuttgart, Germany, assignors to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Jan. 24, 1967, Ser. No. 611,334
Claims priority, application Germany, Jan. 26, 1966, D 49,217
Int. Cl. F02b *29/04;* F01p *5/10*
U.S. Cl. 123—41.31 22 Claims

An internal combustion engine comprising a primary cooling installation supplying liquid from a heat exchanger by way of a supply pump to the cooling spaces of the internal combustion engine and returning the liquid by way of a return line back to the heat exchanger, which is also equipped with a secondary cooling installation for the precompressed combustion air including a heat exchanger arranged in the conduit for the precompressed combustion air leading from the compressor to the engine intake manifold, whereby the heat exchanger of the secondary cooling installation is selectively supplied with cooling liquid by way of a supply line connected with the line section of the primary cooling installation between the supply pump and the cooling spaces and by way of a discharge line connected to the same line section of the primary cooling installation downstream of the place of connection of the supply line for the secondary cooling installation; a control valve is provided for controlling the flow of the cooling medium in the primary cooling installation and possibly also in the supply and discharge branch lines leading to and from the secondary cooling installation in such a manner that the flow of cooling medium to the secondary cooling installation increases as the flow in the line section of the primary cooling installation, bypassing the secondary cooling installation, decreases. The control valve may be actuated in dependence on the temperature of the precompressed combustion air or on a control magnitude reflecting such combustion air temperature.

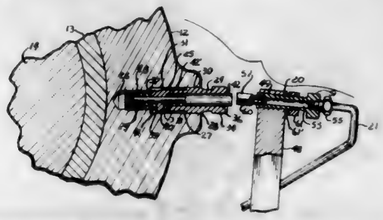


3,442,259
APPARATUS FOR REGULATING FREE PISTON GAS GENERATORS
Pinchas Paul Szereszewski, Asnieres, and Jean-Baptiste Guy, Lyons, France, assignors to Societe Industrielle Generale de Mecanique Appliquee S.I.G.M.A., Paris, France, a company
Filed Sept. 18, 1967, Ser. No. 668,478
Claims priority, application France, Sept. 21, 1966, 77,184; June 15, 1967, 110,571
Int. Cl. F02b *71/00, 41/10;* F02d *39/103*
U.S. Cl. 123—46 24 Claims



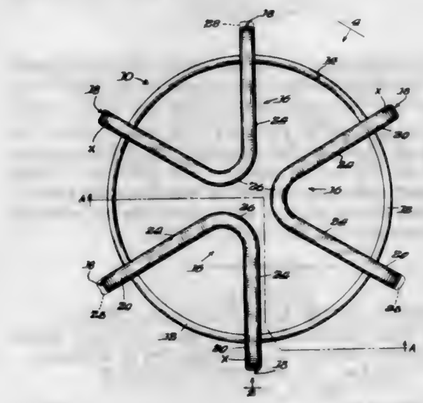
Apparatus for regulating free piston gas generators as a function of a variable factor related to the load of the gas generator. During the zone of low loads, for which the driven machine can not absorb all the gas generated by the gas generator, as the load increases, the outer dead point of the free piston(s) decreases progressively from its maximum value at no-load to its minimum value at a particular load which may be before or at the boundary between the zone of low loads and the zone of higher loads, and in said zone of higher loads, as the load increases, the outer dead point increases progressively.

3,442,260
TEMPERATURE-RESPONSIVE APPARATUS FOR PRESSURE FLUID POWER SHUT-OFF SYSTEMS FOR ENGINES, COMPRESSORS AND THE LIKE
William C. Exline, Salina, Kans., Clarence S. Kenworthy, Evanston, Ill., and Willard E. Warner, Hooker, Okla., assignors to Exline, Inc., Salina, Kans., a corporation of Kansas
Continuation-in-part of application Ser. No. 312,614, Sept. 30, 1963. This application Jan. 11, 1967, Ser. No. 608,565
Int. Cl. F02b *77/00;* F22b *37/47*
U.S. Cl. 123—198 11 Claims



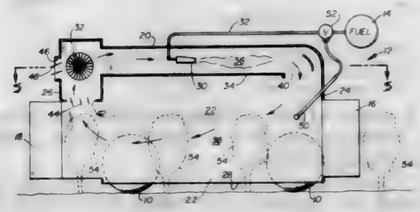
A temperature responsive structure in operating mechanisms having moving portions such as engine connecting rods wherein the temperature responsive device includes a fusible element retaining an actuating structure in a normal operating position. A power shut-down apparatus using a fluid pressure system and having a breakable closure positioned adjacent the path of the movable member whereby breaking of said closure will permit a change of pressure resulting in shutting down the power for the mechanism. A plunger movable in a body positioned on the movable member is arranged to pass by the breakable closure with clearance, and upon release of the plunger by fusing of the fusible element the plunger extends whereby in its path it strikes a breakable closure for change of pressure in the power shut-down apparatus. The temperature responsive apparatus is connected in a fluid pressure system such as a pressure lubrication system with valves whereby fusing of the fusible element moves the valves to apply the oil pressure to the plunger to effect extension thereof.

3,442,261
WIRE GRATES FOR STOVES
Leroy J. Berlik, Cleveland, Tenn., assignor to Hardwick Stove Company, Cleveland, Tenn., a corporation of Delaware
Filed Aug. 15, 1967, Ser. No. 660,834
Int. Cl. F24c *15/10*
U.S. Cl. 126—215 7 Claims



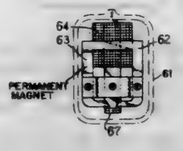
An article of manufacture, for use as a stove grate, comprising a base member and utensil supporting members having recurved mounting portions for accommodation of bending stresses, for side ventilation and for other purposes.

3,442,262
THERMAL DEFOLIATOR
Jay G. Porterfield and David G. Batchelder, Stillwater, Okla., assignors to Oklahoma State University, Stillwater, Okla., a corporation of Oklahoma
Filed July 28, 1967, Ser. No. 656,909
Int. Cl. F23c *5/00*
U.S. Cl. 126—271.2 7 Claims



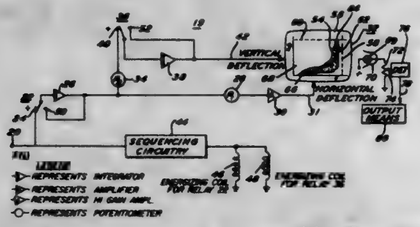
This invention relates to a defoliator for defoliating and desiccating crops. The invention includes a mobile structure including means of propulsion over crop lands. A shroud is carried by the mobile structure, the shroud being closed at the top, sides, and ends with an open bottom, the sides and ends terminating adjacent the ground and the forward and rearward ends having doors therein to admit and exit upstanding crops as the shroud is moved by the mobile structure over the ground. A heat producing means is mounted within the shroud whereby the air temperature therein is raised. A recirculating fan within the shroud moves the air past the heat producing means into contact with the crops. The device functions to defoliate and/or desiccate crops, such as cotton, to cause the leaves to die, shrivel and fall off to augment subsequent harvesting of the crops.

3,442,263
ELECTRONIC HEART-TROUBLE WARNING DEVICE
Pierre Jean Fernand Pascaud, 17 Rue Armengaud, Saint-Cloud, Hauts-de-Seine, France
Filed June 4, 1964, Ser. No. 372,631
Claims priority, application France, June 17, 1963, 938,335
Int. Cl. A61b *5/02*
U.S. Cl. 128—2.05 4 Claims



An electronic device comprising a portable apparatus including responsive means applied to a region of the body of the user where pulsations of the arterial pressure are perceptible. The responsive means can be, for example, in the form of a bracelet bearing against the cubital artery, a branch of spectacles bearing against the temporal artery. The responsive means are connected to an electronic unit which emits a warning signal when the rhythm of the pulsations reaches a dangerous zone and constitutes a sign of possible heart attack. The responsive means comprises a magnetic circuit which induces current in a coil by modifying its air gap by means of a lever applied against the skin of the user.

3,442,264
DATA PROCESSING METHOD AND MEANS
Joseph R. Levitt, 118 Heather Drive, Moorestown, N.J. 07960
Filed June 4, 1964, Ser. No. 372,493
Int. Cl. A61b 5/04
U.S. Cl. 128—2.06 30 Claims



1. A method of data processing comprising the steps of:
(a) obtaining data from a system in either a first or second physical state,
(b) transforming the data obtained in step (a) by a non-linear transformation which differentiates said data into either a first or second class corresponding respectively to the first and second physical states of said system,
(c) and indicating whether said transformed data of step (b) are in the first or second class defined by step (b) for establishing whether the system of step (a) is in said first or second state.

3,442,265
METHOD OF APPLYING A MEDICAL SPLINT
John H. Malven, 1230 E. Mission Lane, Phoenix, Ariz. 85020
Filed Feb. 14, 1966, Ser. No. 538,508
Int. Cl. A61f 5/04
U.S. Cl. 128—90 1 Claim



A splint for holding broken bones in position after they have been set comprising a thermal plastic structure adapted to conform with a broken limb, and having a reflective means provided with a slot therein adapted to permit heating of the thermal plastic through the slot to allow the thermal plastic to be readily bent to place the splint over the limb.

3,442,266
INTRA-UTERINE CONTRACEPTIVE DEVICE
Ota Krejčí, Danuše Krejčí, and Zdeněk Trávníček, Varnsdorf, and Jan Dvořák, Brno, Czechoslovakia, assignors to Vyzkumny Ustav Pletarsky, Brno, Czechoslovakia
Filed Feb. 13, 1967, Ser. No. 615,697
Claims priority, application Czechoslovakia, Feb. 11, 1966, 896/66
Int. Cl. A61f 5/46
U.S. Cl. 128—130 9 Claims



Two annular portions of physiologically inert filamentary synthetic plastic material are tangentially connected, and at least the material of one of these portions is stretch-drawn so as to be molecularly oriented.

3,442,267
THUMB SUCKING PREVENTER
Stanley James Krygier, 1700 Wawaset Ave., Wilmington, Del. 19806
Filed Jan. 5, 1967, Ser. No. 607,543
Int. Cl. A61j 17/00
U.S. Cl. 128—133 5 Claims



A thumb sucking preventer is in the form of a flexible hand covering mitt which includes protuberances capable of acting as pacifiers. The mitt may be manipulated to minimize or eliminate any adverse psychological affect commonly attendant with conventional thumb sucking preventers.

3,442,268
BREAST PAD
William Henry Bird, Somerset, N.J., assignor to Johnson & Johnson, a corporation of New Jersey
Filed Jan. 13, 1966, Ser. No. 520,508
Int. Cl. A41c 3/10
U.S. Cl. 128—280 10 Claims

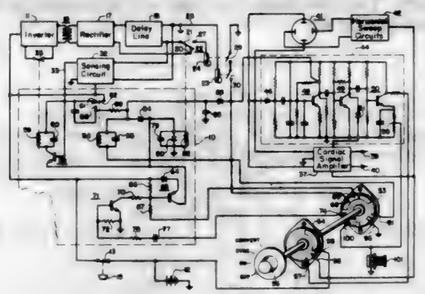


A pad for absorbing the lactal exudate from the female breast is constructed with a central portion designed to be positioned over the nipple of the breast and an absorbent layer having portions of relatively high fluid transfer rate and portions of lower fluid transfer rate extending outwardly from the central portion. The portions of high fluid transfer rate are positioned so that they substantially surround the central portion and so that they are oriented in a substantially circumferential direction.

3,442,269
DEFIBRILLATOR AND CONTROL CIRCUIT
Walter S. Druz, Oakbrook, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed Dec. 20, 1965, Ser. No. 515,018
Int. Cl. A61b 19/00
U.S. Cl. 128—419 6 Claims

There is described control circuitry for use in a defibrillator-cardioscope unit which circuitry displays substantial

patient and equipment protective features. Specifically, means are provided for triggering the defibrillator with a synchronizing signal developed from and in a predetermined phase relation to the patient's heart beat to deliver a single defibrillation impulse to the patient and for



coincidentally inhibiting further effective operation of the triggering signal source. There is also provided a selector switch having a plurality of control positions for variously interrelating the operation of the defibrillator and the cardioscope to provide safe, simplified operation of the combined unit.

3,442,270
SURGICAL BINDER
Charles Steinman, 105 Stevens Ave., Mount Vernon, N.Y. 10550
Filed Sept. 23, 1966, Ser. No. 581,581
Int. Cl. A61f 13/14
U.S. Cl. 128—540 4 Claims



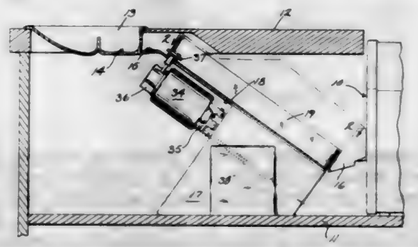
A surgical binder which may be rapidly secured and unsecured to the body of a user at substantial angular relationships. The fastening means includes a Velcro hook binder strip on one end portion and elongated nap strips on the other end, the strips extending a substantial distance inwardly from the end to allow joinder of the binder even when the ends are at a significant angular relationship to each other.

3,442,271
HAIR CURLER FOR THE EXECUTION OF PERMANENT WAVES AT ROOM TEMPERATURE
Joseph d'Angio, 64 Rue Victor Clappier, Toulon, Var, France
Filed June 2, 1966, Ser. No. 554,829
Claims priority, application France, June 8, 1965, 19,959
Int. Cl. A45d 1/06, 1/08, 1/10, 2/02, 2/06
U.S. Cl. 132—33 5 Claims



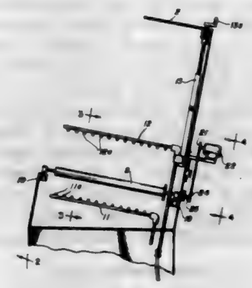
A hair curler having a base with a spindle on which is mounted a locking member for clamping a lock of hair between the base and the locking member, and a cage rotatably fitted on the locking member for winding of the free end of the clamped lock.

3,442,272
COIN CONVEYING APPARATUS
Arnold R. Buchholz and Charles T. Bergman, Watertown, Wis., assignors to Brandt Automatic Cashier Co., Watertown, Wis., a corporation of Wisconsin
Filed Dec. 15, 1967, Ser. No. 690,959
Int. Cl. C07d 1/00; B65g 15/14
U.S. Cl. 133—1 10 Claims



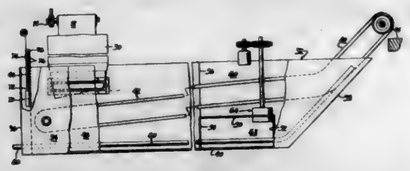
A coin conveyor apparatus is disclosed which comprises a pair of endless driven conveyor belts opposing each other over a bottom plate that extends from the delivery chute of a coin dispensing machine to a remote coin cup. A first of the conveyor belts has a fixed run and the second conveyor belt has a commensurate run that is biased towards such runs of the first belt to grip and transport coins therebetween. The first belt is driven by a motor driven wheel that frictionally engages the first belt, and the second belt is driven by its frictional engagement with the first belt. A control circuit for the motor is provided which is actuated by a signal from the coin dispensing machine and a time delay is included in the circuit to maintain the motor energized for a sufficient length of time to convey coins from the chute to the cup.

3,442,273
FILTER WASHING APPARATUS
Harry W. Hanish, 5825 E. Lewis, Ave., Scottsdale, Ariz. 85257, and Robert A. Steffensmeier, 5547 N. 2nd St., Phoenix, Ariz. 85012
Filed Aug. 31, 1967, Ser. No. 664,688
Int. Cl. B08b 3/02
U.S. Cl. 134—100 1 Claim



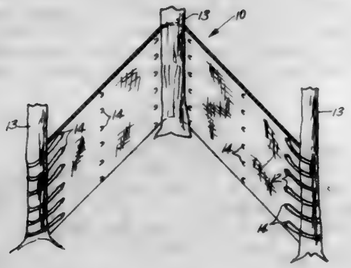
A washing apparatus for tubular engine air filters including support rollers which rotate the filter element, external and internal sparge pipes which spray washing solutions on the filter elements surfaces and a valving arrangement which permits the operator to select the washing liquid to be introduced into each of the sparge pipes, the selection permitted including hot and cold and clear or soapy water.

3,442,274
HEAT TREATING APPARATUS
William R. Keough, Birmingham, Mich., assignor of forty-five percent to Multifastener Company, Detroit, Mich., a partnership
Original application Oct. 11, 1963, Ser. No. 315,467, now Patent No. 3,372,065, dated Mar. 5, 1968. Divided and this application Nov. 28, 1967, Ser. No. 686,075
Int. Cl. B08 *3/04*
U.S. Cl. 134—108 6 Claims



Apparatus for heat treating articles by transfer from a heat treatment furnace into a quenching bath. The articles are passed through streams of cooling fluid continuously flowing towards the surface of the bath from a point above the surface of the bath. The downwardly directed streams will eliminate splashing of the quenching liquid into the furnace.

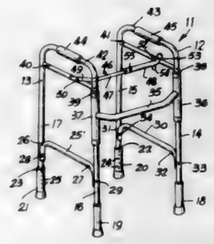
3,442,275
COMBINATION UTILITY DEVICE FOR HUNTERS
Wayne R. Ternes, Minneapolis, Minn. (3501 Claudette Drive, Sioux Falls, S. Dak. 57103)
Filed Sept. 21, 1967, Ser. No. 669,422
Int. Cl. E04f *10/02*
U.S. Cl. 135—5 1 Claim



A combination device for use by hunters which serves as a windbreaker, a signal to other hunters, is a hiding device for bow hunters when colored to resemble land, serves as a wrap-around raincoat, a waterproof wrapping device, a distress signal when laid flat, and it may also be used as an emergency skidding device for bringing a wounded hunter from the woods or a dead animal, etc. This device is made of a bright orange, lightweight nylon material and has a plurality of elastic loops spaced apart on the ends which may be stretched to engage with any of a plurality of hook members secured to the webbed surface and lends itself to be secured between trees.

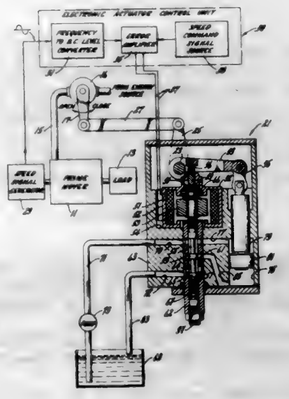
3,442,276
FOLDABLE SWINGABLE WALKER
Donald W. Edwards, 15 Central Park W., New York, N.Y. 10023, and Morton I. Thomas, Bakertown Road, Monroe, N.Y. 10950
Filed Nov. 29, 1967, Ser. No. 695,537
Int. Cl. A45b *1/00*; A61h *3/00*
U.S. Cl. 135—45 6 Claims

A foldable swingable walker is shown having a pair of opposed pivotably movable supports each of which includes a pair of opposed depending legs. Adjoining the top portions of the leg members of each support to one another is a first connecting member. A first transverse bar having a pair of end portions embraceably retaining adjacent leg portions therewithin extends across the walker from one of the supports to the other of the supports. The intermediate portion of the transverse bar extends outwardly.



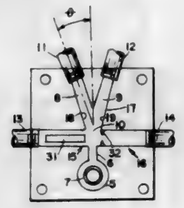
Connecting the upper intermediate portions of each of the leg members of each support to one another is a second connecting member. A transverse bar having stop members at the end portions thereof is pivotally connected to each second connecting member.

3,442,277
SPEED CONTROL SYSTEM
Bernard B. Barnes, Rockford, Ill., assignor to Woodward Governor Company, Rockford, Ill., a corporation of Illinois
Filed July 15, 1966, Ser. No. 565,619
Int. Cl. F01b *25/06*; F02d *31/00*; G05d *13/30*
U.S. Cl. 137—36 4 Claims



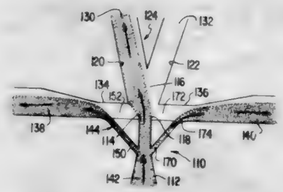
A speed control system wherein a high gain amplifier responds to the difference or error between (a) a desired or set point speed signal and (b) an actual speed signal to supply its output signal to a proportional actuator constructed and arranged to move the throttle or energy input controlling member of the prime mover to a position which is proportional to the amplifier output signal. The error is in this way restored substantially but not precisely to zero whenever the set point or the loading of the prime mover is changed, and the actual speed is returned to and maintained substantially but not precisely at the set point. To avoid over-correction and hunting, the amplifier is provided with a time integrating circuit (preferably a differentiator connected in a negative feedback path) and to provide an initial, quick response despits the integrator, the amplifier is provided with a time differentiating circuit (preferably an integrator connected in a negative feedback path) having a shorter time constant.

3,442,278
TEMPERATURE SENSITIVE SWITCH
Rudolph S. Petersen, Brookline, N.H., assignor to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware
Filed Feb. 28, 1966, Ser. No. 530,726
Int. Cl. F15c *1/14*
U.S. Cl. 137—81.5 10 Claims



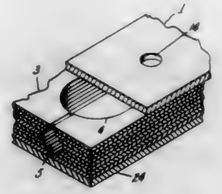
A device without moving parts for switching the flow of fluid from one to another channel in response to a change in temperature of fluid flowing in a preselected portion of the system, either through the switch itself, or elsewhere.

3,442,279
SELF-BIASED PURE FLUID AMPLIFIER
Elmer L. Swartz, Falls Church, Va., assignor to the United States of America as represented by the Secretary of the Army
Filed Oct. 19, 1966, Ser. No. 588,677
Int. Cl. F15c *1/14*
U.S. Cl. 137—81.5 7 Claims



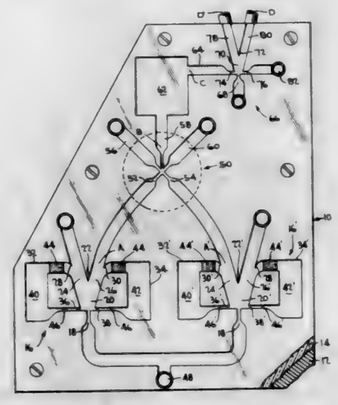
In a fluid amplifier means are provided for passing a portion of the power stream through the control channel in a direction away from the interaction chamber in order to create a region of reduced pressure within the control nozzle to ensure passage of the power stream through the chamber and to the fluid outlet on the same side of the interaction chamber as the control channel. The means for accomplishing this function is a channel with one end connected slightly downstream of the power source and the other end connected to a control channel upstream of the interaction chamber. Such means may be provided for each control channel.

3,442,280
FLUID AMPLIFIER AND METHOD OF MANUFACTURE
Willis A Boothe, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Original application Dec. 31, 1962, Ser. No. 248,630. Divided and this application June 27, 1966, Ser. No. 560,735
Int. Cl. F15c *1/10*, *5/00*
U.S. Cl. 137—81.5 2 Claims



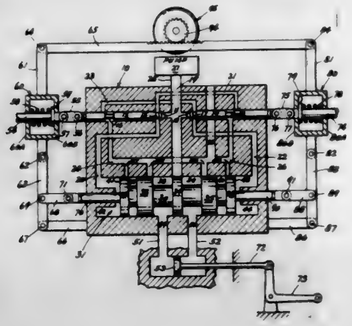
Fluid amplifiers having identical fluid flow paths and differing only in fluid flow capacity are fabricated from a plurality of laminations superposed between two cover members which may also be comprised of laminations. The laminations intermediate the cover members have the desired fluid flow pattern formed therethrough and a predetermined number of these laminations are superposed between the cover members to obtain the desired flow capacity. The fluid flow restrictors in the input flow paths of each flow pattern may be identical in shape to provide fluid flow restrictors having rectangular cross sections or may be nonidentical in shape to provide predetermined odd shaped cross sections.

3,442,281
CONSTANT FREQUENCY FLUID PULSE SYSTEM
Raymond W. Warren, McLean, Va., assignor to the United States of America as represented by the Secretary of the Army
Filed June 28, 1966, Ser. No. 561,298
Int. Cl. F15c *1/10*; G06m *1/12*
U.S. Cl. 137—81.5 7 Claims



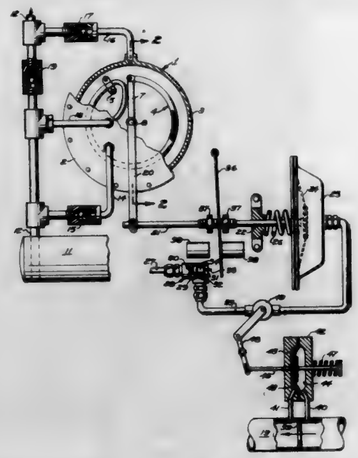
A constant frequency fluid pulse generator which will not be affected by changes in temperature and pressure. A pair of fluid relaxation oscillators exhibiting similar pressure-frequency curves are operated in parallel from a common source of fluid power. The outputs of these oscillators are coupled to a fluidic AND gate which produces an output which is the beat frequency of the two oscillator outputs. The beat frequency output is rectified in a fluidic capacitor and supplied to the control input of a monostable fluid amplifier which produces the pulse output.

3,442,282
SERVOVALVE
Norman B. Murphy, 61 Hidden Glen Road, Upper Saddle River, N.J. 07458
Filed Dec. 12, 1966, Ser. No. 600,933
Int. Cl. F15b 5/00; G05d 16/00; E03b
U.S. Cl. 137—85 15 Claims



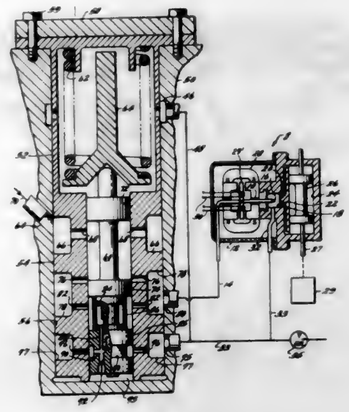
A servovalve having needle valves controlling a spool fluid flow valve, with a mechanical feedback connection between the spool valve and the needle valve.

3,442,283
ADDITIVE PUMP
James F. Williams, Sylmar, Calif. (% Pacific Lighting Service and Supply Co., 720 8th St., Los Angeles, Calif. 90017)
Continuation-in-part of application Ser. No. 467,595, June 28, 1965. This application Aug. 31, 1967, Ser. No. 664,761
Int. Cl. G05d 11/02; F04b 43/08
U.S. Cl. 137—98 7 Claims



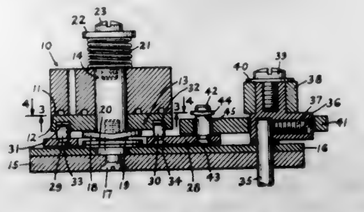
A pump for introducing small quantities of a liquid additive into a flow line which utilizes a Bourdon tube and a surrounding housing as a pump chamber, interposed with appropriate check valves between a source of liquid additive and a flow line; the Bourdon tube being connected by an oscillating shaft to a reciprocable motor moved in one direction by a motive fluid and in the opposite direction by a spring.

3,442,284
VISCOSITY COMPENSATED FLOW REGULATING DEVICE
James E. Hurtle, Cincinnati, and Howard B. Kast, Fairfield, Ohio, assignors to General Electric Company, a corporation of New York
Filed May 27, 1966, Ser. No. 553,545
Int. Cl. G05d 1/00
U.S. Cl. 137—110 7 Claims



A device is provided for compensating viscosity changes in a jet tube servo valve. The pressure of the control liquid supplied to the jet tube of the servo valve is varied as a function of liquid viscosity to maintain a constant velocity of the control liquid discharged therefrom. By having a constant velocity discharge of the control liquid, the rates of change of the servo valve are unaffected by temperature or other conditions which would affect viscosity. Changes in the liquid supply pressure are obtained by variably throttling the supply liquid with a movable spool piston, the position of which is determined by the pressure drop across a second reference nozzle.

3,442,285
VALVING MECHANISM HAVING CONTINUOUSLY FLUSHED LIQUID SEAL
Albert J. Faustini, Oakland, Calif., assignor, by mesne assignments, to American Optical Corporation, Southbridge, Mass., a corporation of Delaware
Filed May 18, 1966, Ser. No. 551,019
Int. Cl. 51/00
U.S. Cl. 137—240 2 Claims



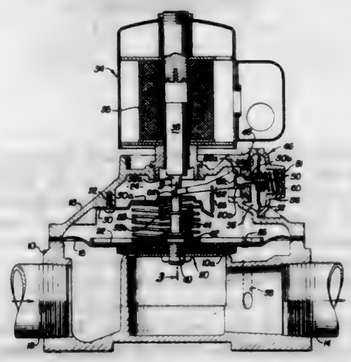
Easily assembled and disassembled multiport fluid handling face plate mechanism for controlling the flow of fluids passing therethrough and so constructed and arranged as to seal said structure and maintain such a sealed condition over extended periods of use.

3,442,286
LUBRICATED GATE VALVE HAVING LINE LOAD BEARING CAPABILITY
Clifford E. Anderson and William E. Lowrey, Houston, Tex., assignors to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Jan. 25, 1965, Ser. No. 427,807
Int. Cl. F16k 3/36, 5/22
U.S. Cl. 137—246.22 2 Claims



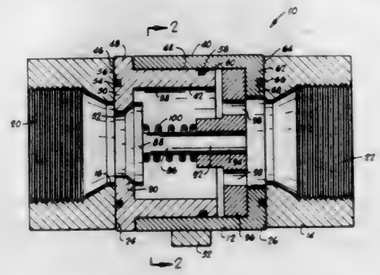
A valve having a line load bearing core including a relatively rigid seat box unit and generally flexible tubular hubs connected to the seat box unit. A portion of the load bearing core being surrounded by a relatively thin flexible body shell which is capable of containing fluid pressure and which flexes with the load bearing core under line loads.

3,442,287
PRESSURE REGULATOR AND SHUT-OFF VALVE
William A. Ray, North Hollywood, Calif., assignor to International Telephone and Telegraph Corporation, a corporation of Delaware
Filed June 30, 1966, Ser. No. 562,158
Int. Cl. F16k 31/145, 31/08, 31/365
U.S. Cl. 137—489 13 Claims



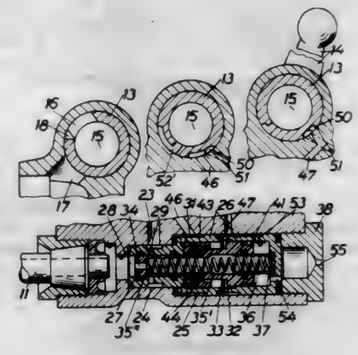
A quiet operating valve for low pressure operation of the diaphragm type regulator and shut-off valve construction. The diaphragm carries a valve member which is biased closed by a suitable diaphragm spring. The diaphragm spring is mounted off-center from the axis of the valve seat and valve member, resulting in a tilting or pivotal motion of the valve away from the seat to open the valve. The side of the diaphragm opposite from the main valve seat is exposed to inlet pressure by means of a bleed port through the diaphragm to provide a control pressure. This control pressure is ducted through a regulator valve to the downstream side of the main valve. A solenoid plunger holds the main valve in the closed position. The solenoid plunger also holds the regulator valve closed simultaneously with the main valve.

3,442,288
FLOW CONTROL APPARATUS MOUNTED IN A COUPLING
Domer Scaramucci, 3245 S. Hattie, Oklahoma City, Okla. 73129
Filed Apr. 4, 1966, Ser. No. 540,031
Int. Cl. F16k 15/00, 27/00; F16l 29/00
U.S. Cl. 137—515 6 Claims



Flow control apparatus for use between two opposed surfaces, said apparatus having an inner body slidingly disposed in an outer body to permit telescopic expansion, with seal means so located that the internal pressure contributes to the sealing engagement and having control means located in said body means to control the flow of fluid.

3,442,289
WATER VALVE FOR ROCK DRILLS
Carl Gösta Bernhard Ekwall, Nacka, Sweden, assignor to Atlas Copco Aktiebolag, Nacka, Sweden, a corporation of Sweden
Filed May 16, 1967, Ser. No. 638,976
Claims priority, application Sweden, May 18, 1966, 6,874/66
Int. Cl. F16k 11/22
U.S. Cl. 137—594 8 Claims

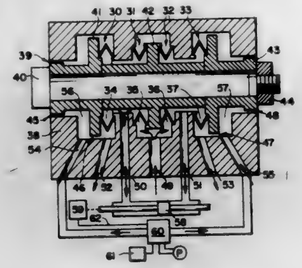


A water valve with controls therefor is provided for rock drills which operates in conformity with the throttle valve operating the rock drill so that the water valve moves in stepwise fashion from a partly open position to an open to a closed position corresponding to the movement of the throttle valve, and with the water valve having dual pneumatic servo motors for the operation thereof. With such an arrangement, the amount of flushing water admitted to the rock drill corresponds to the action of the rock drill during, for example, collaring or hole starting operations which normally are performed with the throttle valve in a partly open position, thus restricting the water flow to the drill steel and increasing the visibility of the collaring point during this preliminary operation.

3,442,290
RELIEF VALVE

Edward H. Phillips, Los Altos, Calif., assignor to Tydeman Machine Works, Inc., Redwood City, Calif., a corporation of California

Filed Oct. 20, 1967, Ser. No. 676,912
Int. Cl. F16d 15/00; F16k 17/00; F16h 21/04
U.S. Cl. 137—596.2 12 Claims

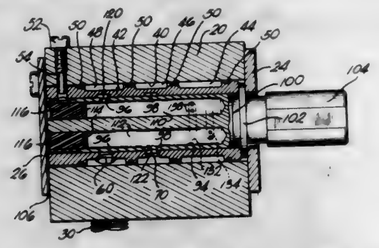


A relief valve comprises at least one pair of resilient washers arranged to have peripheral portions thereof contact each other and further arranged to form a chamber therebetween. When fluid pressure in such chamber exceeds a predetermined level, the washers expand to permit fluid to flow therethrough to return the pressure to such level.

3,442,291
ROTARY VALVE CONSTRUCTION

William Carls, Highland, Mich., assignor to Numatics, Incorporated, Highland, Mich., a corporation of Michigan

Filed June 14, 1967, Ser. No. 646,022
Int. Cl. F16k 3/26, 13/02
U.S. Cl. 137—625.41 6 Claims



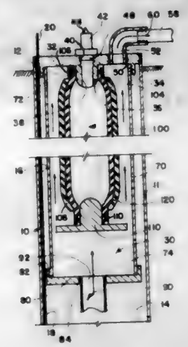
A valve construction utilizing a rotary valve member which is adapted to operate as a servo control with selective operation in either direction and a valve spool construction with axial passages for pneumatic pressure distribution together with a side wall formation to achieve balancing at all times.

3,442,292
ENERGY STORAGE UNIT

Candido Jacuzzi, Lafayette, Calif., assignor to Jacuzzi Brothers Incorporated, Little Rock, Ark., a corporation of California

Filed Oct. 23, 1965, Ser. No. 503,963
Int. Cl. F16l 55/04; F01b 19/04
U.S. Cl. 138—30 1 Claim

Apparatus for storing energy in fluid systems and especially for maintaining residual pressure in liquid systems, the apparatus including essentially a resilient inflated envelope positioned in the system. Preferably the envelope is elongated and has at least one end fitting adapated for attaching the envelope to the system; more preferably the envelope has a fitting at each end. Means are provided to prevent the envelope from totally blocking the system when inflated sufficiently and preferably,

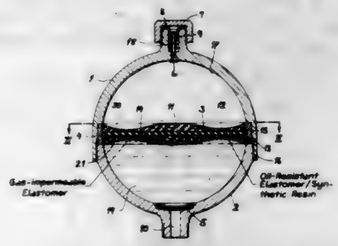


means are provided to permit reinflation of the envelope from time to time.

3,442,293
HYDRAULIC ACCUMULATOR WITH COMPOSITE ELASTIC DIAPHRAGM

Hans Erdmann, Gravenbruch, Germany, assignor to Alfred Teves G.m.b.H., Frankfurt am Main, Germany, a corporation of Germany

Filed Jan. 10, 1968, Ser. No. 696,885
Claims priority, application Germany, Jan. 26, 1967, T 33,080
Int. Cl. F16l 55/04
U.S. Cl. 138—30 10 Claims



A hydraulic accumulator whose elastic diaphragm consists of a thin circular layer (planar in the undeflected state of the membrane) of substantially gas-impermeable elastomeric material embedded in a disk of somewhat more permeable material resistant to permanent mechanical deformation and physical or chemical deterioration. The membrane is vulcanized to a metal ring along its periphery and has an undulate cross-section which has its greatest thickness at the center and at the periphery respectively, with a zone of lesser thickness between these areas.

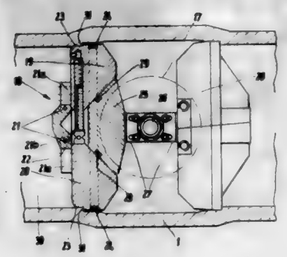
3,442,294
CLOSURE MEANS FOR USE DURING PRESSURE TESTING OF PIPES OR THE LIKE

Karl Bischoff, Mannheim, and Heinrich Kirsch, Mannheim-Sandhofen, Germany, assignors to Bopp & Reuther G.m.b.H., Mannheim-Waldhof, Germany

Filed Jan. 3, 1966, Ser. No. 518,488
Int. Cl. F16l 55/10
U.S. Cl. 138—90 13 Claims

Closure means for use during pressure testing of pipes and including sealing plate means extending transversely through a pipe and being composed of a pair of spaced outer parts having outer peripheral surfaces located on a common cylindrical surface and inner plane faces defining

an axially extending wedge-shaped space, and an inner wedge-shaped part in the aforementioned space and having opposite peripheral surfaces located on said common cylindrical surface and inclined faces engaging the inner faces of the outer parts, and axially adjustable pressure means engaging the inner part for pressing the faces of the latter against the corresponding faces of the outer

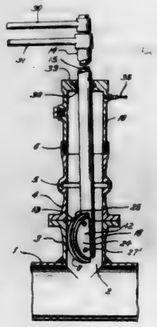


parts for pressing thereby an annular portion of the sealing plate means against an annular seat formed in the pipe and the peripheral surfaces of the outer parts against the inner pipe surface. The pipe is formed in the wall thereof with an opening having a smaller cross-section than the inner cross-section of the pipe and the parts of the sealing plate means are dimensioned to be insertable and removable through this opening.

3,442,295
PIPELINE PLUGGER

Burton Ver Nooy, Broken Arrow, Okla., assignor to T. D. Williamson, Inc., Tulsa, Okla.

Filed Jan. 12, 1967, Ser. No. 608,894
Int. Cl. F16l 55/10; F16k 3/10
U.S. Cl. 138—94 7 Claims

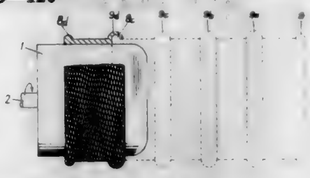


A pipeline plugger having a plug insertable from a housing mounted on a pipeline through a lateral opening in the pipeline to a seated position adjacent the opening in the pipeline, to form a fluid barrier. The plug is composed of two semi-circular portions, each pivoted about a common axis by concentric shafts having their longitudinal axis coaxial with the common axis. The shafts extend through the housing and are rotated about their axis by handles and rotate the plug portions from a collapsed position for insertion to an expanded position for seating. The shafts are mounted by a mounting means as they pass through the housing such that a fluid seal is maintained between the housing and the shafts while providing for rocking movement of the shafts about a fulcrum, for their longitudinal movement in the housing, and for rotation about their axes.

3,442,296
FILAMENT WOUND ELEMENT

Robert J. Short, Cincinnati, Ohio, assignor to Justin Enterprises, Inc., Fairfield, Ohio, a corporation of Ohio

Original application Apr. 3, 1963, Ser. No. 270,388, now Patent No. 3,203,845, dated Aug. 31, 1965. Divided and this application Feb. 23, 1965, Ser. No. 434,321
Int. Cl. F16l 11/00
U.S. Cl. 138—120 4 Claims

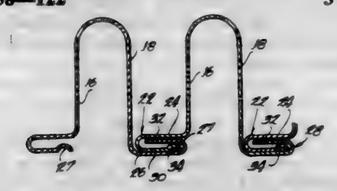


This invention relates to filament wound hollow structures formed by hollow units in interlocking relation, and characterized by a substantially uniform internal cross section throughout its length.

3,442,297
FLEXIBLE TUBING

George Wesesku, 135 Pleasant Ave., Bloomingdale, Ill. 60108

Filed Apr. 21, 1967, Ser. No. 632,669
Int. Cl. F16l 11/16; H01b 7/20
U.S. Cl. 138—122 3 Claims

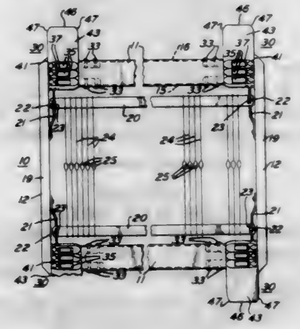


A wound flexible tubing which is fabricated from a flat ribbon strip that is formed to provide an upstanding rib and immovably fixed interlocked joints between the spirally wound length thereof. A packing can be included sandwiched between the flange forming the joints to provide an airtight joint.

3,442,298
LOOM HARNESS

Charles F. Kramer, Philadelphia, Pa., assignor to Steel Heddle Manufacturing Company, Philadelphia, Pa., a corporation of Pennsylvania

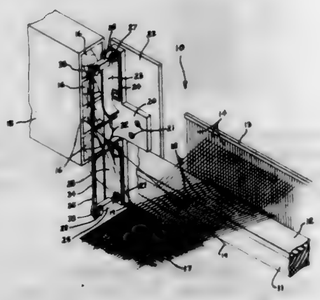
Filed June 30, 1967, Ser. No. 650,457
Int. Cl. D03c 9/06
U.S. Cl. 139—91 8 Claims



Heddle frames having hollow tubular metallic top and bottom rails with connectors to the end braces. The con-

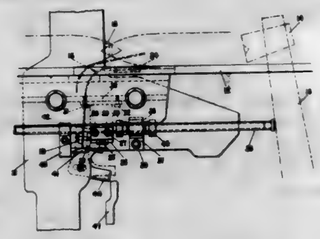
nectors may have guides to maintain the separation of the frames during shedding.

3,442,299
WEFT THREAD RESTRAINER
Joe S. Callahan, 496 Rose Lane, Raleigh, N.C. 27610
Filed Aug. 7, 1967, Ser. No. 658,862
Int. Cl. D03d *43/10*
U.S. Cl. 139—170.3 6 Claims



In abstract, a preferred embodiment of this invention is a weft thread restraining device using an elastomer member to prevent the idle threads of a multiple shuttle box loom from becoming entangled in the selvage of the cloth being woven.

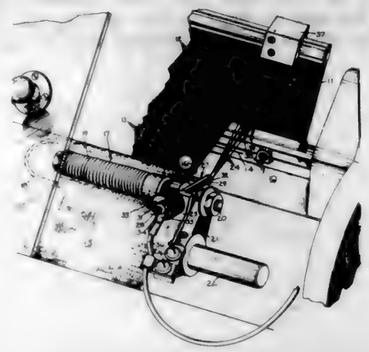
3,442,300
LOOM STOPPING MECHANISM
Roger G. Papelian, Milford, Mass., and Andre J. Fontaine, Woonsocket, R.I., assignors, by mesne assignments, to John Donald Marshall and Horace L. Bomar, as trustees of The Carolina Patent Development Trust
Filed Sept. 11, 1967, Ser. No. 674,035
Int. Cl. D03d *51/40*
U.S. Cl. 139—341 5 Claims



Protection devices for fly-shuttle loom operable individually from opposing shuttle boxes for initiating loom-stoppage prior to beat-up if the shuttle is not present or is not properly positioned within its intended box.

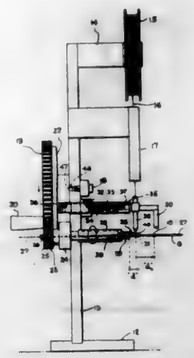
3,442,301
LOOM STOP MOTION
John H. Nydam, North Uxbridge, Mass., assignor, by mesne assignments, to John Donald Marshall and Horace L. Bomer as trustees of The Carolina Patent Development Trust
Filed July 27, 1967, Ser. No. 656,393
Int. Cl. D03d *51/34*
U.S. Cl. 139—370 5 Claims

A stop motion for looms of the type adapted to insert pre-measured lengths of filling into sheds formed by warp threads having a means for stopping said loom upon detection of the absence of filling or a length of



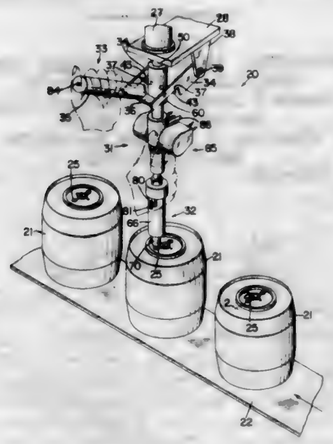
filling which does not completely traverse the width of the shed.

3,442,302
METHOD OF FABRICATING FILAMENT SUPPORT LOOPS
Robert M. Brady, Hazlet, Charles W. Hawkey, Caldwell, and John E. Kirby, Hazlet, N.J., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Original application Apr. 20, 1964, Ser. No. 361,176, now Patent No. 3,342,224, dated Sept. 19, 1967. Divided and this application June 9, 1967, Ser. No. 644,952
Int. Cl. B21f *45/00*; H01k *1/18*
U.S. Cl. 140—71.5 5 Claims



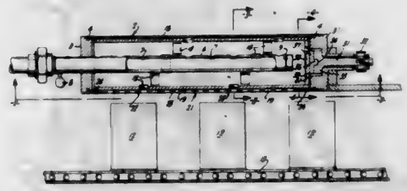
The method of forming and mounting an arcuate wire support member on an elongated filament from a spool of relatively stiff wire comprising the steps of: holding the filament in a die, inserting the free end of the support wire into the die in a direction normal to the filament, forming an enlarged body portion of several convolutions with the support wire, forming a radial spoke with the support wire from the last of the enlarged body portion convolutions to the filament and winding the support wire about the filament first in one direction and then in the reverse direction for several turns to securely lock the support wire to the filament. The support wire is then cut adjacent the outer convolutions and upon slight expansion of the outer convolutions forming the enlarged body portion the secured end of the wire will fall well within the outer convolutions.

3,442,303
APPARATUS FOR CHARGING CONTAINER MEANS WITH A CHARGING FLUID
Ronald D. Kellems, Henrico County, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Oct. 6, 1966, Ser. No. 584,889
Int. Cl. B65b *39/00*
U.S. Cl. 141—18 12 Claims



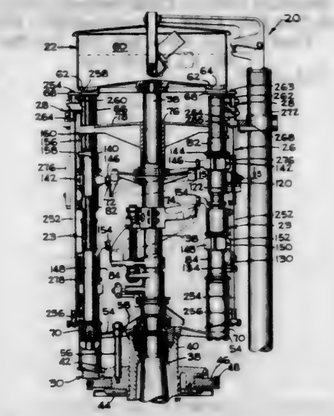
An apparatus for charging dispensing containers, such as beer kegs, or the like, with a charging fluid, such as carbon dioxide. The apparatus of this invention is of simple and economical construction and has injector head means which may be readily positioned both vertically and through a limited area in a substantially horizontal plane to enable rapid and accurate alignment thereof relative to each associated dispensing container to be charged.

3,442,304
FILLING APPARATUS
Gerhart A. Guckel, Los Altos, and Ezra E. Theys, San Mateo, Calif., assignors to James Dole Engineering Co., San Francisco, Calif., a corporation of Nevada
Filed Apr. 28, 1966, Ser. No. 545,935
Int. Cl. B65b *43/00*
U.S. Cl. 141—134 8 Claims



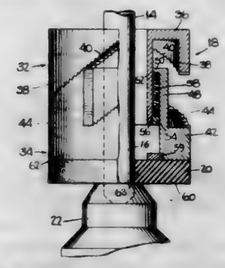
In a rotary-type product filling apparatus comprising a ported rotor valve within a cylindrical casing having a lengthwise extending product discharge slot, a self-lubricating seal of yieldable flexible plastic material is positioned between the casing wall and the valve. The seal has an integral ported plug keyed in the slot, which holds the seal in position.

3,442,305
FLUID FLOW CONTROL APPARATUS
Boris Cimlov, San Jose, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed July 8, 1966, Ser. No. 563,736
Int. Cl. B65b *57/02*
U.S. Cl. 141—141 20 Claims



A fluid flow control apparatus for controlling the opening and closing of an inlet valve and a foot valve associated with a vertically movable telescopic variable capacity measuring chamber of a dispenser. The apparatus including a pivotally mounted vertical shaft with vertically elongated cams rigid therewith. The shaft and cams are movable between a first position for simultaneously opening the inlet valve and closing the foot valve while the chamber is increasing in size, and a second position for simultaneously releasing the inlet and foot valve when the chamber is decreasing in size thereby increasing the pressure within the chamber and opening the foot valve to discharge liquid into a container. A no-container no-fill device is contacted by the container carriers to determine the presence or absence of a container therein, and upon detection of the absence of a container locks the vertical shaft in said first position.

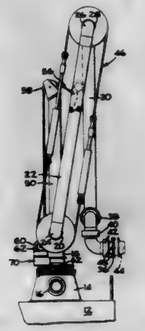
3,442,306
STEP SPACER
Richard F. De Rose, 2518 Lawn St., Racine, Wis. 53404
Filed May 24, 1966, Ser. No. 552,583
Int. Cl. B65b *1/04, 3/00*; B67c *3/00*
U.S. Cl. 141—368 10 Claims



An adjustable stepped spacer device used in conjunction with a filling tube. Said device comprises two cylindrical members formed with mating inclined step portions and having means to resiliently urge the members together so that the step portions engage one another. The lower of the two members frictionally engages the tube and the upper member abuts a relatively stiff spring which surrounds the tube and is interposed between the spacer

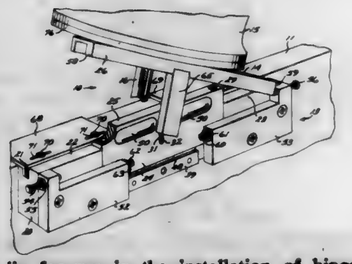
and the filling tube housing. By relative rotating the member adjustments in filling height can be made without shutting down the filling organization.

3,442,307
MATERIAL TRANSFERRING APPARATUS
Neal E. Jameson, Orange, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Deleware
Filed Jan. 28, 1966, Ser. No. 523,788
Int. Cl. B65b *3/04*
U.S. Cl. 141—387 10 Claims



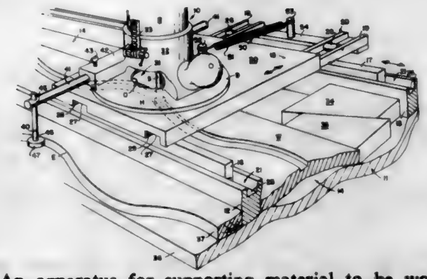
A fluid material transferring apparatus of the marine loading arm type, including an upright riser conduit, an inner arm conduit mounted on the riser conduit for pivotal movement about a generally horizontal axis, a winch and cable mechanism powered by an hydraulic system for pivoting the arm conduit about this axis, and a brake mechanism associated with the winch and hydraulic system in such a manner that in the absence of a predetermined hydraulic pressure the brake will automatically set and prevent the winch from rotating, and in the presence of that hydraulic pressure the brake will automatically release the winch. Also provided are a manual lockout assembly for holding the brake in released position when the hydraulic system is underpressured, and a slip coupling to permit the winch to rotate, though the brake is set, when excessive strain is exerted in the cable.

3,442,308
JIG FOR INSTALLATION OF HINGES
John R. Steffens, 17341 Delia Ave., Orange, Calif. 92667
Filed Dec. 22, 1966, Ser. No. 603,844
Int. Cl. B27c *5/10*; B27m *3/00*; B27f *5/02*
U.S. Cl. 144—27 14 Claims



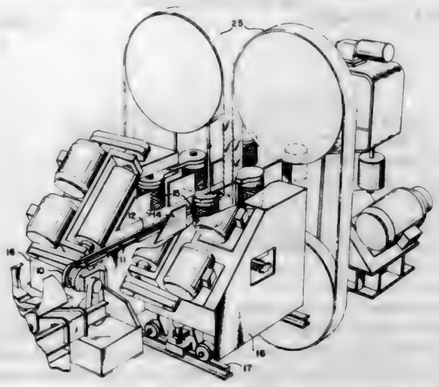
1. A jig for use in the installation of hinges comprising:
an elongated frame having a longitudinal axis;
a lineal track on said frame extending along said axis;
an elevation control track section on said frame, said track section being vertically movable between a first lower position and a second upper position;
a carriage removably disposed on said track section for movement therealong in a lineal path, means on said carriage for mounting on said carriage a router having a depending bit;
first stop means on said carriage and said frame for limiting said carriage movement along said track section to a first predetermined distance when said track section is in said first lower position;
and second stop means on said carriage and said frame for limiting said carriage movement along said track section to a second predetermined distance when said track section is in said second upper position, said first predetermined distance being substantially less than said econd predetermined distance.

3,442,309
COMBINATION TEMPLATE, WORK SUPPORT AND GUIDE FOR ROUTER
Thomas F. Jentsch, 7064 Bollinger Road, San Jose, Calif. 95129
Filed Feb. 13, 1967, Ser. No. 615,776
Int. Cl. B27c *5/02*
U.S. Cl. 144—144 10 Claims



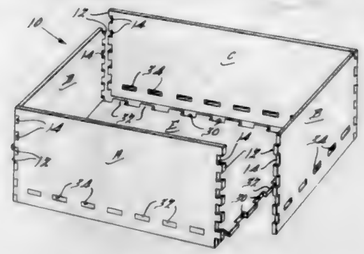
An apparatus for supporting material to be worked upon parallel to a template and supporting a carriage for a router for guided movement in any direction along a horizontal plane in accordance with the shape of such template.

3,442,310
GUIDING A LOG THROUGH THE CUTTER HEADS AND SAWS OF A PROFILE MILL
Leonard A. Mitten and Robert E. Chapman, Vancouver, British Columbia, Canada, assignors to Ernest E. Runnion, Shelton, Wash.
Filed Dec. 28, 1966, Ser. No. 605,439
Int. Cl. B27c *1/08*, *1/14*; B27b *1/00*
U.S. Cl. 144—312 12 Claims



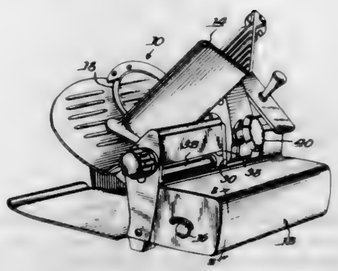
A mill profiling a conveyed log to form guide flats upon the bottom and two sides of a log with the bottom flat complemented by shallow re-entrant reference points serving a guide function correlating the log to the side cutters while the side flats are taking shape upon the leading end of the log, and with the side cutters having a downward thrust component to seat the advancing log, and having an advanced conveyor system.

3,442,311
DOVETAIL JOINT
Jeff S. Rhyne, 537 E. Lafayette St., Marianna, Fla. 32308
Filed Jan. 11, 1967, Ser. No. 608,545
Int. Cl. B27f *1/08*; F16b *5/07*; E04b *1/54*
U.S. Cl. 144—319 9 Claims



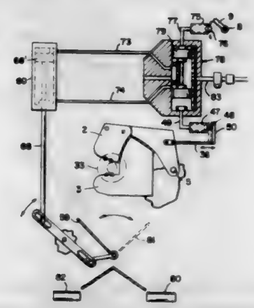
A method of forming a right angle joint between two panel members wherein an edge of each member is stamped to form alternate dovetail tenons and mortises along that edge, whereafter the panel members are pressed together at right angles to force the tenons on the one member into the mortises on the other member. As the tenons enter the mortises, the material of each deforms to allow the small edge dimension of the mortises to pass the large leading portion of the tenons and allow the tenons to seat fully within the mortises, whereupon the deformed material of the mortises expands to grasp the root of the tenons and form a joint interlocking in both directions of relative movement.

3,442,312
SLICER
Edward C. Karp, Belvidere, Ill., assignor to Sanitary Scale Company, Belvidere, Ill., a corporation of Illinois
Filed May 15, 1967, Ser. No. 638,470
Int. Cl. B23d *19/00*, *45/18*
U.S. Cl. 146—102 10 Claims



A food slicing machine having a side mounted power module for automatically reciprocally driving the hopper. When the automatic hopper drive is stopped, the hopper stops automatically at its loading position and automatically disengages from its drive to provide free manual movement. Automatic drive may be reinitiated regardless of the position of the hopper.

3,442,313
PITTER AND SORTER FOR SEPARATING PITTED FROM UNPITTED PEACH HALVES
William H. Cudd, Dixon, and Robert A. Soulier, Davis, Calif., assignors to Filper Corporation, San Ramon, Calif., a corporation of California
Filed Jan. 16, 1967, Ser. No. 609,675
Int. Cl. A23n *3/00*; A47j *25/00*
U.S. Cl. 146—222 8 Claims



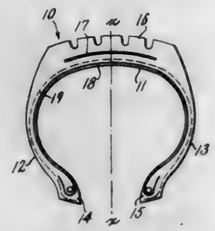
A sorter actuatable for separating clingstone peach halves having split pit halves attached thereto from halves pitted by a torque type pitter, in which actuation of the sorter is effected by movement of pit gripping and fruit bisecting blade through the halves of a split pit, instead of gripping the pit.

3,442,314
HOUSING FOR SLIDE RULES AND THE LIKE
Friedrich Müller, Hamburg, Germany, assignor to Dennert & Pape Arisio-Werke KG, Hamburg, Germany
Filed Mar. 7, 1967, Ser. No. 621,257
Claims priority, application Germany, Mar. 10, 1966, D 32,946
Int. Cl. A45c *1/04*; A45f *5/02*; B65d *85/00*
U.S. Cl. 150—52 6 Claims



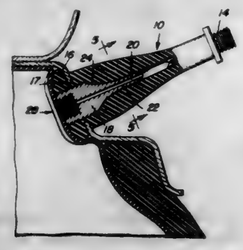
The present invention concerns a housing, especially for slide rules, which comprises a casing of approximately rectangular cross section which is open at the top and closed at the bottom and consists of a substantially stiff shape-retaining synthetic material while a closure cap or flap of flexible material is firmly connected to the upper portion of the casing for selectively closing and opening the upper end of said casing. The flap has one end thereof provided with perforations while the back side of the casing is provided with protrusions extending through said perforations and connected to the loop extending around the upper portion of the casing, said protrusions connecting the flap to the casing.

3,442,315
PNEUMATIC TIRES
Henri Mirtain, Compiegne, France, assignor to Societe Francaise du Pneu Englebert, Margny-les-Compiegne, Oise, France, a corporation of France
Filed May 18, 1966, Ser. No. 551,128
Claims priority, application France, June 1, 1965, 19,086
Int. Cl. B60c 5/00, 9/00, 11/00
U.S. Cl. 152—354 7 Claims



A penumatic radial ply tire construction characterized by a predetermined, deliberately incorporated degree of unbalance or asymmetry to reduce frequency resonance and vibration energy transmission between such tires and a vehicle on which they are mounted. The unbalance results from the provision, in combination with the radial ply structure of the carcass, of a bias-cut carcass ply having no balancing ply with an equal and opposite cord angle associated therewith. Each tire is specified for a prescribed manner of mounting on a vehicle to ensure that when the tire is mounted for a predetermined normal direction of rotation, it will have a predetermined one of its sidewalls facing outwardly of the vehicle, and in each tire the inclination of the cord elements in the bias-cut ply, considered as extending from a bead toward the crown region of the carcass, is in the normal direction of rotation of the tire in the region of the outwardly facing sidewall and opposite to the normal direction of rotation in the region of the inwardly facing sidewall.

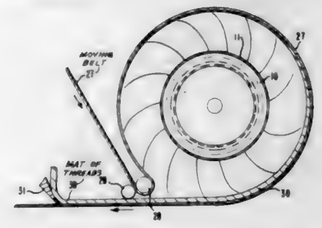
3,442,316
INNERTUBE VALVE STEM FOR TUBELESS RIMS
Joseph B. McMaster, Sherwood Road, Cockeysville, Md. 21030
Filed Aug. 10, 1966, Ser. No. 571,444
Int. Cl. B60c 29/00
U.S. Cl. 152—427 4 Claims



A valve stem is disclosed which is easily replaceable and serves equally well with tubeless as well as tubed tires which use Schrader type valves. There is provided a button head and adjacent groove at the base of a tapered elastomer valve stem body. This end of the assembly also has a tapered and bored metal insert secured by ridges and having a female thread.

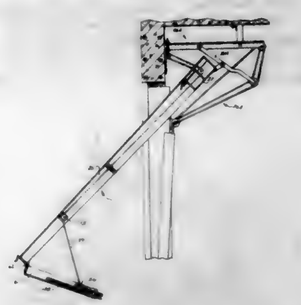
For an airtight seal, the button head snaps against the rim when the stem is pulled through the valve stem aperture of the rim in the case of either tubless or tubed tires. Where an inner tube is used, it is provided with only an aperture. A base having a male threaded shank is inserted into the tube with the shank protruding and this is securely threaded into the female thread of the stem bringing the button head firmly into airtight contact with the the surface of the inner tube.

3,442,317
PROCESS FOR ISOLATING ELASTOMERS FROM INTIMATE MIXTURES THEREOF WITH VOLATILE LIQUIDS
Carson E. Wieland, Beaumont, Tex., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Oct. 19, 1965, Ser. No. 497,680
Int. Cl. F26b 3/04; B01d 1/16
U.S. Cl. 159—48 1 Claim



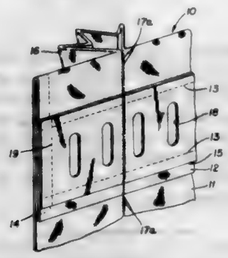
The recovery of elastomers from intimate mixture with a volatile liquid by introducing said mixture into a rotating chamber with at least one peripheral orifice, said elastomer being recovered in the form of fine filaments in (1) a vaporization zone and (2) a recovery zone, both zones being substantially free of said volatile liquid.

3,442,318
BI-FOLD DOOR WITH STANDARD COMPONENTS
Wesley A. Smith, Drummon Island, Mich., assignor to Tilt-A-Door Corporation, Detroit, Mich., a corporation of Michigan
Filed Mar. 27, 1967, Ser. No. 626,264
Int. Cl. E05d 15/26
U.S. Cl. 160—193 6 Claims



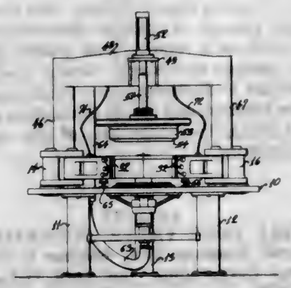
A door construction for a building including an upper door panel and means for pivotally mounting the upper door panel adjacent its upper end on a horizontal axis fixed with respect to the building. A pulley assembly is secured to the upper end of the door and to the building and is movable through a predetermined orbit for initiating the opening and closing of the door panel and for the controlling or retarding of such movement. The door is balanced to remain in either its open or closed position or an intermediate position. A lower panel is hinged to the lower edge of the upper panel and is arranged to be maintained outside of the building when the door is open or partially open. A flexible elongated element is resiliently connected to the lower panel so that upon opening of the door construction, the lower panel is pivoted into contact with the lower rear surface of the upper panel and upon closure of the door construction the lower panel is dropped to form a depending extension of the upper panel.

3,442,319
PINCH-PLEATED DRAPERIES
Dorothy J. Barbour, 676 Leetonia Road, Marion, Ohio 43302
Filed Jan. 16, 1967, Ser. No. 609,626
Int. Cl. A47h 1/02, 13/14
U.S. Cl. 160—330 2 Claims



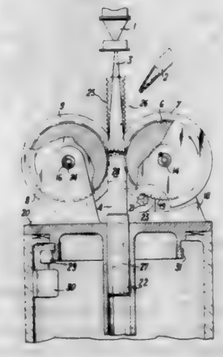
Drapery material is formed into panels, each having a narrow down-turned top fold to inner and outer sides of which has been stitched in superposed relation a continuous narrow strip of reinforcing or stiffening material and a continuous narrow strip of perforated material, respectively. Spaced peats formed in the folded top portions of the panels are retained in given pleated condition by stitching through the superposed layers, and this stitching anchors the narrow strips against lateral extension. Panels are supported at a window as by a rigid rod threaded through the perforations of the perforated strip not occupied by the pleats.

3,442,320
APPARATUS FOR MAKING SHELL CORE AND MOLD PRODUCTS
Roy C. Hathorn, 1309 Kilby Terrace, Anniston, Ala. 36201
Filed Aug. 16, 1966, Ser. No. 572,857
Int. Cl. B22c 13/08, 13/12, 15/22
U.S. Cl. 164—165 5 Claims



A split core box having a pair of cooperating, semi-annular sections with mold cavities therein. The sections are pivotally connected to each other and are supported by a base plate. Toggle links are provided between the mold sections and the base plate whereby the mold sections are rotated selectively from a forming position to a release position whereupon the product is actually presented to the operator or is dropped onto a conveyor.

3,442,321
DEVICE FOR CONTINUOUS CASTING OF REFRACTORY MATERIALS
Pierre Blum and Jacques Devillard, Grenoble, Isere, France, assignors to Commissariat à l'Energie Atomique, Paris, France
Filed June 1, 1966, Ser. No. 554,530
Claims priority, application France, June 3, 1965, 19,352
Int. Cl. B22d 27/02, 11/06; B28b 3/12
U.S. Cl. 164—250 8 Claims



An apparatus for the continuous melting and casting of refractory materials comprising an electron gun disposed axially above a crucible formed at the point where a pair of grooved pulleys meet and a lateral conduit for the continuous delivery of particles of material to be melted in the stream of electrons. Undesirable deposits on the side wall of the crucible are avoided by imparting to the wall a continuous movement thereby continually renewing the wall as the ingot is cast. The wall is cooled by water passing through the hub of each pulley.

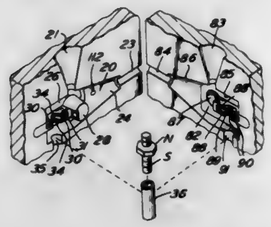
3,442,322
FLEXIBLE DUMMY BAR FOR CONTINUOUS CASTING MACHINES
Herbert Lemper, Pittsburgh, Pa., assignor to Mesta Machine Company Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 9, 1966, Ser. No. 578,313
Int. Cl. B22d 11/08
U.S. Cl. 164—274 8 Claims



I disclose a flexible dummy bar for continuous casting machines, said dummy bar comprising an elongated flexible band member, a plurality of gauge blocks loosely mounted on said band member, said gauge blocks each being of a thickness equal to that of a continuous body to be cast, said gauge blocks being disposed in a tandem array along the length of said band member and being relatively closely spaced with clearances such as to permit flexure of said band member when said dummy bar is passed through said casting machine, at least some of said gauge blocks being shaped so as to straddle portions of

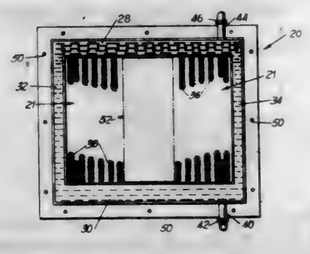
said gauge blocks in a direction longitudinal of said band in order to present a substantially and continuously smooth surface to said casting machine.

3,442,323
APPARATUS FOR MAKING BATTERY CABLE TERMINALS
Jack R. Lewis, Norristown, and George D. Nagle, Conshohocken, Pa., assignors to Keystone Cable Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed May 19, 1966, Ser. No. 551,310
Int. Cl. B22d 19/00
U.S. Cl. 164—332 5 Claims



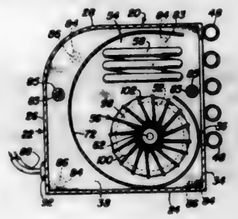
Apparatus is provided for making battery cable terminals which includes relatively movable die members having an interior terminal forming cavity with openings for insertion of a cable and for the introduction of molten metal to be shaped by the interior space. A stud supporting member is provided movably mounted with respect to the die members for supporting a stud within the space in predetermined relation to partition walls which separate free clamping ends of the terminal. The stud supporting member is movable into engagement with a wall portion of one of the partition walls and mounting portions of the stud supporting member are movable in a plurality of directions one of which is perpendicular to the other.

3,442,324
HEAT RECOVERY DEVICE FOR TURBINE GASES
Paul Eugene Clay, Jr., and Robert Frederic Tucker, Shreveport, La., assignors to American Machine & Foundry Company, a corporation of New Jersey
Filed Mar. 6, 1967, Ser. No. 620,716
Int. Cl. F28f 27/02, 13/06
U.S. Cl. 165—38 9 Claims



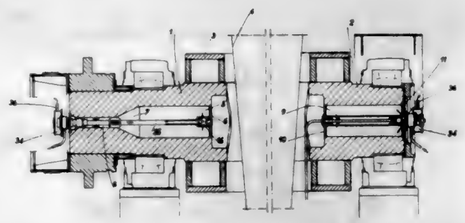
A heat exchanger wherein a supply header, a discharge header and two fluid conducting members are connected to form concentric ducts. Thus, water flowing from the supply header to the discharge header surrounds completely the innermost duct. Heat exchanger tubes located within the innermost duct interconnect the supply header to the discharge header.

3,442,325
AIR COOLED HEATER GRILL
Edward L. Parr, El Cajon, Calif., assignor to Wendell L. Thompson, Burbank, Calif.
Filed Oct. 23, 1967, Ser. No. 677,151
Int. Cl. F24h 3/08
U.S. Cl. 165—39 10 Claims



A heat generator including a casing having an air inlet and an air outlet with tubes forming a grill which spans the air outlet of the casing, which tubes are provided for supplying air to the air inlet. A dividing wall extends rearwardly from the front of the casing to divide the casing into an impeller and heating chamber and a motor chamber. This dividing wall, together with the impeller, the heater and the motor form a unit.

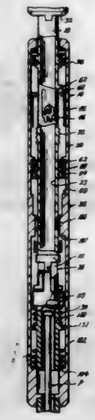
3,442,326
DEVICE FOR COOLING CONVERTER TRUNNIONS
Marcel Porcherot, Le Creusot, France, assignor to Societe des Forges et Ateliers du Creusot, Paris, France, a corporation of France
Filed July 20, 1967, Ser. No. 654,742
Claims priority, application France, July 29, 1966, 71,359
Int. Cl. F24h 3/00; F28f 19/00
U.S. Cl. 165—47 3 Claims



Device for cooling converter trunnions by the circulation of liquid, in which the cylindrical bore of each trunnion forms a cooling chamber filled with liquid supplied via a coaxial passage of annular cross-section to which the liquid is fed via a rotating joint outside the trunnion, the annular passage enclosing a tubular conduit through which the liquid is discharged to a fixed chamber which is outside the trunnion and has an evacuation spigot whose inlet is at a higher level than that of the top generatrix of the trunnion bore.

3,442,327
WELL TOOL VALVE ACTUATORS
Jerry C. Graff, Houston, Tex., assignor to Schlumberger Technology Corporation, New York, N.Y., a corporation of Texas
Filed Dec. 11, 1967, Ser. No. 689,568
Int. Cl. E21b 23/06, 33/124, 33/13
U.S. Cl. 166—152 18 Claims

The particular embodiment described herein as illustrative of the invention is directed to a well tool having a so-called "ball-valve" controlling communication therethrough. To actuate the pivotable ball valve, an actuating member connected thereto is associated with biasing means arranged to positively maintain the valve in one position without imposing undue forces thereon that would tend to hinder movement of the valve to its other position. When the tool mandrel is moved so as to reposition the ball valve, the biasing means are then selectively energized to positively move the ball valve to its other position.

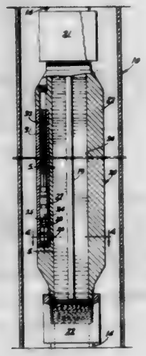


3,442,328
WELL TOOL VALVE ACTUATORS
Benjamin P. Nutter, Houston, Tex., assignor to Schlumberger Technology Corporation, New York, N.Y., a corporation of Texas
Filed Dec. 11, 1967, Ser. No. 689,570
Int. Cl. E21b 23/00, 33/12
U.S. Cl. 166—152 22 Claims



The particular embodiments described herein as illustrative of the invention are directed to a well tool having a so-called "ball-valve" controlling communication therethrough. To actuate the pivotable ball valve, an actuating member connected thereto is associated with biasing means arranged to positively maintain the valve in one position. When the tool mandrel is moved so as to reposition the ball valve, the biasing means are then selectively energized to positively move the ball valve to its other position.

3,442,329
PARAFFIN VALVE FOR OIL WELLS
Alton L. Waldron, Annapolis, Md., assignor to Hydrasearch Co., Inc., Annapolis, Md., a corporation of Maryland
Original application July 28, 1965, Ser. No. 475,421, now Patent No. 3,361,205, dated Jan. 2, 1968. Divided and this application Sept. 1, 1967, Ser. No. 678,129
Int. Cl. E21b 43/00
U.S. Cl. 166—224 3 Claims

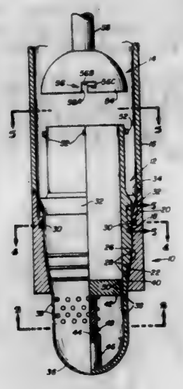


A valve for permitting the dumping of at least a portion of the liquid in a well having a tubing string positioned interiorly of a well casing. The valve comprises a valve body which is positioned in the tubing string, the valve having means for permitting fluid communication therethrough and including fluid inlet means in the valve communicative with the interior of the tubing string and fluid outlet means which is communicative with the well casing. Intermediate the inlet and outlet is a bore having contained therein biased valve means which seals the inlet means from the outlet means until a predetermined pressure is reached whereupon fluid communication is obtained between the inlet and the outlet means. Positioned in the valve body is engagement means for holding the valve means in the open position until a predetermined lower pressure is reached whereupon the valve means closes off the inlet terminating fluid communication between the inlet and outlet.

3,442,330
RETRIEVABLE CASING FOOT VALVE
James H. Cobbs, Tulsa, Okla., assignor to Fenix & Scisson, Inc., Tulsa, Okla., a corporation of Oklahoma
Filed Jan. 24, 1968, Ser. No. 700,062
Int. Cl. E21b 33/00, 7/14
U.S. Cl. 166—225 6 Claims

This invention relates to a retrievable casing foot valve for closing a casing extending into a subterranean formation. More particularly, the invention relates to a retrievable casing foot valve including a tubular landing nipple attachable to the lower end of a casing, the landing nipple having an internal tapered circumferential seating surface, a tubular foot valve body receivable by the landing nipple having a tapered exterior circumferential seating portion sealably matching with the internal seating surface of the landing nipple, means upon rotation of the tubular foot valve when in seated position in the landing nipple of locking the foot valve in the landing nipple,

and a valve means in the foot valve body normally closing the interior thereof and displaceable to the open position by downwardly applied force. The casing foot valve



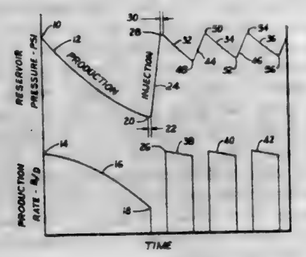
further includes means of releasably grasping the valve body whereby the body may be rotated to release its locking engagement with the landing nipple for removal from the landing nipple.

3,442,331

CYCLIC SECONDARY OIL RECOVERY PROCESS

Walter B. Fulton and Leonard J. Wickenhauser, Laurel, Miss., assignors to Central Oil Company, Laurel, Miss., a corporation of Mississippi

Continuation of application Ser. No. 370,526, May 27, 1964. This application May 22, 1967, Ser. No. 640,427
Int. Cl. E21b *43/16, 43/20*
U.S. Cl. 166—263 9 Claims



An improved water flood drive process in which water is injected into a petroleum reservoir through injection wells while the formation is shut-in. Then wells, other than the injection wells, are allowed to produce while injection of water is substantially terminated. When the rate of production decreases to an uneconomical rate, the cycle is then repeated.

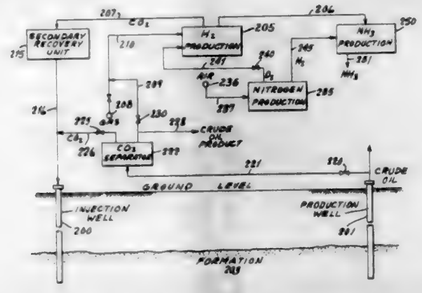
3,442,332

COMBINATION METHODS INVOLVING THE MAKING OF GASEOUS CARBON DIOXIDE AND ITS USE IN CRUDE OIL RECOVERY

Percival C. Keith, Hub Hollow Road, Peapack, N.J. 07977

Filed Feb. 1, 1966, Ser. No. 524,079
Int. Cl. E21b *43/16, 43/00, 43/24*
U.S. Cl. 166—266 10 Claims

Substantially pure gaseous carbon dioxide which is desirably produced in processing a hydrocarbon feed is injected into an underground formation containing crude oil at a pressure not exceeding the formation overburden pressure with about 1800 p.s.i. as the maximum partial pressure of the injected carbon dioxide. Thus, carbon dioxide dissolves in the oil and reduces its viscosity. The solution of reduced viscosity is withdrawn from the for-



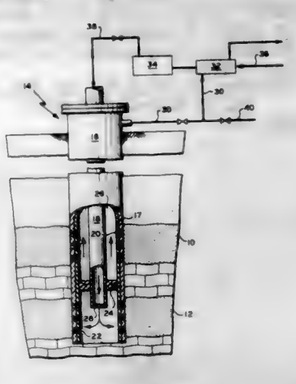
mation and the oil is recovered by separating therefrom carbon dioxide which may be again injected into the formation. Carbon dioxide at the desired injection pressure may be bubbled through heated water prior to injection into the formation.

3,442,333

WELLBORE VISBREAKING OF HEAVY CRUDE OILS

Robert F. Meldau, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Oct. 11, 1967, Ser. No. 674,468
Int. Cl. E21b *43/24, 43/00*
U.S. Cl. 166—272 9 Claims



Heavy crude oil is visbroken and upgraded with substantial reduction in sulfur by heating the oil in the tubing or the tubing-casing annulus at a temperature in the range of 550–700° F. for at least 24 hours as it is being produced, heat being supplied by injected steam at the wellhead thru conduit means extending downhole. The steam and/or condensate is preferably injected into a permeable oil stratum adjacent the producing stratum to drive oil to one or more offset productoin wells.

3,442,334

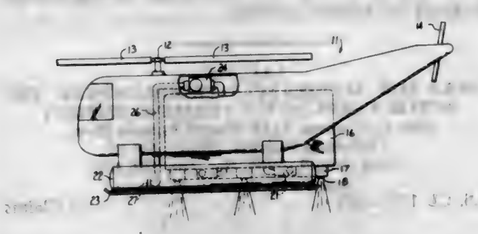
FIRE FIGHTING APPARATUS

Spero Gousetis, 416 Webster St., Oakland, Calif. 94607

Filed Jan. 27, 1966, Ser. No. 523,373
Int. Cl. A62c *3/02*; B64d *1/18*; B05b *17/02*
U.S. Cl. 169—2 1 Claim

A fire fighting apparatus is described which permits a large amount of anti-pyro liquid to be applied to a fire in a relatively short time and which can quickly reach

areas not easily accessible on the ground. The apparatus comprises a helicopter in which is mounted a high capacity anti-pyro liquid tank. A plurality of manifolds, each of which is provided with discharge nozzles are communicably connected to the tank by variable speed pumps and are mounted beneath the helicopter to discharge the liquid



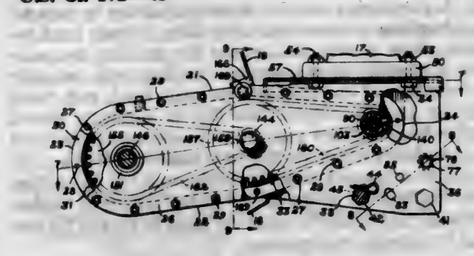
into the downwash of the helicopter rotor blades. The helicopter is provided with pontoons so that it can land upon a body of water, and the inlet opening of a filling conduit for the tank is positioned so as to extend into the water when the helicopter is on a body of water to facilitate filling of the tank from the body of water.

3,442,335

SOIL TILLING DEVICE

Joseph A. Silbereis and Richard D. Holloway, Dayton, Ohio, and Kenneth R. Sadler, Lake Oswego, Oreg., assignors to The Huffman Manufacturing Company, Miamisburg, Ohio, a corporation of Ohio

Filed Sept. 10, 1965, Ser. No. 486,493
Int. Cl. A01b *33/06, 33/08*
U.S. Cl. 172—43 3 Claims



A two wheeled soil tilling device including an elongated horizontal housing on which all of the components of the tilling device are mounted. The device has a removable handle mounted on the rear portion of the housing, a drive motor mounted on top of the housing, an axle and support wheels in the rear of the housing, and the driven axle on which the tines are mounted is supported on the front end of the housing. A rectangular guard is mounted on the housing directly behind the tines for protecting the user from stones and the like which might be propelled by the tines. The device also includes a transmission unit which allows it to be easily reversed from forward to rearward rotation of the tines allowing it to cultivate close to treees and the like.

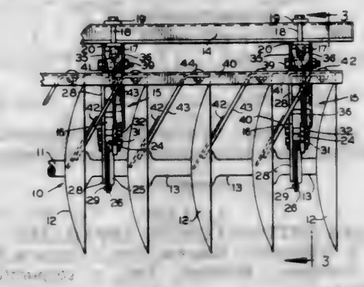
3,442,336

FLEXIBLE MOUNTING FOR DISK HARROW GANG

James Morkoski, Clarendon Hills, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware

Filed July 21, 1966, Ser. No. 566,974
Int. Cl. A01b *21/08, 23/00*
U.S. Cl. 172—572 5 Claims

An agricultural implement of the disk harrow type having a plurality of disks mounted on a carrier which is flexibly suspended from a supporting frame by means of a spring steel member, helically bent to form a coil, being positioned and retained in such a manner as to confine the bending of the spring member substantially to the bight



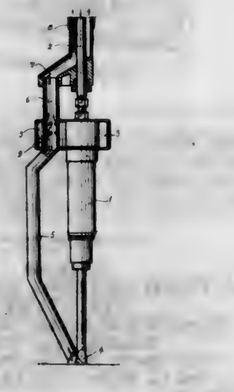
portion of the coil, and scrapers mounted on said carrier so as to remain in scraping relationship with the disks during operation of the implement.

3,442,337

ARRANGEMENT FOR REMOVING PARTICLES OF DUST FROM THE WORK ZONES OF PNEUMATIC, ERODING-TYPE WORK TOOLS

Nils Östen Åström, Barnstigen 25, Bromma, Sweden

Filed Oct. 21, 1966, Ser. No. 588,418
Claims priority, application Sweden, Oct. 25, 1965, 13,734/65
Int. Cl. E21c *7/00*; E21b *21/00*; B25d *17/14*
U.S. Cl. 173—61 4 Claims



Apparatus for removing dust and the like from the working zone of a pneumatic tool in which exhaust air from the tool is coupled with a vacuum source to obtain a synergistic effect in the dust removal force. The improvement more particularly comprises the application of an auxiliary source of vacuum connected downstream of the main vacuum source in a common dust exhaust conduit to create a partial vacuum downstream of said main vacuum source, thereby increasing the effect of said main evacuation source upstream thereof.

3,442,338

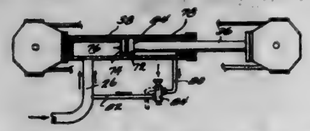
HYDRAULIC CIRCUIT FOR MOBILE HYDRAULIC HAMMER

Dean E. Broderson, 10116 Forest, Kansas City, Mo. 64131

Filed Jan. 23, 1967, Ser. No. 610,884
Int. Cl. B25d *9/06, 11/00*; E21c *11/02*
U.S. Cl. 173—86 9 Claims

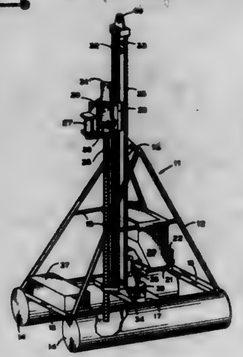
An improved hydraulic circuit and system is provided for use in actuating power hammers and similar devices. The improved circuit includes a selector valve means

which selectively changes the hydraulic forces available to a hydraulic lift cylinder so that the lift cylinder can



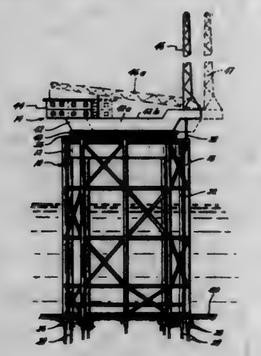
operate at a low speed range and at a high speed range with different forces being applied at the different ranges.

3,442,339
SEA BOTTOM CORING APPARATUS
Thomas N. Williamson, Houston, Tex., assignor to Hughes Tool Company, Houston, Tex., a corporation of Delaware
Filed Feb. 17, 1967, Ser. No. 616,893
Int. Cl. E21b 7/12
U.S. Cl. 175—6 11 Claims



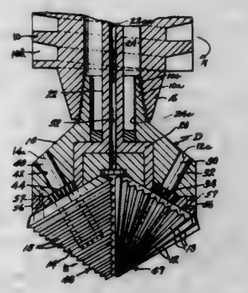
A marine bottom coring apparatus for drilling into and obtaining core samples from sub-sea formations. It is particularly useful for drilling into and obtaining core samples from hard rock formations.

3,442,340
MOBILE/FIXED DRILLING AND PRODUCTION STRUCTURE
Lowell B. Christenson, 7410 Thurow, Houston, Tex. 77017
Filed June 9, 1967, Ser. No. 644,883
Int. Cl. E21b 15/02; E02b 17/00
U.S. Cl. 175—8 13 Claims



An offshore drilling and production structure having a plurality of vertical columnar support members secured in polygon spaced relation about a buoyant platform which is releasably maintained therewithin for vertical adjustment. The columnar support members are adapted to receive anchor or spud members as well as drill bit means such that the entire structure may function both as a drilling rig and a production platform. Also included is a method for drilling a sub-surface well by lowering the support members to the underwater ground and drilling through the spuds and support members.

3,442,341
TOOLS FOR ACCURATELY PROGRAMMING THE APPLICATION OF PULVERIZING ENERGY
Guy O. Conner, 1118 Mount Vernon Blvd., Cleveland Heights, Ohio 44118
Filed June 9, 1966, Ser. No. 556,376
Int. Cl. E21b 9/10, 9/24
U.S. Cl. 175—319 21 Claims

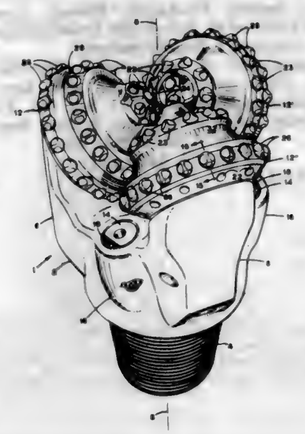


1. A pulverizing tool for forming a cavity in material by pulverizing the material comprising, a main head rotatable about a first axis, means for rotating the main head, a plurality of cone-shaped coacting tools rotatably mounted on and movable with the main head, each being rotatable about a second axis that is angularly spaced relative from said first axis, means connected to said tools to cause their rotation on the main head such that a point on said tools appears stationary with respect to the surface of the material to be pulverized at the instant of contact therewith, and means to cause the tools to engage the material for pulverizing the same.

3,442,342
SPECIALLY SHAPED INSERTS FOR COMPACT ROCK BITS, AND ROLLING CUTTERS AND ROCK BITS USING SUCH INSERTS
Fred H. McElya, Pearland, and Robert A. Cunningham, Bellaire, Tex., assignors to Hughes Tool Company, Houston, Tex., a corporation of Delaware
Filed July 6, 1967, Ser. No. 662,232
Int. Cl. E21b 9/08; E21c 13/02
U.S. Cl. 175—374 18 Claims

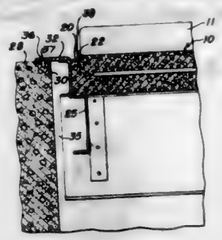
The original inserts of cemented tungsten carbide had hemispherical cutting tips, and rock bits using such inserts were used to drill the hardest abrasive formations, such as taconite, bromide and chert. This shape is not particularly effective for the drilling of abrasive formations of medium hardness, e.g., hard shales, dolomite and some limestones, and the inventors herein have developed inserts with more of a chisel or wedge shape to cut such rock. At the same time, they avoid the pitfalls of the "rooftop" style of cutting tip, one in which there are two flanks with flat surfaces converging to a flat crest.

Two basic shapes of cutting tips are disclosed: (1) a modified chisel with convex flanks converging to a crest which is convex along both its elongated length and its uniform narrow width, the flanks being normal to a common plane passing through the axis of the insert so that their projected intersection is a curve normal to such axis; and (2) a wedge shape in which the flanks are twisted or canted away from each other so that there is no single plane through the insert axis which is normal to both flanks and the projected intersection is not normal to the axis, the result being that the crest formed normal to the axis increases in width from one end to the other.



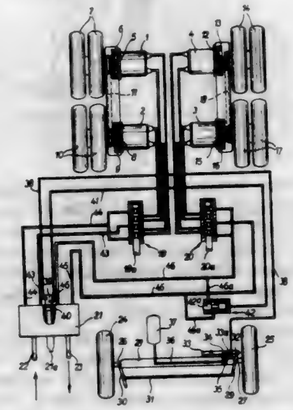
In all forms rounded intersections are provided to avoid the sharp corners and sharp edges which cause high stress concentrations. The inventors' theory is that their rounding and their convex surfaces distribute the operating load over the cutting edge of the insert and direct such load to the center of the insert, thus avoiding the high stresses at the edges which they believe to be responsible for the chipping and breaking of rooftop inserts.

3,442,343
PLATFORM SCALE WITH CONCRETE CURBED DECK
Clyde E. Marion, Lafayette, Calif., assignor to L. R. Murphy Scale Company, Sacramento, Calif., a corporation of California
Filed June 12, 1967, Ser. No. 645,351
Int. Cl. G01g 19/02
U.S. Cl. 177—134 10 Claims



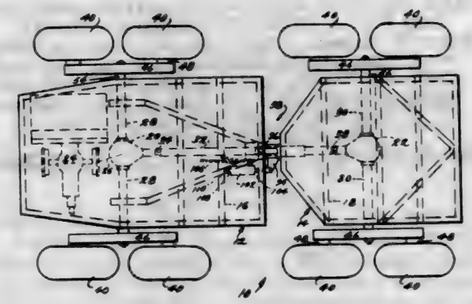
This platform scale, of the type having a pit in which a scale mechanism is sunk and bordered by walls providing a paved surface, has a deck which is separate from the surrounding paving and rests upon a weighbridge, has a pair of longitudinal curbs along each side edge, and at each end has a supporting beam projecting out. The adjacent walls of the paved surface facing the beam are provided with a floating bridging plate which bridges over the gap around the scale deck and extends over on top of the beam, resting thereon and floating therewith. The end of said plate facing the deck is beveled to provide a knife-like scraping edge, and the edge of the deck facing the floating bridging plate is provided with a steel edge bar secured to the beam.

3,442,344
FLUID PRESSURE TRANSMISSIONS FOR PROPELLING VEHICLES
Oreste Ocule, Grugliasco, Turin, Italy, assignor to Simit Societa per Azioni, Turin, Italy
Filed June 23, 1967, Ser. No. 648,420
Claims priority, application Italy, June 27, 1966, 15,089/66
Int. Cl. B62d 5/10
U.S. Cl. 180—6.3 3 Claims



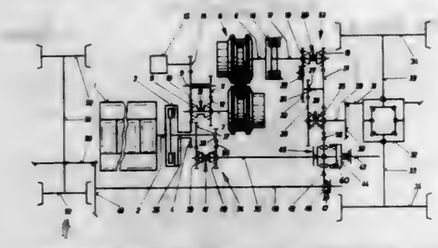
A fluid pressure transmission transmits motive power from a constant delivery source to respective sets of rotary fluid pressure motors connected to respective driving wheels. A distributor valve selectively connects these sets of motors in series or in parallel with the source to change the overall torque transmission ratio.

3,442,345
ARTICULATED VEHICLE
Paul J. Berger, 2318 Pleasant, Missoula, Mont. 59801
Filed Feb. 6, 1967, Ser. No. 614,267
Int. Cl. B62d 13/00, 9/00
U.S. Cl. 180—23 5 Claims



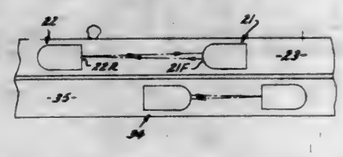
An articulated vehicle is described having fore and aft wheeled portions joined by apparatus including a radially articulated steering yoke whose hydraulic jack works solely in a horizontal plane. The vehicle wheels are all mounted in driven relationship on full floating trunnions.

3,442,346
VEHICLE TRANSMISSION SYSTEM AND POWER TAKE-OFF
August Winter and Egon Mann, Friedrichshafen, Germany, assignors to Zahnradfabrik Friedrichshafen Aktiengesellschaft, Friedrichshafen, Germany, a corporation of Germany
Filed Feb. 16, 1967, Ser. No. 616,598
Claims priority, application Germany, Feb. 22, 1966, Z 12,046
Int. Cl. B60k *17/28, 17/04*
U.S. Cl. 180—53 11 Claims



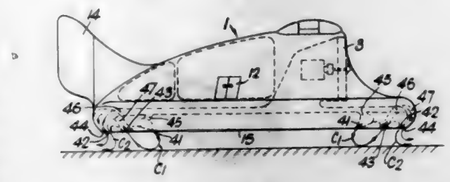
Transmission system for a wheeled vehicle (e.g. an agricultural tractor) with one or more driven wheel axles and, preferably, a power-take-off shaft, the system including a stepless speed changer (e.g. variable-ratio-chain-and-pulley drive or hydrostatic transmission) and a shiftable gear assembly for further speed changes and/or speed reversals whereby the wheel axle or axles can be normally driven from the drive shaft of the vehicular engine through the stepless speed changer and the shiftable gear assembly upon the engagement of a first clutch therebetween; a second clutch, engageable in the disengaged state of the first clutch, serves to establish a power train from the engine to the driven axle or axles which may include all or part of the shiftable gear assembly but which bypasses the stepless speed changer, the power-take-off shaft being also actuatable directly from the drive shaft of the engine independently of the stepless speed changer. The power train bypassing that speed changer may include all or part of the coupling linking the drive shaft with the power-take-off shaft, with the latter selectively operable directly from the drive shaft or from the output of the stepless speed changer whereby the power-take-off shaft can be selectively rotated at a speed varying with that of the vehicle or a speed (constant or variable) independent of vehicular speed.

3,442,347
SAFE TRAILING DISTANCE MAINTENANCE SYSTEM FOR A TRAILING CARRIER VEHICLE
Robert W. Hodgson, 1680 N. Vine St., Suite 240, Hollywood, Calif. 90028, and James L. Freson, Inglewood, Calif.; Miss Freson, 10224 6th Ave., Inglewood, Calif. 90303, serving heir of said James L. Freson, deceased
Filed Mar. 31, 1965, Ser. No. 444,188
Int. Cl. B22d *19/12*; G01s *9/04*
U.S. Cl. 180—98 4 Claims



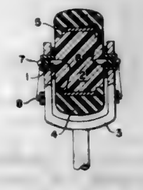
A safe trailing distance system for a trailing vehicle including radiation transmitting and receiving means, the ouput of the latter being connected to a visibly perceptible warning signal and/or brake operating means to reduce vehicle speed. Threshold gate means including reference value means are used to control the output of the receiving means, and speed sensing means can vary operation of the threshold gate means.

3,442,348
VEHICLES FOR TRAVELLING OVER LAND AND/OR WATER HAVING RECIRCULATING FLUID CURTAINS
Christopher Sydney Cockerell, Bassett, Southampton, England, assignor to Hovercraft Development Limited, London, England, a British company
Continuation-in-part of applications Ser. No. 809,699, Apr. 29, 1959, and Ser. No. 837,428, Sept. 1, 1959. This application Nov. 27, 1963, Ser. No. 326,497
Claims priority, application Great Britain, Sept. 1, 1958, 27,976/58, 27,977/58
Int. Cl. B60v *1/16*
U.S. Cl. 180—130 38 Claims



In a gas cushion vehicle in which the cushion is contained at least in part by a fluid curtain, means are provided to recover at least part of the fluid forming the curtain for reuse, either for forming a further curtain or for re-circulation in the original curtain. The fluid may be recovered by ports positioned either inboard or outboard of the port from which the initial fluid curtain issues. Recovered fluid may be re-energised before reuse and/or augmented by the supply of additional fluid. The re-energisation and augmentation may be effected by injectors. Multiple curtains may be formed, including curtains in the form of vortices.

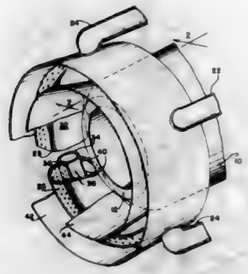
3,442,349
ACOUSTIC PIPELINE LEAK DETECTOR
Hendrik Bosselaar, Amsterdam, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Nov. 3, 1967, Ser. No. 680,539
Claims priority, application Great Britain, Jan. 16, 1967, 2,207/67
Int. Cl. G10k *10/00*
U.S. Cl. 181—.5 9 Claims



An acoustic pick-up device for use with an apparatus for detecting leaks in the wall of a pipeline when the pipeline is on stream including a wheel having a resilient tire which houses a piezoelectric element for detecting vibrations; the device being transported through a pipeline with the tire in rolling contact with the interior of the pipeline. The tire may be either a solid tire of rubber-like material or a hollow tire filled with liquid. The piezo-

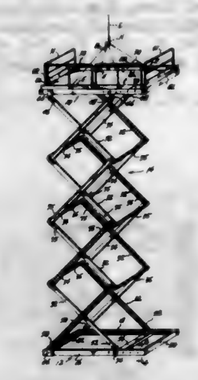
electric element may be cylindrical so as to turn with the device or it may be attached to a fixed axle so that it remains stationary relative to the tire.

3,442,350
SILENCER WITH MEANS FOR SPRAYING SHEETS OF SOAPY WATER AND AIR AROUND EXHAUST STREAM
Thomas J. O'Brien, 3202 Moylan Drive, Bowie, Md. 20715
Filed July 1, 1968, Ser. No. 741,761
Int. Cl. F01n *1/04*
U.S. Cl. 181—42 4 Claims



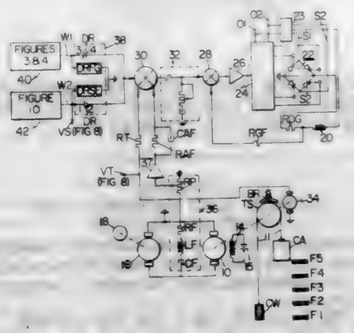
The disclosure describes a noise suppressor having an inner annular segment contained within an outer one, the outer one supplied with soapy water and the inner one with air, the mixture being blown out through holes in the outer segment to form a noise-suppressing sheet. The sheet is guided by skirts so as to be spaced from the exhaust gases.

3,442,351
METHOD AND APPARATUS FOR RAPIDLY ESTABLISHING AN ELEVATED WORK PLATFORM
Patricia D. Parrish and Dennis Parrish, both of 4472 Wyman Drive, Sacramento, Calif. 95821
Filed Jan. 20, 1967, Ser. No. 610,602
Int. Cl. E04g *1/18*
U.S. Cl. 182—141 14 Claims



(1) A work platform connected to a base by a passive lazy tong mechanism; (2) a lazy tong mechanism comprising a plurality of side member and cross brace assemblies, of rigid "box" form, and a plurality of single side members completing same, all members being of channel iron; (3) a lazy tong mechanism narrowing from bottom to top; and (4) transporting the platform apparatus in a collapsed condition to the work site by an overhead lifter, then lifting said platform, and extending said lazy tong mechanism, by use of said lifter, and then locking said lazy tong mechanism in its extended position.

3,442,352
ELEVATOR CONTROL SYSTEM
Otto Albert Kramer, Tuckahoe, and Sidney Howard Benjamin, Brooklyn, N.Y., assignors to Otis Elevator Company, New York, N.Y., a corporation of New Jersey
Filed Oct. 13, 1965, Ser. No. 495,585
Int. Cl. B66b *1/06*
U.S. Cl. 187—29 15 Claims

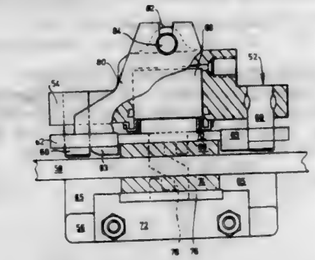


A high performance servo control system particularly suited for controlling the speed of a motor which acts on a variety of loads, such as the direct current hoisting motor of a high speed passenger elevator system. Means are provided for comparing control signals from speed dictating equipment with feedback signals to insure fidelity and stability of performance. The feedback signals include signals proportional to the speed of the motor and to the higher derivatives of that speed with respect to time. These signals are derived from a motor speed indicating device in the form of a tachometer generator driven by the motor armature and from a network connected to the motor armature circuit in a configuration which substantially simulates the interacting energy storage properties of the impedance of the motor armature and of the moving masses of the system when the motor is acting on a predetermined one of its various loads.

3,442,353
DISC BRAKES AND SUPPORTING MEANS THEREFOR
Anthony William Harrison, Birmingham, England, assignor to Girling Limited, Birmingham, England
Filed July 11, 1966, Ser. No. 564,272
Claims priority, application Great Britain, July 10, 1965, 29,363/65
Int. Cl. F16d *55/00*
U.S. Cl. 188—73 5 Claims

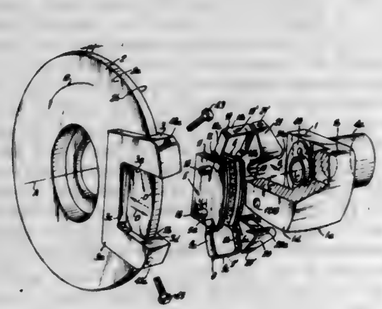
A disc brake of the type utilizing a stationary torque plate for supporting and guiding a directly actuated friction element on one side of a disc and for also supporting a yoke member which straddles the disc and carries an indirectly actuated friction element on the other side of the disc, actuator means for moving the first element into engagement with the disc and by reaction moving the yoke member in the opposite direction to apply the second element to the disc, the torque plate providing a pair of circumferentially spaced mounting and guiding means for the yoke member, the invention comprising the addition of

a third mounting and guiding means for the yoke member spaced axially away from the first pair of guiding means, the three mounting and guiding means cooperating to



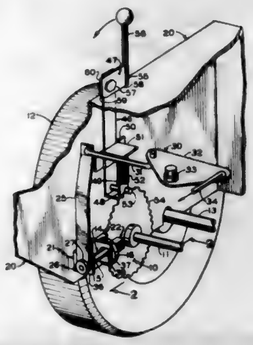
oppose any turning couple exerted by the indirectly actuated element on the yoke member when the element is in braking engagement with a rotating disc.

3,442,354
CALIPER AND FRICTION PAD SUPPORT MEANS
Juan Belart, Walldorf, Hesse, Germany, assignor to Alfred Teves, Maschinen- und Armaturenfabrik KG, Frankfurt am Main, Germany, a corporation of Germany
Filed Feb. 23, 1967, Ser. No. 618,058
Claims priority, application Germany, Apr. 5, 1966, T 30,857
Int. Cl. F16d *55/00, 65/14*
U.S. Cl. 188—73 8 Claims



A disk brake for wheels of an automotive vehicle or the like and manually and/or fluid operated which comprises a pair of brake shoes confronting the brake disk and interconnected by a pair of spreadable U-shaped springs affixed to the brake shoes along their backing plates carrying the brake linings. The resilient suspension means, constituted by these springs, fasten the brake-shoe assembly to a support bracket, fixed with respect to the disk and extending around the periphery thereof. The segmental brake shoes are guided in radially open cutouts of this support bracket and are provided with pins or bores slidably receiving complementary female or male formations of a yoke in which the brake shoes are guided and which is supported for movement transverse to the faces and parallel to the disk axis by the resilient means. The U-shaped springs are connected at their bights with inwardly extending tongues whose bent free ends bear frictionally against the underside of an overhang of the yoke while its flanks are frictionally engaged by bent knees of the tongues. The actuating means includes a hydraulic cylinder on the yoke provided with an adjusting device for automotive combination for brake wear to reposition the shoes upon operation of the brake and a lever-operated mechanical actuating system for displacing the brake shoes independently of the hydraulic actuation.

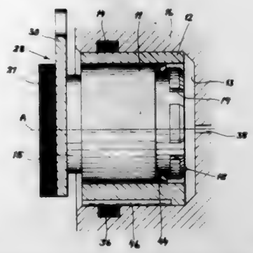
3,442,355
DISC BRAKE SYSTEM
Robert E. Kortum, Hazelwood, Mo., assignor to Atlas Tool & Manufacturing Company, St. Louis, Mo., a corporation of Missouri
Filed Apr. 10, 1967, Ser. No. 629,503
Int. Cl. F16d *51/00, 63/00*
U.S. Cl. 188—73 1 Claim



A disc brake in which a rotatable shaft, transversely aligned relative to the axis of rotation of the disc, is provided with a forked end straddling the periphery of the disc. A friction-faced block is rotatably mounted on each leg of the fork adjacent to the disc face so that rotation of the shaft brings the friction-faced blocks into frictional braking engagement with opposite faces of the disc.

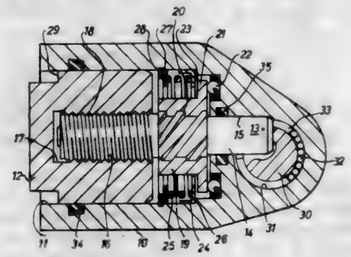
A spring-loaded reciprocative arm is provided with a pin at one end which positively engages circumferential teeth on the disc to prevent rotation of the disc independently of the friction-faced blocks.

3,442,356
LOW-NOISE HYDRAULIC DISK BRAKE
Heinz Günther Hahm, Frankfurt am Main, Germany, assignor to Alfred Teves, G.m.b.H., Frankfurt am Main, Germany, a corporation of Germany
Filed Dec. 5, 1967, Ser. No. 688,185
Claims priority, application Germany, Dec. 6, 1966, T 32,689
Int. Cl. F16d *55/00, 63/00*
U.S. Cl. 188—73 9 Claims



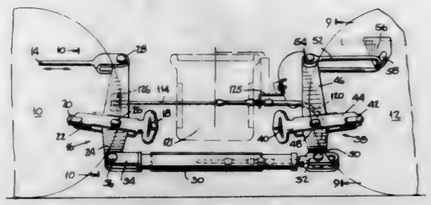
A low-noise hydraulic spot-type disk brake wherein a piston whose axis coincides with the centrum of the braking surface lining is fitted with a sleeve of low-friction, wear and corrosion-resistant material in which the piston is eccentrically mounted to dispose the contact surface of the piston against the backing plate of the brake-shoe eccentrically with respect to the centrum of the braking surface of its lining and the axis of its cylinder bore.

3,442,357
BRAKE ADJUSTERS
Glyn P. R. Farr, Kenilworth, England, assignor to Girling Limited, Birmingham, England
Filed Feb. 27, 1967, Ser. No. 618,914
Claims priority, application Great Britain, Mar. 18, 1966, 11,915/66; May 7, 1966, 20,309/66
Int. Cl. F16d *65/38, 55/00, 65/14*
U.S. Cl. 188—196 23 Claims



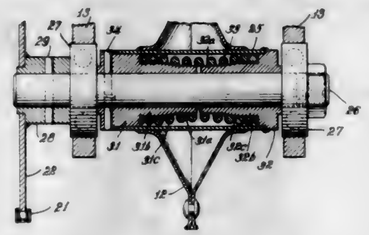
An automatic adjuster comprises a mechanism of adjustable length operative between a hydraulic brake piston and either a cylinder or an opposed piston. A cam journalled in the cylinder or the opposed piston serves to apply the brake mechanically (hand brake) and act as a stop for the mechanism. The adjustable length mechanism comprises two members, one of which may be the first mentioned piston in interengagement with one another through a non-reversible screw-thread connection. A reversible screw-thread connection or a reversible face came is provided for turning one member of the mechanism relatively to the other responsively to excessive piston travel to effect adjustment.

3,442,358
BRAKE MECHANISM
Everard C. Mersereau, Wayne, N.J., assignor to Elicon-National, Inc., Totowa Borough, N.J., a corporation of New York
Continuation-in-part of application Ser. No. 577,481, Sept. 6, 1966. This application Feb. 23, 1968, Ser. No. 707,610
Int. Cl. F16d *65/56*; B61h *13/00*
U.S. Cl. 188—202 10 Claims



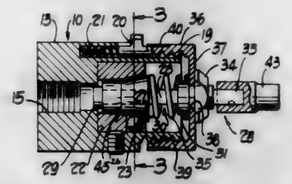
A fluid actuated railway car brake mechanism including in combination, a brake beam having portions which are frictionally engageable with the wheels, a truck lever pivotally mounted on the brake beam, slack adjusting means connected to one end of the truck lever, and trigger means interconnecting the truck lever and the slack adjusting means for actuating the slack adjusting means in response to movement of the truck lever.

3,442,359
VEHICLE DRIVE APPARATUS
Edward J. Atchison, Rte. 1, Box 202A, Lake Zurich, Ill. 60047
Filed June 23, 1967, Ser. No. 648,316
Int. Cl. F16d *11/06, 13/04, 43/00, 23/00*
U.S. Cl. 192—41 4 Claims



A one-way clutch is provided for the drive of a battery-powered electric motor-driven vehicle. The clutch is mounted in the hub of the driving wheel and comprises two coaxially positioned members interconnected by a coil spring. The members each have a first cylindrical portion immediately adjacent to the first cylindrical portion of the other member and a larger second cylindrical portion interconnected with the first cylindrical portion by a frustum of a right-angle cone. One member is welded to the hub, the second member is attached to a drive sprocket and is welded to one end of the spring. The end parts of the spring are in contact with the second portions. The central turns of the spring have a radius, as measured from a central axis, which is smaller than the corresponding radius of the end turns and which is slightly larger than the first portions of the members.

3,442,360
POWER OPERATED, PREDETERMINED TORQUE RELEASE, BOLT DRIVER
Charles Fulop, 131 Skyview Drive, Seven Hills Village, Ohio
Filed Oct. 4, 1967, Ser. No. 672,796
Int. Cl. F16d *23/00, 7/02, 43/20*
U.S. Cl. 192—56 2 Claims

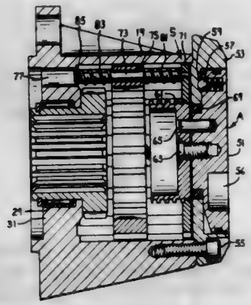


A power driven tool for driving bolts or screws comprising a clutch-cone member forwardly movable on the tool's spindle upon a predetermined resistance being offered to rotation. In this position the clutch-cone is in non-torque transmitting engagement.

3,442,361
FRONT WHEEL HUB CLUTCH
Frank Hegar, Oregon City, Oreg., assignor to Warn-Belleview, Inc., a corporation of Oregon
Filed June 29, 1967, Ser. No. 649,946
Int. Cl. F16d *11/04, 11/10, 13/22*
U.S. Cl. 192—67 3 Claims

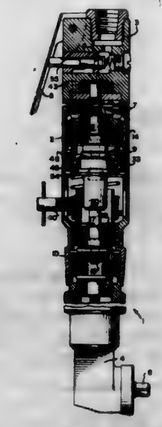
A vehicle front wheel hub clutch in which a housing, which is connectable to the front wheel, carries a rotary actuator which effects axial shifting movement of a spring

compressor which has a splined fit within and to the housing. The compressor has a series of pins extending through an annular clutch member which has a splined fit with the housing and has teeth interiorly of the splines for engagement with teeth on a hub member, the latter being attachable to the front wheel drive axle. Two series of springs are provided on the pins, one on either side of



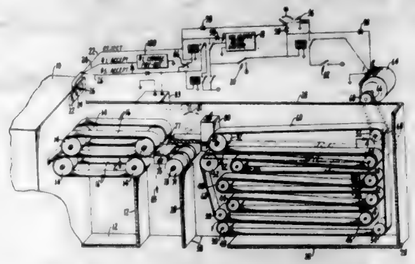
the clutch member so that rotation of said actuator in one direction will compress one set of springs to create a biasing pressure on said clutch member for effecting engagement of the clutch member with the hub member, whereas rotation of the actuator in the opposite direction will compress the other set of springs to create a biasing pressure to move the clutch member out of engagement with the hub member.

3,442,362
TORQUE RELEASE AND SHUT-OFF MECHANISM FOR PNEUMATIC TOOLS
Kenneth R. Bangerter, Ithaca, N.Y., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Aug. 31, 1967, Ser. No. 664,777
Int. Cl. F16p 3/00; F16d 67/00, 71/00
U.S. Cl. 192—150 13 Claims



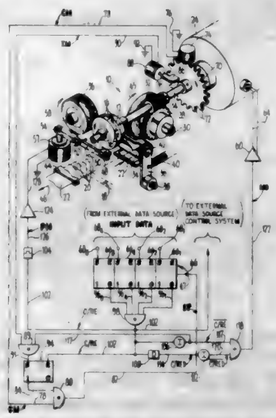
A pneumatic power wrench having a cone clutch with a "locking taper," a torque sensing means and a motor exhaust shut-off valve adapted to close automatically in response to the torque sensing means. The closing of the shut-off valve simultaneously opens the cone clutch to disengage the tool motor from its spindle and to stop the tool motor.

3,442,363
BILL ESCROW DEVICE
John B. Riddle, Los Altos Hills, and Robert B. McLaughlin, Palo Alto, Calif., assignors to Micro-Magnetic Industries, Inc., Palo Alto, Calif., a corporation of California
Filed Sept. 5, 1967, Ser. No. 665,469
Int. Cl. G07d 7/00; G06k 9/00
U.S. Cl. 194—4 8 Claims



An escrow device for currency validators having two belts with a common run extending through a serpentine path which occupies the majority of the length of the belts and is open at both ends with one end of the common run positioned adjacent to the validator discharge for taking validated bills and the other end positioned remote from the validator discharge for discharging bills from the escrow device. The common run has a length of between four and twenty-five times the length of the bills which are to be accumulated therein. The escrow device may also include the folllowing features: means for sorting bills of different denominations, reverse drive means for delivering bills from the escrow device back through the validator, counting means for counting out change in low value bills for a higher value bill, and photocell controlled drive means for the escrow belts to position bills in the common run closely spaced together, but positively separated from each other even when any sorting means is used.

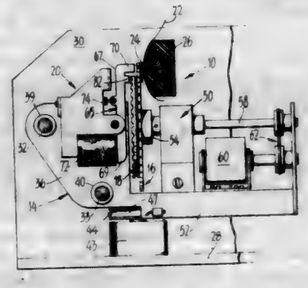
3,442,364
PRINTING SYSTEM WITH HELICAL ARRANGEMENT OF TYPE ON TYPE WHEEL
Robert A. Ragen, Hayward, Calif., assignor to Friden, Inc., a corporation of Delaware
Filed Oct. 2, 1967, Ser. No. 672,133
Int. Cl. B41j 1/32
U.S. Cl. 197—49 11 Claims



An on-the-fly printer having a rotatable font wheel with printing types arranged in a helical pattern, and an arrangement for moving a strip of paper in a path of

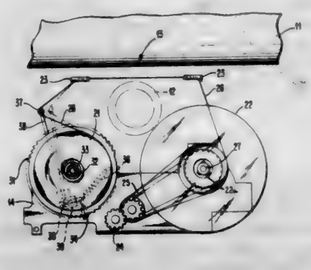
travel parallel with the axis of rotation of the font wheel in continuous synchronized movement with rotation of the font wheel. A control system receives and stores character indicative electrical signals from an outside source and responds to such signals for starting the synchronized rotation of the font wheel and movement of the paper strip. Rotation of the font wheel generates an indexing pulse and a train of counting pulses, each counting pulse being indicative of a particular printing type in printing position adjacent the paper strip and a print hammer. The counting pulses are applied to the contents of the character signal storage section, effects printing of one character, and ceases further movement of the font wheel and paper tape if new character indicative signals are not received from the outside source within a predetermined period of time.

3,442,365
FONT WHEEL ALIGNING DEVICE
Evan L. Ragland III, Atherton, and Charles W. Wiedeman, Jr., Castro Valley, Calif., assignors to Friden, Inc., a corporation of Delaware
Filed Sept. 29, 1967, Ser. No. 671,704
Int. Cl. B41j 1/44
U.S. Cl. 197—53 3 Claims



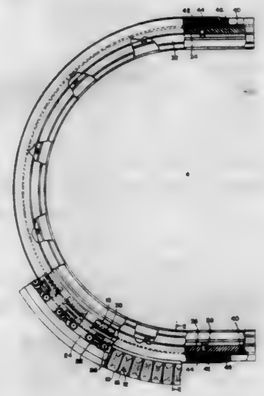
A printer having a continuously rotatable font wheel with character pads carried on flexible spokes and a print hammer which engages an aligning groove in the pad to damp vibration and to stop the pad (the spoke being flexible) during impact for reducing smearing. A disc with camming teeth prevents a printing stroke between pads and also insures return of the hammer.

3,442,366
RIBBON TENSION CONTROL
Jesse W. Spears, Lexington, Ky., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Mar. 18, 1966, Ser. No. 535,516
Int. Cl. B41j 33/14, 33/22
U.S. Cl. 197—151 4 Claims



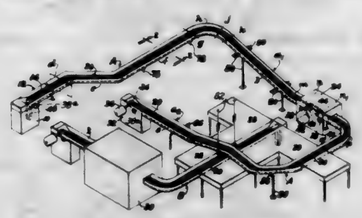
Ribbon tension is controlled in an incrementing ribbon feed system by a pawl and ratchet brake device actuated by direct ribbon tension sensing to selectively positively hold or completely release the supply spool and thereby maintain ribbon tension within predetermined limits.

3,442,367
NEWEL STRUCTURE FOR PASSENGER CONVEYORS
Daniel E. Van Voorhis, Richmond, Ind., assignor to The Reliance Electric and Engineering Company, Cleveland, Ohio, a corporation of Ohio
Filed May 18, 1967, Ser. No. 639,512
Int. Cl. B66b 9/12
U.S. Cl. 198—16 8 Claims



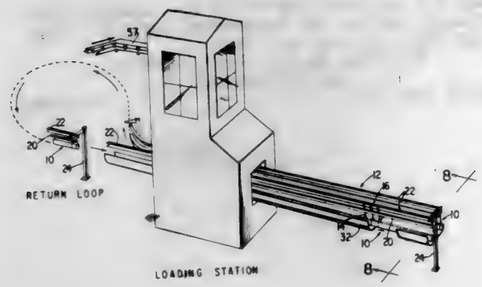
A newel structure for passenger conveyors wherein the handrail driving chain thereof is lifted to free its sliding shoes from their rail and is supported by the chain rollers for a combined rolling and/or sliding action of those rollers on a low friction guide during the arcuate travel around the newel positions.

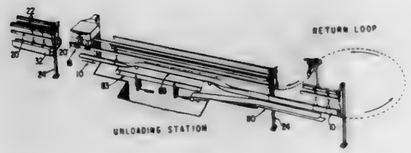
3,442,368
TRAY CONVEYORS
Sidney T. Helfetz, New York, N.Y., assignor to Helfetz Metal Crafts, Inc., a corporation of New Jersey
Filed Jan. 26, 1967, Ser. No. 612,764
Int. Cl. B65g 17/06
U.S. Cl. 198—197 3 Claims



A tray conveyor with an integral and continuous tray-guiding trough for laterally confining trays that are propelled by flights underneath the trays that are carried by an endless chain adapted to negotiate turns, inclined, declined and helical runs steeper than the friction angle between the trays and the flights with the use of equally spaced upward projecting pushers on certain flights and without the use of the pushers along horizontal runs. The chain is adapted to be sprocket driven and adapted to run in a chain-guiding trough integrally formed in the bottom of the tray-guiding trough, the trays being free to move vertically, sidewise or tilt with respect to its propelling flights. The bottom of the tray trough is adapted to suspendingly support the flights on the return runs.

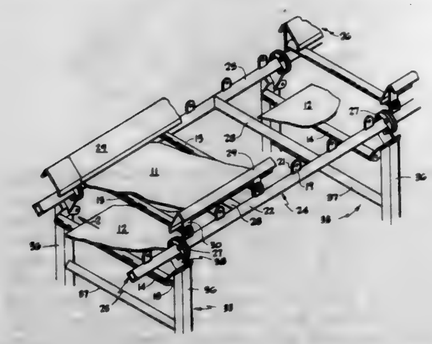
3,442,369
SUSPENDED CONVEYOR
Andrew J. Harkess, Edgewater, N.J., assignor to Hewitt-Robins Incorporated, Stamford, Conn.
Filed May 22, 1967, Ser. No. 640,083
Int. Cl. B65g 15/00
U.S. Cl. 198—184 9 Claims





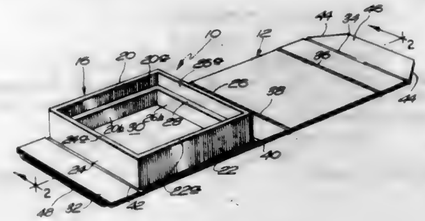
This invention relates to a suspended belt conveyor system in which the conveyor belt is formed into a substantially tubular-shaped member when loaded with material to be conveyed and which is opened into an inverted U-shaped trough when the conveyor belt is unloaded.

3,442,370
SANITARY BELT CONVEYOR
Richard J. Goodale, Box 268, Watsonville, Calif. 95076
Filed Jan. 3, 1967, Ser. No. 606,660
Int. Cl. B65g 15/60
U.S. Cl. 198—192 8 Claims



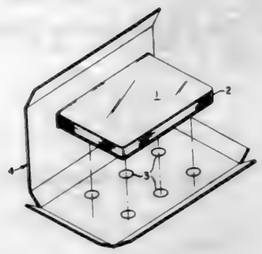
A sanitary belt conveyor is constructed so that all the surfaces of the belt supporting means, frame and rollers, are inclined with respect to the horizontal and without pockets so that liquids and solids fall or are easily washed therefrom.

3,442,371
DISPLAY PACKAGE
Elzie E. Deshong, East Providence, N.J., and Richard C. J. Palson, Medfield, Mass., assignors to International Packaging Corporation, Central Falls, R.I., a corporation of Rhode Island
Filed July 3, 1968, Ser. No. 742,448
Int. Cl. B65d 5/52, 25/24
U.S. Cl. 206—45.23 11 Claims



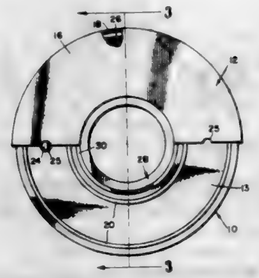
A display package formed by laminating two layers of plastic material, the first layer being a relatively stiff plastic, and the second layer being a relatively flexible plastic that is adhered to the first material in laminated relation by heat sealing, a portion of the relatively stiff plastic layer being preshaped to form an article holding portion and having an extension joined thereto in integral relation to define a cover, the cover being foldable in enveloping relation around the article holding portion and the flexible plastic layer having a decorative surface and defining the outer surface of the package.

3,442,372
SHIPPING STRUCTURE
Keith S. Carmichael, Wilmington, Del., and Eugene P. Di Giacomo, Westbury, N.Y., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Sept. 19, 1967, Ser. No. 668,913
Int. Cl. B65d 85/70, 65/10
U.S. Cl. 206—46 6 Claims



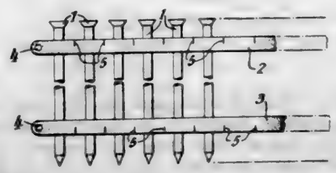
A shock resistant shipping structure comprising a film overwrapped article adhered to a supporting sheet which extends beyond the boundary of the overwrapped article and which sheet is adhered to, or comprises one wall of a conventional shipping container having a greater internal volume than the volume of the article.

3,442,373
TAPE REEL CARTRIDGE
Jerry O. Kelley, Columbus, Ind., assignor to Arvin Industries, Inc., Columbus, Ind., a corporation of Indiana
Filed July 12, 1967, Ser. No. 652,792
Int. Cl. B65h 53/00, 75/02; B65d 85/04
U.S. Cl. 206—52 6 Claims



A cartridge for use in housing a reel of magnetic tape comprising inner and outer arcuate shells open at their inner circumferences. The inner shell is rotatably received within the outer shell for movement between a cartridge-closed position in which the shells form a complete annulus, open only at its inner circumference, and a cartridge-open position in which the open inner circumferences of the shells are aligned. Thus, the cartridge in its closed position will house and protect a reel of tape, and in its open position will permit the tape to be removed from said cartridge and reel by any suitable tape drive.

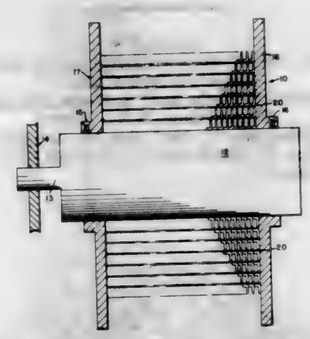
3,442,374
FEEDING OF NAILS AND THE LIKE FOR FASTENING MACHINES
Malcolm Edwin Hillier, Deal, England, assignor to Gaston E. Marbaix Limited, Basingstoke, England, a British company
Filed Dec. 4, 1967, Ser. No. 687,575
Claims priority, application Great Britain, Dec. 16, 1966, 56,475/66
Int. Cl. B65d 83/00
U.S. Cl. 206—56 7 Claims



There is described a pack of nails interattached for use in an automatically self-feeding pneumatic fastener gun, in which the interattachment is formed by one or more tape-like ligaments, and these are incised partially across their breadth to localise and facilitate tearing of the ligaments when the nails are driven.

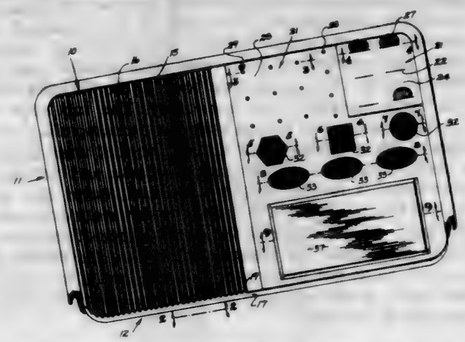
3,442,375
METHOD OF COILING METALLIC CLOTHING AND COIL PRODUCED THEREBY
John D. Hollingsworth, P.O. Box 516, Greenville, S.C. 29602
Filed Dec. 20, 1967, Ser. No. 692,225
Int. Cl. B65h 55/04, 55/00
U.S. Cl. 206—59 5 Claims

Metallic wire card clothing having a narrow bottom edge and an opposite toothed edge is wound in a coil of a plurality of layers. Each layer is helically wound with the clothing standing on its narrow bottom edge. The coil is produced by placing a curved set in the metallic clothing



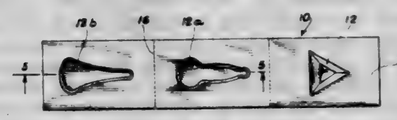
and winding it on a core in helical form in a plurality of layers with the toothed edge being substantially perpendicular to the axis of the core.

3,442,376
IMPLEMENT MAT
Patricia Ann McDivit, 987 Delight Drive, Cincinnati, Ohio 45238
Filed June 29, 1967, Ser. No. 650,123
Int. Cl. A61b 19/02
U.S. Cl. 206—63.5 7 Claims



An implement mat for use with dental set-up trays comprising, for example, a first working area having a ridged cross-sectional configuration for presenting instruments in predetermined positions, and a second working area having a plurality of slits and holes for presenting sanding discs, burrs and mandrels in predetermined positions, the mat having peripheral dimensions substantially the same as the bottom of the tray.

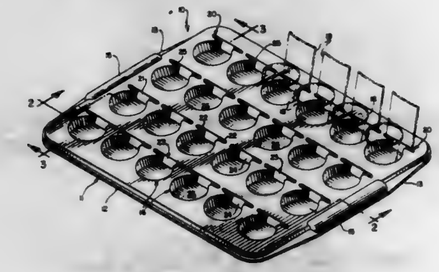
3,442,377
CAN RE-SEALERS
Ted Angelus, 60 Riverside Drive, New York, N.Y. 10024
Filed Mar. 1, 1968, Ser. No. 709,683
Int. Cl. B65d 39/00, 39/16, 41/00, 41/02, 41/16
U.S. Cl. 206—65 2 Claims



A resilient material formed to have a grip portion and a sealing portion which sealing portion is adapted to the

contour and configuration of the hole into which it is intended to be inserted whereby holes of a variety of shapes may be easily, economically and efficiently closed.

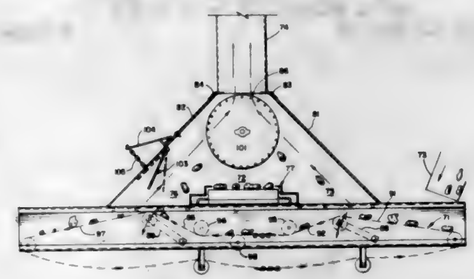
3,442,378
HOSPITAL TRAY FOR MEDICAMENT CUPS AND ASSOCIATED CARDS
Russell J. Wolfe, 2095 E. Oakfield Road, Grand Island, N.Y. 14072
Filed July 17, 1967, Ser. No. 653,818
Int. Cl. B65d *1/34, 1/00;* G09f *3/00*
U.S. Cl. 206—72 5 Claims



The one piece thin-walled plastic tray has rows of upwardly opening cup-shaped recesses to hold medicament cups. Each recess opens at one side to the center of an upwardly opening card receiving slot, these slots having alining end portions and protuberances at their centers with standing faces projecting toward the recesses, the slant being upwardly and rearwardly. The top edge of each protuberance is in line with the corresponding rear edges of the end portions of the slot, so that when a card or pack of cards, with the patient's name and pertinent instructions, is forced, bottom edge first, down into the slot it is bowed or flexed to fit into its slot around the protuberance, and by virtue of the slanting face of the latter, is both held under the pressure induced by the flexure of the card, so as not to blow or fall out, and also at such tilted angle to the vertical that the data is readily visible from above the tray.

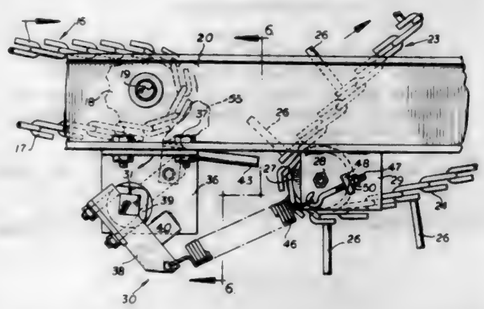
3,442,379
AIR SUCTION SEPARATOR FOR HARVESTERS
Fred W. Schneider, Mitchell, and Willard E. Morris, Gering, Nebr., assignors, by mesne assignments, to Lockwood Corporation, Gering, Nebr., a corporation of Delaware
Filed Aug. 11, 1966, Ser. No. 571,868
Int. Cl. B07b *4/08, 3/12*
U.S. Cl. 209—137 4 Claims

An apparatus for separating vegetables such as potatoes from rock contaminants including air suction chamber, feed conveyor for moving feed mixture in underlying relation to chamber air inlet having adjustable inclined stretched at air inlet, takeaway conveyor in chamber above feed conveyor onto which vegetables are elevated by a suction effect, and improved sectioned flap member forming extension of wall bordering inlet pivotally mounted for free swinging movement of each section in one direction to provide clearance for oversize contaminants and adjustable stop for each flap section to limit inward swing to one of plurality of settings to change area of air inlet to vary the suction effect on vegetables. Foraminous member in chamber above takeaway conveyor to direct elevated potatoes onto takeaway conveyor. Another form has dual air inlets disposed along feed conveyor between transverse takeaway conveyor with at least downstream inlet employing said improved sectioned



flap member and arcuate foraminous vegetable directing member above takeaway conveyor.

3,442,380
DEVICE FOR USE IN HANDLING ROOT CROPS
Arthur G. Barows, Downers Grove, Edward W. Parrish, Westmont, and Robert C. Miner, Clarendon Hills, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Aug. 4, 1967, Ser. No. 658,402
Int. Cl. B07b *1/28;* A01d *33/04*
U.S. Cl. 209—241 7 Claims

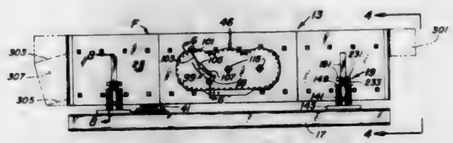


In the moving of beets and the like over conveyors and the transfer therefrom to elevators having fingers adapted to pick up beets from the conveyor, to prevent beets falling through where the transfer is made with the aid of a grate having radial bars interfitting with the fingers of the elevator, the grate assembly being biased to a normal operating position but yieldable in one direction to permit rocks to fall through to the ground, the grate bars also being pivotally mounted to rock in the other direction to prevent jamming by stones picked up by the elevator teeth.

3,442,381
VIBRATORY SCREENING APPARATUS
Louis W. Johnson, 3440 Franklin Blvd., Eugene, Oreg. 97403
Filed Apr. 25, 1966, Ser. No. 545,023
Int. Cl. B07b *1/34*
U.S. Cl. 209—326 7 Claims

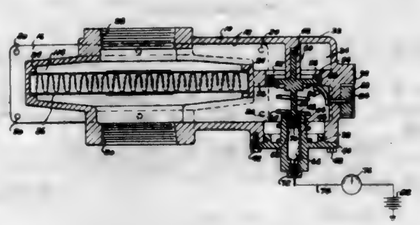
A vibratory screen is driven by three pairs of eccentric weights 57, 81 and 83 driven by shafts 42, 72 and 73 extending through tubes 47 connected to the side of

the screening box. The weights 57 and 83 are in phase and are driven in the same direction while the weights 81 are driven at the same rate of speed as that of the weights 57 and 83 but in the opposite direction. The drive of the weights is through a chain 69 which can be disconnected from the weights 81 to permit the weights



81 and 83 to be rotated by indicating cranks 116 to new positions to change the phase relationship of the weights 81 relative to the weights 57 and 83. Lubrication is effected by the chain 69 carrying oil from a trough 123 to channel 121 from which it drops to a spout 125. The oil is received in groove 127 from the spout and is slung therefrom to bearing 63.

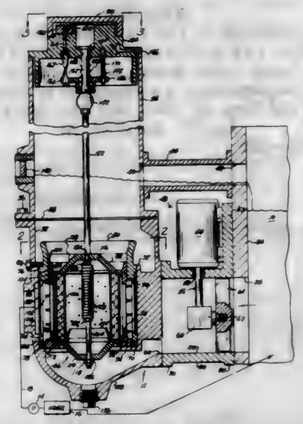
3,442,382
FLAT FILTER INDICATOR
Nils O. Rossen, Bloomfield Hills, Mich., assignor, by mesne assignments, to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Oct. 8, 1965, Ser. No. 494,214
Int. Cl. B01d *35/14*
U.S. Cl. 210—90 11 Claims



A filter device includes a flat rectangular filter element carried within a filter chamber, a second chamber is in registry with the filter chamber and a piston is carried within the second chamber with one side communicating with the inlet side of the filter element and an opposite side communicating with the outlet side of the filter element, an electrical circuit is connected to the piston to indicate changes in the pressure differential across the filter element to thereby indicate the degree of clogging of the filter element. In a second embodiment a second mechanical indicating means is provided.

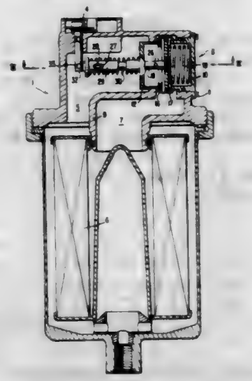
3,442,383
SUPERCHARGED FILTER
Nils O. Rossen, Bloomfield, Borje O. Rossen, Ann Arbor, and Oscar E. Rossen, Grosse Pointe, Mich., assignors, by mesne assignments, to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Nov. 16, 1966, Ser. No. 594,793
Int. Cl. B01d *35/12, 27/10, 29/38*
U.S. Cl. 210—91 17 Claims

A filter device constructed to permit continued operation of the system to which the device is connected while permitting the filter element to be removed for cleaning or replacement and including pump apparatus operable to supercharge the fluid at the intake of the filter housing to insure at all times a proper fluid level therein. The filter housing includes a lower portion having an inlet, an outlet



and a filter element intermediate said inlet and outlet and an upper tubular portion throughwhich said element may be removed.

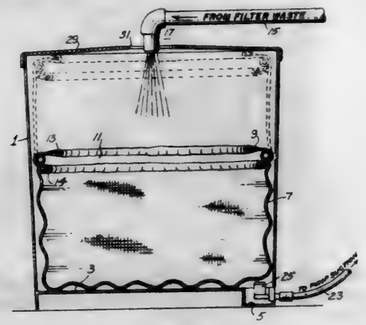
3,442,384
COMBINATION FILTER AND SURGE RESISTANT BYPASS VALVE
George T. Downey and William J. Sample, Corry, Pa., assignors to Aero-Flow Dynamics, Inc., Corry, Pa.
Filed July 11, 1967, Ser. No. 652,603
Int. Cl. B01d *35/14, 27/10;* F16k *17/10*
U.S. Cl. 210—90 11 Claims



A fluid filter element, particularly for use in aircraft fuel systems, having a pressure responsive valve for bypassing the filter when it becomes clogged and produces a large pressure differential across the filter. The valve employs two relatively moveable valve portions connected together for relative limited movement by mechanical lost motion connection and sealed with respect to each other by means of a diaphragm. The valve portions are also sealed by a diaphragm with a dash-pot chamber for dampening movement of the outer most valve portion. The surfaces of the valve portions are arranged such that the outermost valve portion first moves away from the valve seat and after a predetermined movement it will engage the inner most valve portion and move it away from the valve seat to open the bypass valve. The valve position indicator is provided with a lost motion connec-

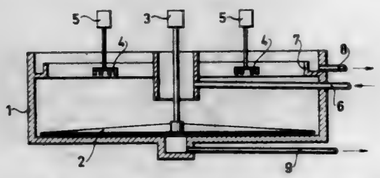
tion so that the initial movement of the outer most valve portion will not affect the indicator.

3,442,385
FILTER ASSEMBLY INCLUDING A FLOAT SUPPORTED, COLLAPSIBLE FILTER ELEMENT
Floyd M. Nash, Little Rock, Ark., assignor to Jacuzzi Bros., Incorporated, a corporation of California
Filed May 16, 1966, Ser. No. 550,233
Int. Cl. B01d *23/20*
U.S. Cl. 210—109 6 Claims



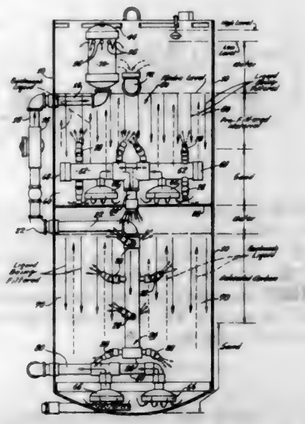
A filter assembly for filtering backwash water of a swimming pool system, comprising a tank to receive the backwash water, and a filter element in the tank, in the form of a sack having a float ring affixed thereto about the mouth of the sack, and a float valve in a sump located in the floor of the tank.

3,442,386
PLANT FOR TREATING SEWAGE WATER
Lars G. Malm, Roslags-Nasby, and Hans G. Hilborn, Enskede, Sweden, assignors to Industrikemiska Aktiebolaget, a corporation of Sweden
Filed Jan. 24, 1966, Ser. No. 522,530
Claims priority, application Sweden, Jan. 25, 1965, 973/65
Int. Cl. C02c *1/36, 1/30, 1/10*
U.S. Cl. 210—195 3 Claims



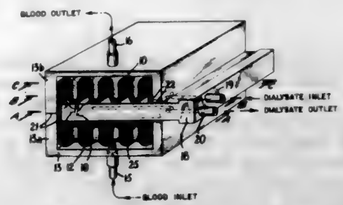
A plant for treating sewage water is disclosed wherein there are a plurality of tanks each of which is identical in construction and accessory equipment. Each tank includes an inlet and outlet for the sewage water, an outlet for the sludge, a sludge scraper, and aeration means. All of the sewage water inlets and outlets are connected to a sewage water control center having diverter means whereby the flow of sewage water may be controlled between the tanks, and all of the sludge outlets are connected to a sludge control center having a pump and diverting means whereby the flow of sludge from each of the tanks may be controlled. With this arrangement the plant is made extremely flexible since flow of sewage water and sludge may be directed in any arbitrarily required sequence through the tanks.

3,442,387
FILTERING APPARATUS
Martin Joseph Berardi, 149 NE. 98th St., Miami Shores, Fla. 33153
Filed June 26, 1967, Ser. No. 648,696
Int. Cl. B01d *23/28, 23/24*; C02b *1/28*
U.S. Cl. 210—203 5 Claims



An improved apparatus for purifying a liquid is described which includes aerating, precipitating and coagulating means for taking certain dissolved chemicals out of solution so that they may be subsequently filtered in the filter beds of the apparatus, and which includes means for rapidly and efficiently backwashing the filter beds.

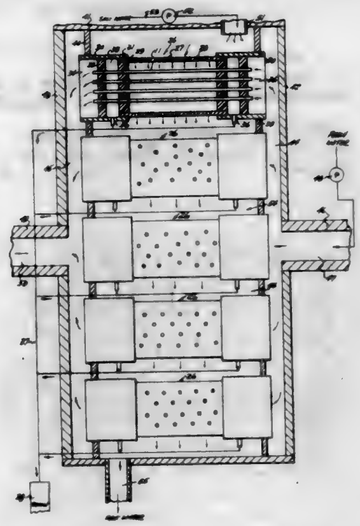
3,442,388
ARTIFICIAL KIDNEY HAVING A CORRUGATED, CONVOLUTED MEMBRANE
David B. Pall, Roslyn Estates, N.Y., assignor to Pall Corporation, Glen Cove, N.Y., a corporation of New York
Filed Mar. 27, 1967, Ser. No. 626,144
Int. Cl. B01d *13/00, 27/06, 29/06*
U.S. Cl. 210—321 15 Claims



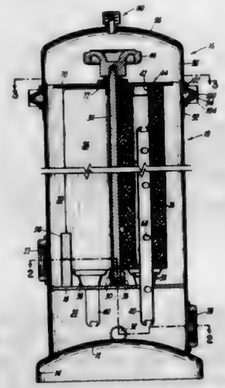
An artificial kidney is provided in which blood is purified by dialysis. The kidney employs a corrugated semipermeable dialysis membrane disposed within a housing having inlets and outlets. The corrugations of the membrane define the passages within the housing for flood flow and dialysate flow and provide a dialyzing connection between the passages.

3,442,389
DESALINIZATION APPARATUS
Morris Mendelson, 16156 Oxley Road, Southfield, Mich. 48075
Filed Apr. 17, 1967, Ser. No. 631,547
Int. Cl. C02b *1/82*; B01d *13/00*
U.S. Cl. 210—321 5 Claims

Apparatus for desalinating sea water which includes a housing with end walls and headers spaced inwardly thereof defining fresh water chambers and between the said headers a salt water chamber with an inlet connected to a source of salt water under pressure connected with said salt water chamber and an outlet connected to said salt water chamber, and a series of tubular cartridges within the housing mounted between the said headers with their outlets in communication with the fresh water chambers, and a plurality of semipermeable membranes nested and sealed within each cartridge body.

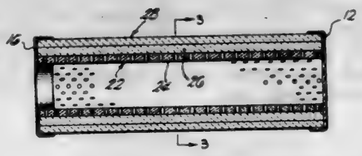


3,442,390
MULTICARTRIDGE FILTER
Raymond Mark Petrucci, Waterbury, and Stephen Barrett Barmore, Southington, Conn., assignors to American Machine & Foundry Company, a corporation of New Jersey
Filed Nov. 27, 1967, Ser. No. 685,859
Int. Cl. B01d *29/26*
U.S. Cl. 210—323 5 Claims



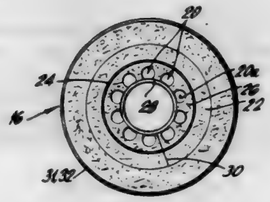
A vessel employing a plurality of cartridge-type radial flow filters including means for supporting the cartridges, sealing the ends thereof while permitting axial effluent flow.

3,442,391
FILTER ELEMENT
John W. Bozek, Waterford, Mich., assignor to The Bendix Corporation, a corporation of Delaware
Filed Feb. 13, 1967, Ser. No. 616,150
Int. Cl. B01d *29/20, 39/16*
U.S. Cl. 210—457 8 Claims



A tubular filter element, for liquids such as fuel, formed of a plastic bonded fibrous material having a two-ply core in which the inner ply is perforated.

3,442,392
FILTER CARTRIDGE AND METHOD OF MAKING SAME
Francis D. Skelley, 72 67th St., West New York, N.J. 07093
Filed Oct. 7, 1966, Ser. No. 585,026
Int. Cl. B01d *27/00*
U.S. Cl. 210—491 8 Claims



A filter construction includes a tube of a fibrous material such as fiber glass having an interior surface with at least one groove therein bounded by a groove surface which forms a narrowing throat opening at the interior surface of the tube. The groove surfaces are advantageously formed in a curve and they have an interior dimension larger than the size of the throat opening. The grooves provide a greatly increased area for filtering action.

The filter cartridge is formed with the fiber glass material by heating a surface of the material to cause the fibers to become somewhat brittle and then cutting grooves across the surface while the material is arranged flat. Thereafter, the bat is formed into a tubular shape and the grooves oriented inwardly to cause a slight closing of the opening into the grooves.

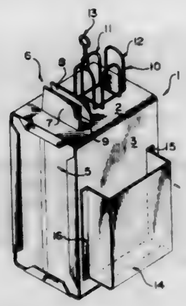
3,442,393
NAPKIN AND CONDIMENT HOLDER
Irvin Jerome Koppelman, 504 W. College Ave., Salisbury, Md. 21801
Filed Oct. 17, 1966, Ser. No. 587,142
Int. Cl. A47g *21/16, 21/18*
U.S. Cl. 211—13 2 Claims

1. A unitary structure for holding and dispensing a plurality of dining table accessories comprising:
a rigid frame having unitary, vertical front and rear walls, top and bottom walls joining said vertical walls and at least one sidewall having an opening for receiving and dispensing napkins;

a holder comprising an elongated clip of resilient material having a base and two side members of generally U-shaped cross section with said side members extending from said base member and curved toward one another, the spacing between walls of said clip adjacent said base being at least as wide as a member to be held thereby;

said clip being secured to said top wall of said frame;

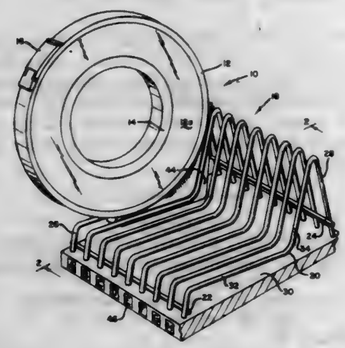
a further holder comprising a pair of U-shaped wire members disposed generally perpendicular to one another and defining a generally rectangular structure with an open top for receiving small packets of goods, said further holder being secured to the top of said frame; and



at least one further member secured to and defining with a vertical wall of said frame a receptacle for paper and like products;

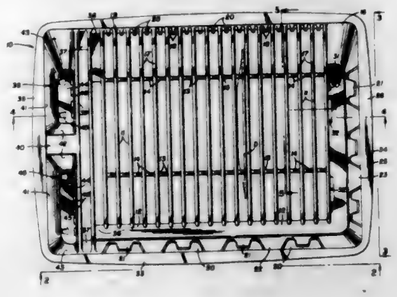
a generally flat plate of resilient material secured to a further wall of said frame adjacent one end of said plate and having the other end of said plate in contact with said further wall.

3,442,394
TAPE REEL STORAGE SYSTEM
Thomas W. McCune, San Francisco, and Francis S. Foote, Jr., Berkeley, Calif., assignors to Tab Products Co., San Francisco, Calif., a corporation of California
Filed Feb. 15, 1967, Ser. No. 616,243
Int. Cl. A47g *29/00*
U.S. Cl. 211—40 **11 Claims**



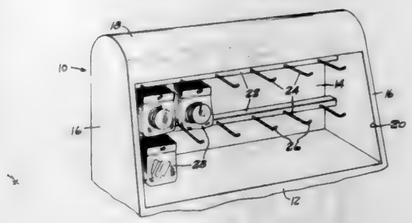
Tape storage system wherein protective reel covers are supported side by side on a shelf with interlocking members on the covers and shelf holding the reel erect and in fixed position. The interlocking means are disposed within an area of the projection of the vertical cross-section of the reel cover for closer storage and maximum utility of space. Preferably, the storage rack comprises an array of spaced rods with a slide shoe having a rearward extension which engages between rear upright portions of the rods to interlock with them.

3,442,395
PLASTIC DISH DRAINER
William D. Taylor, Wooster, Ohio, assignor to Rubbermaid Incorporated, Wooster, Ohio, a corporation of Ohio
Filed Sept. 5, 1967, Ser. No. 665,548
Int. Cl. A47g *19/08;* **B65d** *1/24, 1/36*
U.S. Cl. 211—41 **5 Claims**



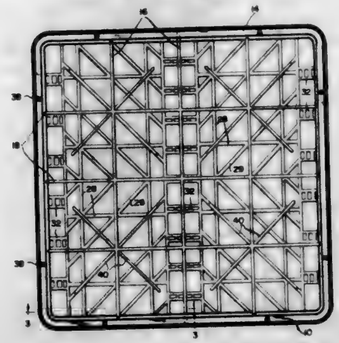
A plastic dish drainer having a flat bottom consisting of parallel ribs spaced a short distance apart and extending continuously into an inclined side wall of the drainer. The opposite side wall and one end wall contains upright resilient tabs for holding glassware, and the other end wall comprising two built-in cutlery holders.

3,442,396
FIXTURE FOR DISPLAYING PACKAGED PRODUCTS
Herbert A. Cass, South Bend, Ind., assignor to Peter Eckrich and Sons, Inc., Fort Wayne, Ind., a corporation of Indiana
Filed Sept. 26, 1966, Ser. No. 581,974
Int. Cl. A47f *3/02, 5/00*
U.S. Cl. 211—59 **12 Claims**



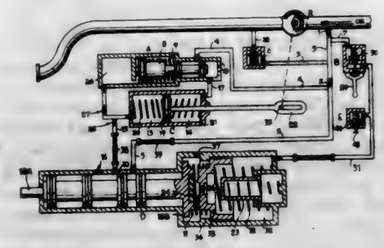
A fixture for displaying packaged products having suspension holes in the packages thereof. The fixture comprises a rigid support having spaced apertured front and rear parts whose apertures slidably receive a package supporting unit having a rod with a straight shank which has a reduced part thereof spaced from one end and releasably engages a retaining part to be anchored in package supporting position relative to the support. The apertured packages may be applied over the rod shank when the rod is removed from the support.

3,442,397
DISHWASHER RACK
Robert D. Jaffee, Skokie, Irving L. Mark, Chicago, and Darrell L. Downer, Park Ridge, Ill., assignors to Amco Wire Products Corp., Chicago, Ill., a corporation of Illinois
Continuation of application Ser. No. 548,928, May 10, 1966. This application June 4, 1968, Ser. No. 740,781
Int. Cl. A47l *15/50*
U.S. Cl. 211—71 **5 Claims**



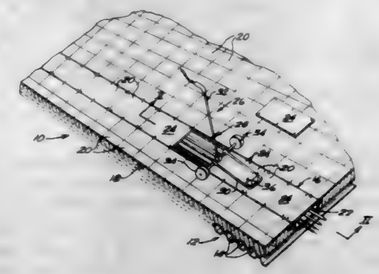
A dishwasher rack for cups or glasses includes compartments for individual vessels with a support extending at least partially across the compartment adjacent its bottom to support the vessel in an inverted and tilted position. Preferably, opposing portions of the lip of the inverted vessel are supported so that it will rock back and forth in response to the washing spray.

3,442,398
RAILWAY VEHICLE COUPLING
Giacomo Di Bartolomeo, Turin, Italy, assignor to Compagnia Italiana Westinghouse Freni e Segnali, Turin, Italy
Filed Aug. 22, 1967, Ser. No. 662,499
Claims priority, application Italy, Sept. 10, 1966, 21,283/66, Patent 776,840
Int. Cl. B61g *5/06*
U.S. Cl. 213—76 **9 Claims**



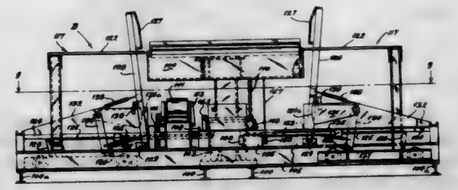
Apparatus automatically controls opening and closing of brake pipe end cocks on uncoupling of two railway vehicles provided with automatic couplers includes a pneumatic double acting control cylinder biased to a middle position and connected by loss motion mechanical transmission to the end cock. The pneumatic control cylinder is controlled through pneumatic lines a pneumatic distributor having a member movable on affecting coupling or uncoupling to displace the piston of the control cylinder from a middle position. A pneumatic check cylinder is connected to the control cylinder and distributor to return the piston of the control cylinder to its middle position. An uncoupling valve in the pneumatic circuit has a control connected to a hand operated lever.

3,442,399
APPARATUS FOR RAISING AND LOWERING COVER PLATES
Donald D. Snavely, Atlanta, Ga., assignor to H. H. Robertson Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 28, 1966, Ser. No. 590,272
Int. Cl. B66c *1/42*
U.S. Cl. 214—1 **7 Claims**



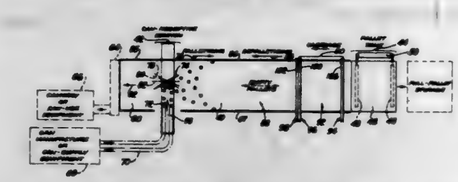
A portable device for removing and replacing a metal cover plate of an electrical trench. The device includes ground engaging elements positioned to straddle the electrical trench and is pivotal about a pivotal axis extending between the ground engaging elements. The device includes one or more magnet means which are spaced from the ground engaging elements and remote from the pivotal axis. The cover plate is moved relative to the electrical trench by energizing the magnet means to retain the cover plate by magnetic attraction and pivoting the device about the pivotal axis with the cover plate thus retained.

3,442,400
CARTON PALLETIZING APPARATUS
Ernest E. Roth, Arnold, and Henry E. Tanner, Affton, Mo., assignors to Alvey Conveyor Manufacturing Company, St. Louis, Mo., a corporation of Missouri
Filed Mar. 2, 1967, Ser. No. 620,090
Int. Cl. B65g *47/24, 47/82*
U.S. Cl. 214—6 **6 Claims**



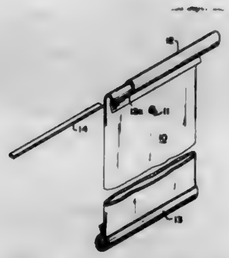
Carton palletizing apparatus in which elevator means is movable between a lower carton receiving position and an elevated carton storing position, means being located in the carton storing position in the form of tines which are insertable between the rollers forming the bed of the elevator means so as to be moved inwardly coincidentally with the elevator means to take over support and temporary storage of the cartons while the elevator means is lowered to the first position to receive additional cartons. The apparatus is capable of handling a plurality of cartons in a layered pattern and storing a plurality of layers until a suitable stack has been formed, which stack may then the deposited on a pallet for transportation and subsequent handling.

3,442,401
PALLETIZING AND DEPALLETIZING EQUIPMENT
Wayne F. Wolfe, Orange, Alwin M. Miller, Fremont, and Roland Miller, Orange, Calif., assignors to Hunt Foods and Industries, Inc., Fullerton, Calif., a corporation of Delaware
Original application Oct. 23, 1964, Ser. No. 406,095, now Patent No. 3,389,810, dated June 25, 1968. Divided and this application Jan. 29, 1968, Ser. No. 723,636
Int. Cl. B65g 57/24, 1/04; B65b 43/42
U.S. Cl. 214—6 12 Claims



Equipment for palletizing excess cans from can supply equipment and to depalletize same when later needed by a a can use equipment. A conveying system permits the movement of cans from the can supply equipment normally to the can use equipment, or to the palletizing station when there is an oversupply of cans from the can supply equipment. The conveying system permits direct supply from the depalletizing station to the can use equipment when necessary.

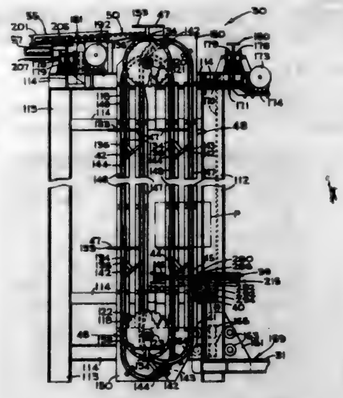
3,442,402
DUNNAGE SERVICE
Robert O. Baxter, Camden, Ark., assignor to International Paper Company, New York, N.Y., a corporation of New York
Continuation of application Ser. No. 398,214, Sept. 22, 1964. This application Nov. 10, 1966, Ser. No. 593,589
Int. Cl. B65g 1/14; B61d 45/00
U.S. Cl. 214—10.5 4 Claims



An air-inflated dunnage unit made from paper and plastic and closed at its ends by a clamp formed from a split hollow tube or the like and a rod wider than the split in the tube.

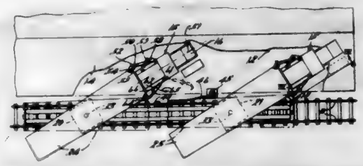
3,442,403
WAREHOUSING SYSTEM
Stanley M. Weir, Palo Alto, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Original application Feb. 25, 1966, Ser. No. 530,057, now Patent No. 3,379,321, dated Apr. 23, 1968. Divided and this application Nov. 3, 1967, Ser. No. 705,246
Int. Cl. B65g 49/00; E04h 5/00
U.S. Cl. 214—16.4 6 Claims

A warehouse with a plurality of space storage bins and a movable vehicle with an elevatable operator's platform thereon for positioning an order picking operator at various locations in the warehouse adjacent a selected bin for removing articles therefrom. A table, a plurality of laterally spaced conveyors and an article positioning means are mounted on the platform. An article elevating mechanism is mounted on the vehicle and removed articles placed on



the article positioning means for vertical movement to an article stripper device where the articles are removed from the elevating mechanism onto a conveyor for movement of the articles to preselected destinations.

3,442,404
METHOD AND APPARATUS FOR DISPOSAL OF WASTE EMPLOYING RAIL AND OFF-ROAD EQUIPMENT
Robert J. Pioch, Jackson, Mich., assignor, by mesne assignments, to Kysor Industrial Corporation, Cadillac, Mich., a corporation of Michigan
Filed Apr. 27, 1967, Ser. No. 634,283
Int. Cl. B65g 67/32; B61d 9/00; B60p 1/04
U.S. Cl. 214—38 12 Claims



Railroad freight cars of the so-called "Flexi-Van" type are used to transport special reinforced removable van-type bodies which are rotatable about a vertical axis on the rail car, so that an end of the van is accessible from a position beside the track. The rail car has a rotatable and elevatable turntable for supporting each van body. An end of the van has a port through which material may be injected and subjected to pressure from a position beside the track when the van body is turned to an angular position relative to the rail car. An injection-compaction unit is fixedly installed at a predetermined position beside the trackway, at an angle thereto, for coupling to each van when so turned. A train of cars containing empty vans is first spotted approximately, by locomotive, so that a first (or last) van on the train is near a desired injection-compaction unit. The van is aligned with the injection-compaction unit by moving the car along the track by means of a winch attached to the platform, and by turning, and adjusting the height of, the turntable. A final alignment and coupling of the van to the injection-compaction unit is effected by grappling means on the injection-compaction unit, constructed so as to partially pull the van off the turntable.

The van is then loaded and the load placed under compaction by the injection-compaction unit, which has a ram working through a hopper-fed charging chamber and into the van through the charging port.

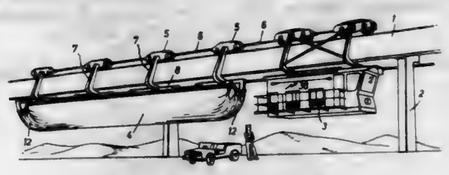
When the van is fully loaded, the ram is used to apply a closure to the ramming port. The grappling means is then released and the ram is employed to push the van back onto the turntable to a fully installed and locked position. The van is then turned to a position parallel to the car and locked to the rail car for transportation to a dump site.

The same apparatus and procedure are used to successively load a plurality of vans on a train of cars, from beside the track, without removing the vans or separating the rail cars from one another.

At an unloading station located near a dump site, each van is again partially rotated so as to extend transversely, and is then pulled from the opposite side of its rail car by a special trailer having a lift frame located at a predetermined height corresponding to that of the turntable when the turntable is partially raised. The trailer is provided with an endless conveyor-type actuator engageable with abutments on the bottom of the van to pull the van off the turntable onto the tilt frame of the trailer. The van is locked to the tilt frame, hauled to the final dump site, and the tilt frame is raised by a multiple hydraulic cylinder system to dump the contents from the van. Two hydraulic cylinder systems act on the lift frame, one near the forward end, remote from the pivot, and the other closer to the pivot point. The trailer has a load carrying bogie which engages the ground and means whereby the bogie is longitudinally movable relative to the trailer frame. The bogie is connected to the lift frame by linkage in such manner that as the lift frame is raised, the bogie is moved toward the rear of the frame at a rate which keeps the bogie from moving too far from the center of gravity of the load as the center of gravity moves due to tilting of the frame.

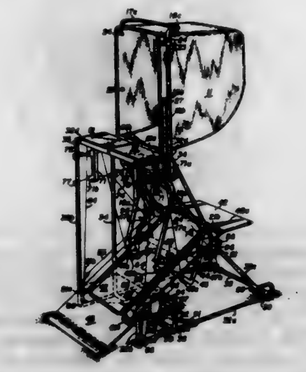
The emptied van is reinstalled upon the turntable of the rail car when the semi-trailer is realigned with the turnable, by releasing the locking means and reversing the action of the conveyor actuator.

3,442,405
TRANSPORTING ARRANGEMENT WITH TROUGH-SHAPED CONTAINERS OF FLEXIBLE MATERIAL
Werner Schaeffer, Hoffnungsthal, Bezirk, Cologne, Hoverweg 8, Germany
Filed Dec. 19, 1967, Ser. No. 691,910
Claims priority, application Germany, Dec. 20, 1966, Sch 39,989; July 26, 1967, Sch 41,060
Int. Cl. B65g 65/00, 67/22; B61b 13/06
U.S. Cl. 214—42 20 Claims



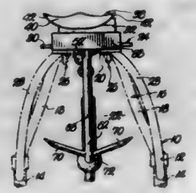
A transporting arrangement in which a substantially trough-shaped container of flexible material is suspended by means of ropes or the like on carriers which are movable along a predetermined path and in which the ropes are connected to bottom portions and upper edge portions of the container and guided over rollers carried by the carriers in such a manner that, when bottom portions of the container are engaged and raised by means located along a portion of the path, the edge portions of the container will move downwardly to an elevation below the raised bottom portions to thereby discharge material transported in the container from the latter.

3,442,406
MATERIAL CARRIER UNLOADING MEANS AND METHOD
Jung Y. Lowe, San Francisco, Calif. (3956 Koko Drive, Honolulu, Hawaii 96816)
Filed Apr. 18, 1967, Ser. No. 631,675
Int. Cl. A47f 9/02; B65g 67/48
U.S. Cl. 214—62 31 Claims



A material carrier including a basket which is generally horizontal while carrying the material and which can be tilted by manipulation of the basket and the carrier frame to unload the basket contents. The basket is maintained in a stable tilted position by frictional engagement of the basket with the frame. An unloader is also provided which automatically positions the carrier at an unloading station and tilts the basket for unloading. The unloader then releases the unloaded carrier with the basket thereof in either the horizontal or tilted position.

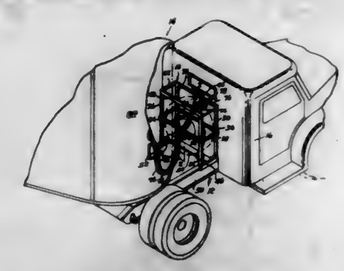
3,442,407
MEAT HANDLING HEAD FOR HAND TRUCKS
Walter A. Reich, Independence, Mo., assignor to A. Reich & Sons, Inc., Kansas City, Mo., a corporation of Missouri
Filed Mar. 6, 1967, Ser. No. 620,687
Int. Cl. B62b 1/06; B60p 1/64
U.S. Cl. 214—383 10 Claims



A meat handling head for use with a hand truck having an elevator to adapt the truck for handling meat carcasses such as quarters of beef and the like. The head includes a bracket mounting a pair of hooks thereon. One of the hooks is particularly adapted for handling hindquarters of beef and is mounted for movement on the bracket from a retracted position to a position for hooking engagement with the hindquarter. The other hook is particularly adapted for handling forequarters and is mounted on the bracket for swinging in a pair of

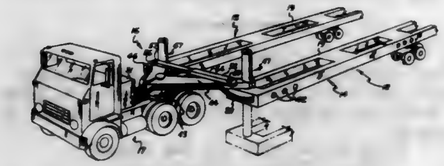
mutually lateral directions so that the hook may be moved from a retracted position and into a position for positively engaging and hooking the ribs of the forequarter.

3,442,408
SPARE TIRE CARRIER
Jack H. Kost and Sharon K. Kost, both of Martin, N. Dak. 58758
Filed May 19, 1967, Ser. No. 639,667
Int. Cl. B62d 43/02
U.S. Cl. 214—451 4 Claims



A spare tire carrier for a tractor-trailer rig. The tire carrier comprises an open framework cage seated on and secured to the I-beam frame of the rig behind the cab. A tire is hoisted by a winch mounted on the cage, into the cage through an open side in the framework. A hinged latch bar on the cage closes the open side of the framework to prevent accidental displacement of the tire from its housed position.

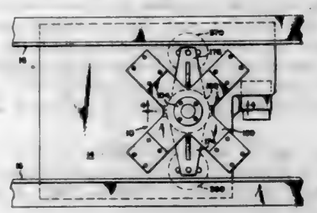
3,442,409
TRANSPORT VEHICLE
John G. Larson, Pleasant Hill, Calif., assignor to Beverly A. Larson, Pleasant Hill, Calif.
Filed Feb. 27, 1967, Ser. No. 618,936
Int. Cl. B60p 1/02; B62d 53/06
U.S. Cl. 214—512 22 Claims



The present invention relates to a transport vehicle constructed with a bed adjustable as to its area size, and capable of handling very large and/or heavy loads, and which is equipped with retractable caster-type wheels to render it capable of self-loading and unloading, with the caster wheels including a plurality of wheels mounted on a crank axle and fluid means whereby the wheels are self-compensating and provide an equal distribution of the load as the vehicle travels over irregular contours.

3,442,410
TURNTABLE APPARATUS
Daniel H. Solomonson, Port Townsend, Wash., assignor to Lamb-Grays Harbor Co., Inc., Hoquiam, Wash., a corporation of Washington
Filed Dec. 5, 1966, Ser. No. 599,048
Int. Cl. B66f 9/14; B65g 47/22
U.S. Cl. 214—730 6 Claims

A pulp bale turning apparatus is provided with turntable rotating means that control the acceleration and deceleration of the turntable during a turning cycle through the inner action of fluid operated cylinders attached to a crank assembly. The turntable is adapted to be raised to lift an object to be rotated above the plane of conveyor line, such that the object may be rotated in raised position and then lowered back onto the conveyor



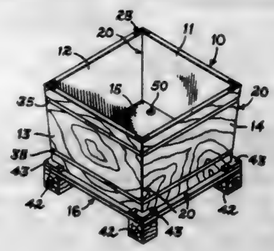
line. An indexing arrangement is provided whereby the turntable may be rotated only in raised position, with the turntable rotating means being permitted to recycle to its original position after the turntable is lowered without rotating the turntable.

3,442,411
RESEALABLE CONTAINER CLOSURE AND A PROCESS FOR ITS MANUFACTURE
James D. Mahoney, McMurray, Pa., assignor to Mobay Chemical Company, Pittsburgh, Pa., a corporation of Delaware
Filed Dec. 28, 1964, Ser. No. 421,565
Int. Cl. B65d 53/00, 53/04, 53/06
U.S. Cl. 215—40 4 Claims



A process for preparing a container closure comprised of a substantially non-porous cap or substrate and a substantially rigid polyurethane foam inner liner adhered thereto, wherein the polyurethane foam is prepared from a polyaryl polyalkylene polyisocyanate, a blowing agent and an organic compound containing at least two active hydrogen-containing groups as determined by the Zerewitinoff method and having a high degree of dimensional stability as well as a density of about 1.5 lbs./ft.^{3}, and the unique container closure prepared therefrom.

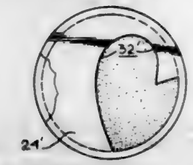
3,442,412
CORNER STRUCTURE FOR WALL MEMBERS
Thomas Munroe, Dayton, Ohio, assignor to Moraine Box Company, Dayton, Ohio, a corporation of Michigan
Filed Apr. 10, 1967, Ser. No. 629,701
Int. Cl. B65d 9/38, 63/00
U.S. Cl. 217—69 12 Claims



A container assembly utilizing a concealed high strength connection between adjacent panels of plywood or similar

material which provide a rigid container which is air and water tight. In one form, the container is utilized as a bin box capable of being nested when not in use and being stacked when full so that the bottom of one container forms a lid for the adjacent lower container. In another form, the container is utilized as a modular shipping container wherein a plurality of modular filterproof boxes are enclosed in a larger shipping container for transfer as a unit.

3,442,413
MEASURING ARRANGEMENT
Harry Bernstein, 1642 Ocean Park Blvd., Santa Monica, Calif. 90405
Filed May 13, 1966, Ser. No. 549,948
Int. Cl. B65d 47/36
U.S. Cl. 220—90 1 Claim



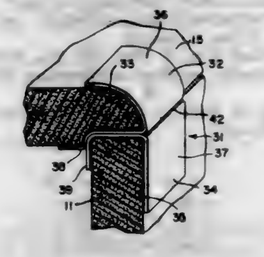
A relatively stiff sheet of material on the open top of a container for granular or powered material and having an opening providing access to the interior of the container, the opening permitting removal of material by means of a spoon and having an edge adapted to scrape excess material from the spoon and leave only a measured amount thereon. In a preferred form the edge is a continuous curve, substantially straight at one end and of progressively shorter radius toward the other end to variably determine the amount of material left on the spoon.

3,442,414
COMPACT
Pierre Pelli, Paris, France, assignor to L'Oreal, Paris, France
Filed Sept. 29, 1967, Ser. No. 671,713
Claims priority, application France, Oct. 13, 1966, 79,919
Int. Cl. B65d 43/16; A45c 15/04
U.S. Cl. 220—31 6 Claims



A compact comprising a central member moulded in one piece from resilient material and comprising upper and lower portions integrally hinged to each other and encircling a central opening, and a relatively rigid top and bottom snap-fastened to said upper and lower portions respectively.

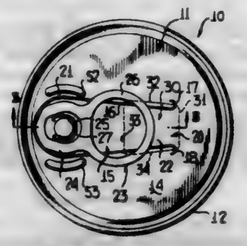
3,442,415
FOAMED PLASTIC CONTAINER WITH HINGED CLOSURE
John P. Glass, Ardmore, Pa. (% Cava Industries, 79 La Grange Ave., Essington, Pa. 19029)
Original application Oct. 6, 1964, Ser. No. 401,893, now Patent No. 3,397,806, dated Aug. 20, 1968. Divided and this application May 23, 1968, Ser. No. 731,501
Int. Cl. B65d 43/16, 51/04; E05d 1/02
U.S. Cl. 220—32 8 Claims



A hinge for a plastic foam container comprising a first tape having adhesive on one surface, a second tape having adhesive on one surface, a seam of thread connecting the tapes together at their mid-sections, with the adhesive surfaces of the tapes facing away from each other so that the tapes form a hinge for a plastic foam container having a lid and a body, with the tape sections of the first tape being fastened to the lid and the tape sections of the second tape being fastened to the body.

In another embodiment of the invention, the tapes include a mid-section panel positioned between two end panels and a seam of thread connects the tapes together at each end of the mid-section panel, and the upper tape sections are fastened to a body of a foam plastic container and the lower tape sections are fastened to a door so that the mid-section panel extends from one side of the door to the other, whereby the door is adapted to swing freely about both hinges formed by the seams of thread.

3,442,416
CONTAINER HAVING LIP PROTECTING MEANS
John B. Nicholson, Country Club Hills, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed June 19, 1967, Ser. No. 646,815
Int. Cl. B65d 17/20; A47g 19/22
U.S. Cl. 220—54 10 Claims



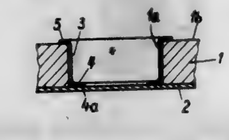
A container of the easy-opening type in which an end panel is scored to define a tear strip having starting and terminal end portions with the latter being permanently attached to the container end. The tear strip is adapted for hinging movement to an open position above the end panel upon the rupture of the score line thereby forming a raw edge. The starting and terminal end portions are disposed at diametrically opposite sides of the central axis of the container, and means underlying at least the

terminal end portion and projecting laterally beyond the score line cover the exposed raw edge in the open position of the tear strip thereby preventing damage to a user of the container which might otherwise occur in the absence of the covering means.

3,442,417
LINED STRUCTURE AND METHOD OF MAKING SAME

Alfred Pollanz, Essen, Germany, assignor to Beteiligungs- und Patentverwaltungsgesellschaft mit beschrankter Haftung, Essen, Germany

Filed Mar. 9, 1966, Ser. No. 533,062
Claims priority, application Germany, Mar. 16, 1965, B 80,988
Int. Cl. B65d *25/14, 25/34;* B21d *39/00*
U.S. Cl. 220—63 6 Claims

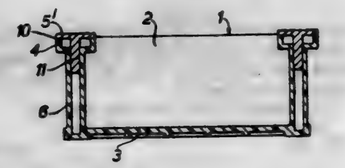


A lining connection between a container having an inner wall surface and an outer wall surface, on one hand, and a lining on the inner wall surface of said container, on the other hand, said lining being connected to said container by friction only of an insert with said container, said insert passing through passages in said container and having one end portion only welded to the lining.

3,442,418
FISH BOX MADE FROM PLASTIC MATERIAL

Svein Petro Strömberg, Strommen, Norway, assignor to Svein Stromberg & Co. A/S

Filed Nov. 18, 1966, Ser. No. 595,515
Claims priority, application Norway, Nov. 20, 1965, 160,570; Oct. 4, 1966, 165,001
Int. Cl. B65d *7/42*
U.S. Cl. 220—71 5 Claims



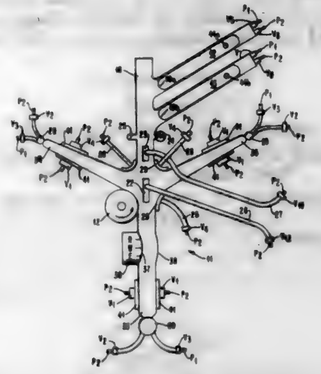
A plastic box suitable for storage and handling of fish is provided with reinforcement members to reduce the quantity of plastic required for an adequately strong box, Drain apertures and surface ribs are provided to allow for drainage and air circulation for cooling the fish. Slip resistant surfaces are provided to permit secure stacking. A top frame is frictionally fitted to the top of the side walls.

3,442,419
PNEUMATIC BELT DEVICE

Paul J. Badum, Chelsea, Heard E. Baumeister, Rhinebeck, and Vladimir Nejezchleb, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 27, 1963, Ser. No. 333,918
Int. Cl. B25h *17/16*
U.S. Cl. 226—95 24 Claims

Pneumatic means for quickly transporting an endless belt to and from a randomly-addressed pocket to a processing chamber, which reads/writes data on the belt. A pneumatic header(s) connects a processing chamber(s) to a storage pocket(s). The belt is partly deflated during storage, and while being transported. It is inflated in the processing chamber which comprises a plurality of vacu-

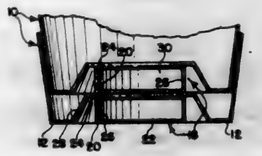


um columns, at least one being tapered. The outer surface of the belt is inflated against a rotating capstan located along one wall of the chamber to rotate the belt at the capstan speed.

3,442,420
NESTABLE CONTAINER WITH BOTTOM STACKING

Bryant Edwards, Clarendon Hills, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware

Filed Feb. 8, 1967, Ser. No. 614,650
Int. Cl. B65d *21/00, 3/00*
U.S. Cl. 220—97 5 Claims



A nestable container of thin-wall plastic construction having a stacking protuberance in the bottom wall thereof to limit the extent of telescopic association of a plurality of stacked containers.

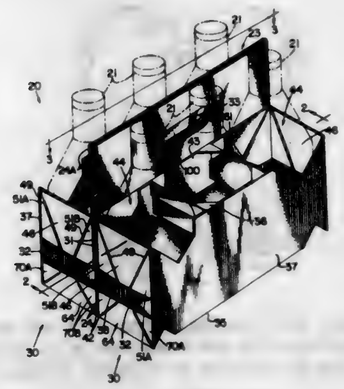
3,442,421
CARRIER FOR BOTTLE-LIKE CONTAINERS, METHOD OF MAKING SUCH CARRIER, AND BLANKS FOR MAKING SAME

Gary M. Donahue, Chesterfield County, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

Filed Jan. 23, 1967, Ser. No. 610,936
Int. Cl. B65d *75/00, 5/48*
U.S. Cl. 220—114 5 Claims

This disclosure relates to an improved carrier for a plurality of bottle-like containers wherein such carrier has a central vertical partition made of a pair of structural layers which extend the full height thereof and each structural layer has integral tubular compartment means foldably fastened thereto along a single continuous adhesive strip means with opening means in each compartment

means for receiving such bottle-like containers, to a method of making such carrier in a simple and inexpen-

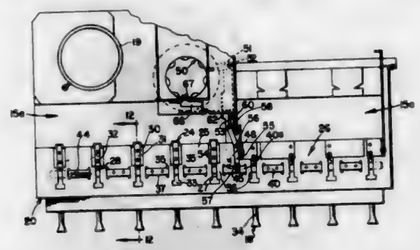


sive manner, and to substantially rectangular blanks for making same.

3,442,422
MERCHANDISE VENDING MACHINE

Dan Neidig, Atlanta, Ga., assignor by mesne assignments, to The Vendo Company, Kansas City, Mo., a corporation of Missouri

Filed May 26, 1966, Ser. No. 553,080
Int. Cl. B65h *3/44;* G07f *11/16*
U.S. Cl. 221—94 7 Claims



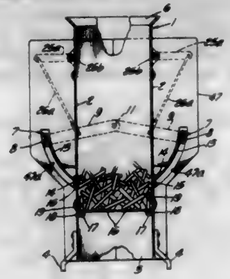
A vending machine having a plurality of article dispensers and associated actuating mechanisms for operating each of the article dispensers; a cup dispenser and clutch operatively connecting the top dispenser to the actuating mechanisms of the article dispensers, and a disabling mechanism for disengaging the clutch upon actuation of a certain group of article dispensers such that the cup dispenser will not be operated to dispense a cup when any one of the article dispensers of said certain group are actuated.

3,442,423
APPARATUS FOR DISPENSING PRECUT POTATOES AND LIKE MATERIAL

Lester W. Cozad, 333 Mariposa Drive, Ventura, Calif. 93001

Filed Jan. 9, 1967, Ser. No. 608,141
Int. Cl. B65 *83/00;* G04c *23/46;* G01f *11/46*
U.S. Cl. 222—70 4 Claims

Dispenser apparatus including a trap chamber defined between arcuate upper, tined gates and pivoted lower gates sequentially operated by solenoid actuated operating



means, for dispensing measured quantities of precut potatoes.

3,442,424
MULTIPLE COMPARTMENT COLLAPSIBLE TUBES

Sam Prussin and John Florian, Los Angeles, Calif., assignors to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware

Filed Aug. 31, 1967, Ser. No. 664,729
Int. Cl. B67b *7/26;* B65d *35/22, 47/10*
U.S. Cl. 222—81 31 Claims



A collapsible tube is disclosed which has an internal piston dividing the tube into two compartments. The piston is capable of being moved towards the discharge end of the tube. Means are provided for discharging material through the piston and through the discharge end of the tube from the compartment on the side of the piston remote from this discharge end.

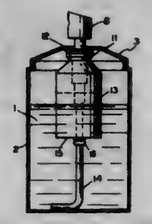
3,442,425
PLUG VALVE ASSEMBLY FOR AEROSOL BOMB TYPE DISPENSERS OF FLUID PRODUCTS

Charles D. Chambers, Huntington, Conn., assignor to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of New York

Filed Dec. 28, 1967, Ser. No. 694,309
Int. Cl. B65d *83/14;* B05b *7/24*
U.S. Cl. 222—193 5 Claims

A plug valve assembly for dispensers of fluid products and having a container for containing the fluid product to be dispensed and adapted to accommodate a propellant cartridge within the product container, said plug valve assembly comprising a hollow rod, a valve actuator on the upper end of said rod and having a nozzle therein, a cap member having an aperture therein through which the hollow rod is movable, a valve body on the lower side

of said cap member and into which said valve rod is slideable through said aperture, the assembly having the flow path for the fluid product obturated by gasket means, a propellant cartridge secured to said valve body, and a dip tube extending through said propellant cartridge to the bottom of said valve body and being connected to



said valve rod and opening into said flow path, said gasket means being a double gasket around said valve rod for sealing the openings therein which connect to the fluid product flow path, said dip tube being in fluid-tight engagement with said propellant cartridge where it passes therethrough.

3,442,426
DEVICE FOR THE TREATMENT OF TUBULAR FABRIC

Herbert Kannegiesser and Richard Juraschock, Vlotho (Weser), Germany, assignors to Kannegiesser Maschinenfabrik Gesellschaft mit beschrankter Haftung, Valdorf, near Vlotho/Weser Hollwiesen, Germany

Filed Mar. 6, 1967, Ser. No. 620,797
Claims priority, application Germany, Dec. 16, 1966, K 60,937
Int. Cl. A41h *5/01*
U.S. Cl. 223—69 15 Claims



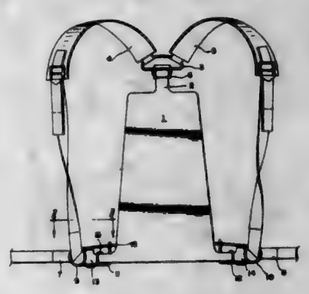
A device onto which tubular fabric is fitted for treating by steaming and pressing. The device comprises a thin, flexible flat form corresponding to the general outline of the tubular fabric to be treated. The flat form has openings formed therein which are closely adjacent to each other to provide a thin-walled construction. The flat form includes an outer border portion having no openings formed therein to prevent damage to the tubular fabric being fitted thereon. The diameter of said openings is of such a small dimension that no impressions appear on the tubular fabric during pressing of the same.

3,442,427
CARRYING DEVICE

Jan Arne Arnell and Berat Inge Jansson, Lidingo, Sweden, assignors to AGA Aktiebolag, Lidingo, Sweden, a corporation of Sweden

Filed Dec. 14, 1966, Ser. No. 601,589
Claims priority, application Sweden, Dec. 23, 1965, 16,716/65
Int. Cl. A45f *3/14*
U.S. Cl. 224—25 4 Claims

A device of the type for carrying an object on a person's back, comprising a generally flat back portion with an upper lug for receiving the upper end of a pair of shoulder straps and two lower laterally extending lugs, each having a holding element for receiving the lower end

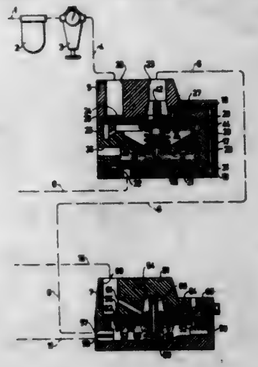


of the straps. Each holding element is a stiff resilient member having a loop for attachment to its respective lug and a ring for receiving its respective shoulder strap.

3,442,428
MEANS FOR LATERAL GUIDING OF A WEB OF MATERIAL

Erling Ingvar Nilsson, Lund, Sweden, assignor to AB Akerlund & Rausing, Lund, Sweden

Filed July 6, 1967, Ser. No. 651,516
Claims priority, application Sweden, July 27, 1966, 10,211/66
Int. Cl. B65h *25/26*
U.S. Cl. 226—19 8 Claims



A lateral guiding means for a running web of material using a pneumatic sensing means to determine the position of the web margin. The sensing means controls the pressure in a pressure box which in turn controls the position of the web margin.

ERRATUM

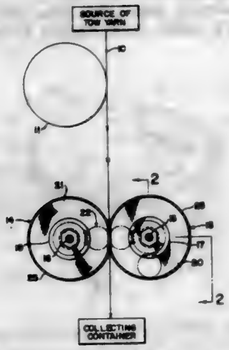
For Class 226—95 see:
Patent No. 3,442,419

3,442,429
YARN FORWARDING APPARATUS

Kenneth M. McLellan, Mentor, Ohio, assignor to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio

Filed Mar. 21, 1967, Ser. No. 624,881
Int. Cl. B65h *17/08*
U.S. Cl. 226—186 2 Claims

Forwarding wheels for delivering continuous filament yarn or tow are made of sponge-like polyurethane rubber

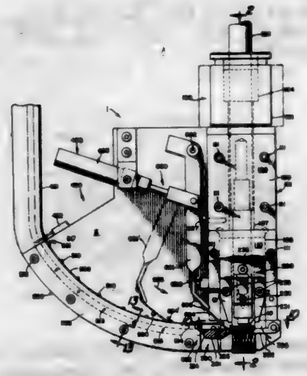


alone or with a woven textile circumferential cover made of continuous spun liquid absorptive filaments.

3,442,430
MODULE INSERTION MACHINE

Daniel W. Ackerman, Binghamton, and Robert H. Holmes, Marathon, N.Y., assignors to Universal Instruments Corporation, Binghamton, N.Y., a corporation of New York

Filed Aug. 23, 1966, Ser. No. 574,394
Int. Cl. B21j *15/28*; B25c *5/04, 5/08*
U.S. Cl. 227—2 19 Claims

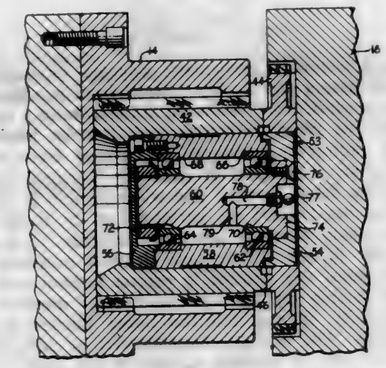


An apparatus for inserting into a board leads of electrical components characterized by a component body portion having a plurality of generally L-shaped leads, said leads being arranged in two rows and extending one row from each of a pair of opposed side surfaces of said body portion, the free ends of said leads of each said row projecting outwardly beyond one body portion surface joining said side surfaces, which comprises a component inserter adapted to be reciprocated from a first position into a component insertion position; means adapted to position one component at a time in alignment with the path of reciprocation of the insertion means when in the first position thereof and to effect relatively outward straightening of the rows of leads with respect to the opposed side surfaces of the component body portion prior to engagement of the component by the insertion means; and means operable to relatively inwardly straighten and align the relatively outwardly straightened leads prior to the insertion of the component leads into a board.

3,442,431
FRICTION WELDING INTERNALLY BORED MEMBERS

Wilmer E. Funk, Roanoke, Gerald B. Koch, East Peoria, and Ralph W. Yocum, Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California

Filed Sept. 1, 1967, Ser. No. 664,970
Int. Cl. B23k *27/00*
U.S. Cl. 228—2 5 Claims

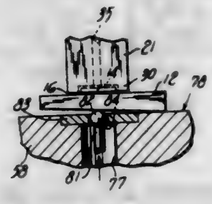


Apparatus for friction welding internally bored workpieces wherein the apparatus is provided with an internal pilot assembly having pilot means adapted to fit inside each internally bored workpiece to prevent radial shifting between said workpieces, said pilot assembly having bearing means to permit relative rotation between said pilot means without radial shifting therebetween.

3,442,432
BONDING A BEAM-LEADED DEVICE TO A SUBSTRATE

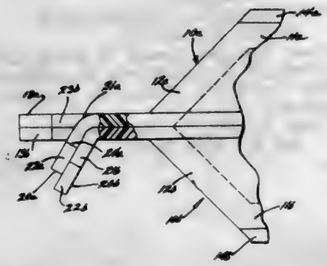
Joseph A. Santangini, Bethlehem, Pa., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed June 15, 1967, Ser. No. 646,325
Int. Cl. B23k *19/00, 37/04*
U.S. Cl. 228—44 8 Claims



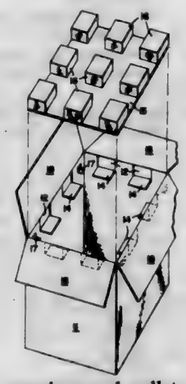
In simultaneously bonding the leads of a beam-leaded device to conductive areas on a substrate, a bonding tool applies pressure and bonding energy to the leads. A movable ball located within a bore formed in a base which initially supports the substrate is raised into engagement with the substrate to lift and pivotally support the substrate above the base surface in equilibrium position where the bonding forces applied to each lead are equal.

3,442,433
FOOD CONTAINER
Crescenzo R. Lombardi, 2055 Leff St., and Fritz O. Lester, 2176 Reneer St., both of Muskegon, Mich. 49441
Filed Aug. 14, 1967, Ser. No. 660,358
Int. Cl. B65d *1/34, 5/64, 43/10*
U.S. Cl. 229—2.5 5 Claims



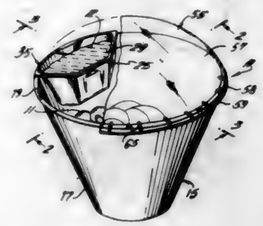
A food container particularly adapted for carry-out pizza restaurants and the like formed from two identical members each of which is shaped in the form of a flanged pie pan. The members are formed from an insulating material, preferably closed-cell polystyrene. Each of the members has a plurality of generally T-shaped latches cut into the flange thereof. The wider portion of the T-shaped latches borders the periphery of the flange and the legs extend generally inwardly therefrom to form a hinge. The flanges of the two identical members are abutted against one another in reverse fashion with the T-shaped latches on the upper and lower member circumferentially aligned and the upper latches pushed downwardly. The flexible characteristics of polystyrene permit the wide or latching portion to flex slightly and pass beneath the flange on the lower member.

3,442,434
CONTAINER AND PALLET
John De Simas, 960 Hillcrest, Millbrae, Calif. 94030
Filed Dec. 7, 1967, Ser. No. 688,918
Int. Cl. B65d *5/56, 25/14, 5/62, 5/58*
U.S. Cl. 229—14 6 Claims



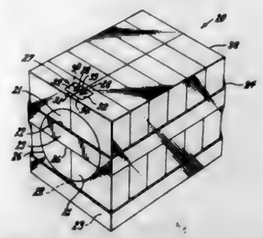
A composite container and pallet, and pallet suitable for custom design are disclosed comprising a cardboard container with cutout portions near the bottom for receiving the tines of a forklift truck. The flaps from the cutout portions provide means for positioning a baseboard on which the packaged goods rest. The baseboard is spaced from the bottom of the container by spacing blocks which bear the weight of the pacakaged goods and which may be made of a flexible material for shock-absorbing packaging.

3,442,435
PACKAGE FOR DISPENSING COMESTIBLES
Rodney E. Ludder, 19 Hamilton Square, Glen Head, N.Y. 11545, and Henry H. Huston, Huntington, N.Y. (179 High St., St. Albans, Vt. 05478)
Filed July 21, 1967, Ser. No. 655,097
Int. Cl. B65d *3/24, 81/22, 13/00*
U.S. Cl. 229—15 29 Claims



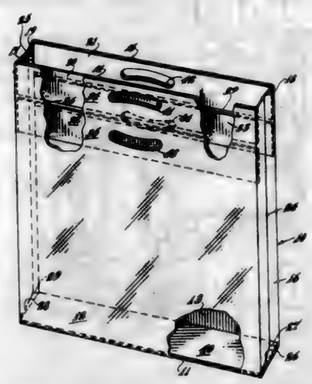
A package for dispensing comestibles comprising a receptacle for containing a first comestible and a condiment well secured to the peripheral lip of the receptacle for containing a second comestible which comestibles are generally consumed by first partially immersing one within the other; and a lid that may be secured over the lip of the receptacle and which is removable without dislodging the condiment well generally contained within the receptacle. Venting means are provided through the lid to permit a flow of air to prevent condensation within the package. The condiment well is also designed and constructed of a configuration that permits nesting and stacking thereof.

3,442,436
PACKAGE CONSTRUCTION MEANS WITH EASY OPEN MEANS THEREFOR
Thomas E. Kirby, Jr., Richmond, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Feb. 10, 1967, Ser. No. 615,116
Int. Cl. B65d *17/00, 5/54, 5/70*
U.S. Cl. 229—51 18 Claims



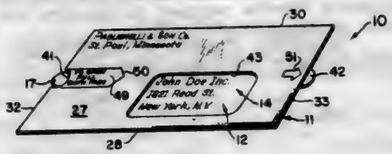
This disclosure relates to a package construction means wherein one or more articles are substantially encased in a heat shrunk film-like member wherein the heat shrunk film-like member protects and holds the article or articles in a predetermined arrangement until the ultimate consumer or the like desires to open the package construction by removing the film-like member with an easy open means formed in the film-like member, the easy open means including a pair of tab means carved in the film-like member and each having a free end and another end interconnected to the film-like material adjacent the other end of the other tab means so that when the free ends of the tab means are pulled relative to the package construction, the tab means cause the film-like member to tear along three tear paths with the middle tear path being defined between the two tab means and the pair of outboard tear paths being respectively disposed on opposite sides of said middle tear path and progressively diverging therefrom.

3,442,437
BAG CONSTRUCTION WITH CLOSURE CARRIER
Charles R. Mann, % Embassy Packaging Corp., 411 Morris Drive, Cherry Hill, N.J. 08034
Filed Feb. 19, 1968, Ser. No. 706,502
Int. Cl. B65d *25/22, 33/08, 33/02*
U.S. Cl. 229—54 4 Claims



This invention is essentially concerned with a bag construction of generally rectangular form having an open top with front and back walls reinforced along the upper edges and foldable together to maintain the top closed while affording full-width bag support and providing a hand carrier for the bag.

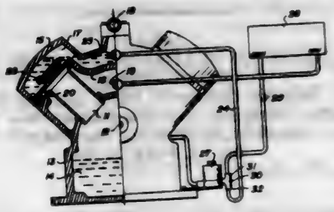
3,442,438
ENVELOPE OPENER
Enrique G. Marban, New York, N.Y. (505 N. Lakeshore Drive, Chicago, Ill. 60611)
Filed May 11, 1967, Ser. No. 702,147
Int. Cl. B65d *27/32, 27/00*; B43n *5/00, 7/00*
U.S. Cl. 229—85 1 Claim



A quick-opening envelope containing a stiff backing member which protrudes at one end from the envelope and serves as a means of tearing it open, the backing member having correspondence papers affixed thereto which are removed automatically from within the envelope when the backing member tears its way out upon being pulled at its exposed end.

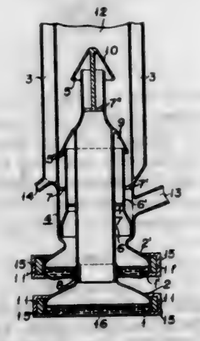
3,442,439
SCAVENGE DEVICE FOR REFRIGERANT COMPRESSOR SYSTEMS
Don C. Derragon, Jr., Pembina, N. Dak., assignor to Motor Coach Industries Inc., Pembina, N. Dak.
Filed June 30, 1967, Ser. No. 650,351
Int. Cl. F04b *49/02, 49/06*; F25b *41/00*
U.S. Cl. 230—24 4 Claims

The invention relates to a refrigerant compressor that is driven during both the unloaded and loaded conditions and which includes a solenoid operated valve in a scavenging conduit which extends between the high pressure cavity of the compressor to the crankcase thereof, said valve



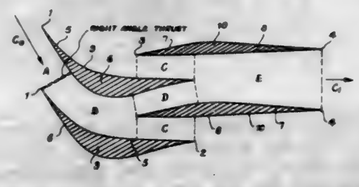
being opened during the unloaded condition and closed during the loaded condition.

3,442,440
DIFFUSION PUMP
Hiroaki Okamoto, Tokyo, and Yoshio Murakami, Yokohama-shi, Japan, assignors to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan
Filed Apr. 21, 1967, Ser. No. 632,821
Claims priority, application Japan, Apr. 28, 1966, 41/26,648
Int. Cl. F04f *9/00*
U.S. Cl. 230—101 3 Claims



A diffusion pump for obtaining extremely stable high vacuum comprising a boiler to hold shallowly pump fluid, casing having input conduit connected to a chamber to be evacuated and output conduit connected to an auxiliary pump, a jet nozzle assembly positioned in the casing and open at the lower end to the boiler, and annular heater positioned around the upper periphery of the boiler.

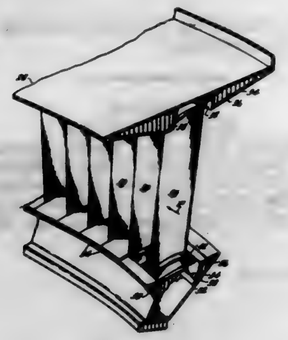
3,442,441
SUPERSONIC CASCADES
Wilhelm Dettmering, 26 Am Chorusberg, 5100 Aachen, Germany
Filed July 20, 1967, Ser. No. 654,837
Claims priority, application Germany, July 21, 1966, D 50,643
Int. Cl. F04d *29/36*; F01d *5/06*
U.S. Cl. 230—132 6 Claims



The gases flowing through a turbine or a compressor are reduced from supersonic to subsonic flow by being passed through a row of shock and deflecting blades, and

then through a row of gas deceleration blades which partially lap the shock and deflecting blades.

3,442,442
MOUNTING OF BLADES IN AN AXIAL FLOW COMPRESSOR
David L. Seiwert, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York
Filed Dec. 2, 1966, Ser. No. 598,657
Int. Cl. F04d *29/34*
U.S. Cl. 230—133 7 Claims



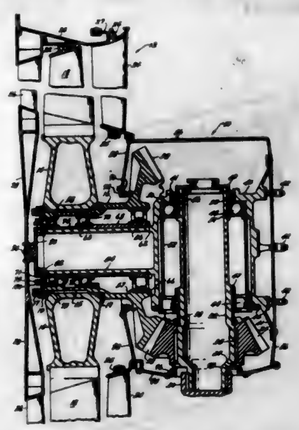
The disclosure shows a compressor comprising a stator assembly, the blades of which are formed of bonded glass fibers. Structural support of the stator is provided by mounting feet respectively receiving the inner and outer ends of the blades. The blades are bonded to the mounting feet and the mounting feet, in turn, are bonded to inner and outer concentric, axially spaced rings.

3,442,443
PRESSURE PUMP WITH GAUGE
Eugene L. Kilbourn, Marshall, Mich., assignor to Progressive Dynamics, Inc., Marshall, Mich.
Filed Dec. 27, 1966, Ser. No. 604,852
Int. Cl. F04b *39/00*; B65d *83/00*; G01m *3/32*
U.S. Cl. 230—172 8 Claims



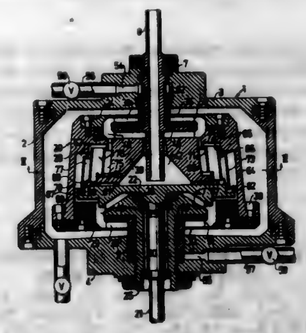
A manually operated pump for pressurizing water systems, or for use in similar applications, wherein the pump handle comprises a gauge, and check valve means are incorporated into the pump permitting a reading of the pressure created even while the pump piston rod is locked in an inactive position.

3,442,444
GEARING ASSEMBLIES
John C. Kievit, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York
Filed Mar. 13, 1967, Ser. No. 622,680
Int. Cl. F04d *25/02*; F16h *1/14*
U.S. Cl. 230—215 5 Claims



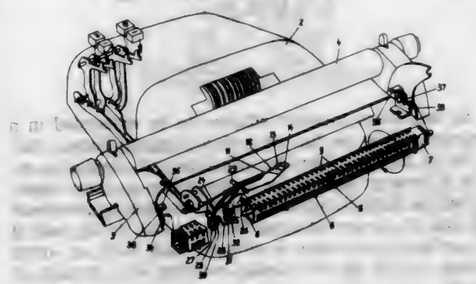
The disclosure illustrates a compact lightweight gearing assembly 10 for use in high speed applications, such as driving a ducted fan 12 for a vertical takeoff and landing aircraft. The gearing assembly 10 comprises an input shaft 32 which has a bevel gear 34 meshing with another bevel gear 38 on a hollow output shaft 16 at right angles to the input shaft 32. The input shaft 32 is journaled in an annular support element 40 and the output shaft is journaled around a support member 54 which forms with the annular element 40 a T-shaped support for the shafts. This arrangement minimizes the axial length of the shafts 16, 32 and enables a lightweight close-coupled mounting of the bevel gears to provide rigid support during high speed rotation.

3,442,445
CENTRIFUGE FOR COMPLETE PHASE SEPARATION OF TWO LIQUIDS
Helge Jan Arnold Rydberg, Molndal, and Hans Reinhardt, Goteborg, Sweden, assignors to Incentive AB, Stockholm, Sweden, a Swedish company
Filed Dec. 13, 1966, Ser. No. 601,526
Claims priority, application Sweden, Dec. 16, 1965, 16,309/65
Int. Cl. B04b *1/12, 11/06*
U.S. Cl. 233—18 10 Claims



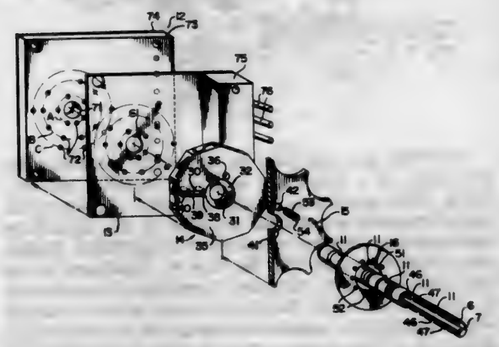
A centrifugal separator, radially subdivided into a plurality of separating chambers, each comprising a plurality of circumferentially extending partition walls forming a radial series of separating departments between themselves and the inner and outer walls of the chamber which communicate with each other by ducts at their tops as well as at their bottoms, baffle means being arranged in the ducts to urge liquid streaming in the duct into the interior of each department, and liquid mixture inlet opens in one intermediate department.

3,442,446
TABULATOR ARRANGEMENT FOR OFFICE MACHINES
Gunter Engelhardt, Gerstetten-Wurttemberg, Germany, assignor to Walther-Buromaschinen G.m.b.H., Gerstetten-Wurttemberg, Germany, a limited-liability company of Germany
Filed Oct. 19, 1966, Ser. No. 587,740
Claims priority, application Germany, Oct. 20, 1965, W 40,142
Int. Cl. G06c *29/00*
U.S. Cl. 235—60.5 9 Claims



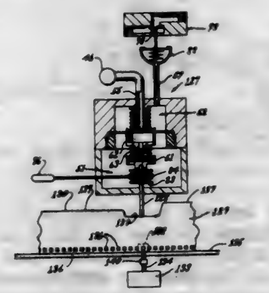
The movable carriage of an accounting machine is provided with a hollow control bar having a square cross-section with a pair of rows of transverse slots in each of the bar side walls. Control tabs are inserted in these slots with portions of the tabs protruding above the control bar and portions of the control tabs being within the control bar. A shaft passes through the hollow control bar along the length thereof and is provided in its peripheral surface with notches which engage the portions of the control tabs in the control bar to lock the tabs in position. The shaft may be rotated with respect to the bar to unlock the control tabs to permit their removal.

3,442,447
FLUID SIGNAL CODE CONVERTER
Edward D. Proctor, Riverdale, Md., assignor to Bowles Engineering Corporation, Silver Spring, Md., a corporation of Maryland
Filed Mar. 6, 1967, Ser. No. 620,818
Int. Cl. G06d *7/00*; G06m *1/12*
U.S. Cl. 235—201 21 Claims



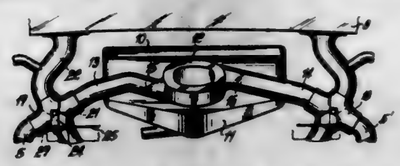
A device for providing coded fluid signals in response to selectable settings of members which settings are calibrated in a code that differs from the signal code. The members are rotatably mounted on a shaft and are adapted to conduct pressurized fluid to different combinations of inlet ports of respective fluid coding circuits as a function of the position of the members relative to the coding circuits. The coding circuits provide coded fluid output signals which are a function of the receipt of fluid at the various inlet ports and thus serve as a coded representation of the positions of the members.

3,442,448
COOKING AND APPARATUS AND METHODS
William K. Body, Whittier, Russell J. Locascio and Harold W. Rice, Fullerton, and Douglas R. Scott, Santa Ana, Calif., assignors to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Original application Feb. 12, 1965, Ser. No. 432,228, now Patent No. 3,384,071. Divided and this application Dec. 18, 1967, Ser. No. 714,139
Int. Cl. F24c *3/12*; F23n *1/00*
U.S. Cl. 236—46 4 Claims



This disclosure relates to pneumatic control means utilized to control the operation of a cooking apparatus, whether the cooking apparatus has an oven, or a range type burner, or both, such pneumatic control means comprising pneumatic actuators for controlling the flow of fuel to the burner means as well as for latching the oven door means in its closed position for oven cleaning operations, adjusting the burner means to various positions thereof and automatically controlling a cooking operation thereof, such features being utilized singly or in any combination thereof.

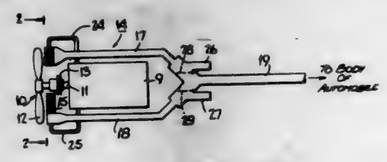
3,442,449
INSTALLATION FOR HEATING AND VENTILATING PASSENGER SPACES OF MOTOR VEHICLES
Georg Urbanczik, Renningen, and Wolfgang Rau, Ditzingen, Germany, assignors to Firma Dr. Ing. h.c. F. Porsche, K.G., Stuttgart-Zuffenhausen, Germany
Filed May 9, 1967, Ser. No. 637,282
Claims priority, application Germany, June 29, 1966, P 27,543
Int. Cl. B60h *1/02*
U.S. Cl. 237—12.3 15 Claims



An installation for heating and ventilating the passenger spaces of motor vehicles having a rear engine which supply heated air into the passenger space through ducts, and a ventilating system arranged within the area of the front end wall of the passenger space which is equipped with a fan for supplying fresh air, the lines conducting the heated and fresh air streams being connected with an

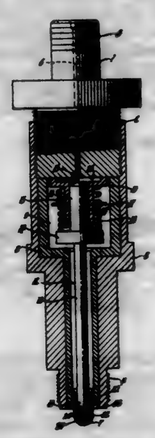
air distributor housing which is provided with one discharge aperture terminating directly in the passenger space for each of the warm air line and the fresh air line connected with the respective housing and with a common mixing line as well as with valves for each of the heated air line and the fresh air line for deflecting the heated air stream as well as the fresh air stream either directly into the passenger space through a respective discharge aperture or into the mixing line. The discharge apertures of the lines conducting the cold and warm air streams out of the air distributor housing either directly into the passenger space or into the mixing line are arranged parallelly and unidirectionally.

3,442,450
MOTOR VEHICLE HEATER ASSEMBLY
John D. Milligan, 650 Prospect Ave., Little Silver, N.J. 07739
Filed June 15, 1967, Ser. No. 646,300
Int. Cl. B60h *1/06*
U.S. Cl. 237—12.3 9 Claims



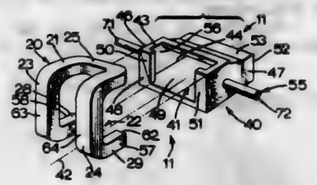
The heater assembly is mounted in back of the fan blade and radiator so that the fan blade pushes air through the radiator into manifolds which conduct the flows of air to the passenger compartment. The air is heated upon passing through the radiator and is regulated as to flow by a valve within the manifold and as to temperature by being mixed with cool air passed into the manifold by the fan blade from below the radiator.

3,442,451
DUAL STAGE ACCUMULATOR TYPE FUEL INJECTOR
Stephen F. De Nagel, Roseville, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 14, 1967, Ser. No. 645,961
Int. Cl. F02m *41/16, 47/02;* B05b *1/32*
U.S. Cl. 239—96 5 Claims



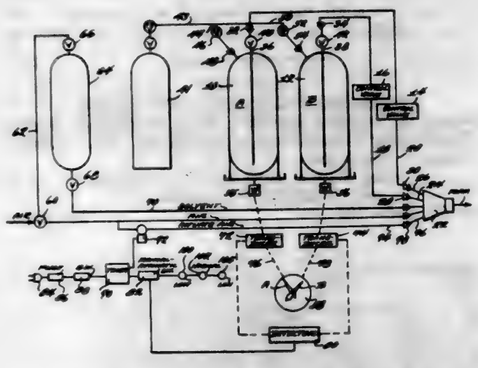
A dual stage accumulator type fuel injector having a needle valve biased closed by two coil springs, one relatively weaker than the other, acting in tandem, the closing end of the valve having stepped-diameters sequentially controlling separate outlets for the fuel.

3,442,452
RAIL FASTENING MEANS FOR USE IN RAILWAY TRACKS
Johan L. Harmsen, 68 Hawkridge Ave., Markham, Ontario, Canada
Filed Sept. 25, 1967, Ser. No. 670,164
Int. Cl. E01b *9/38, 13/00, 9/00*
U.S. Cl. 238—265 5 Claims



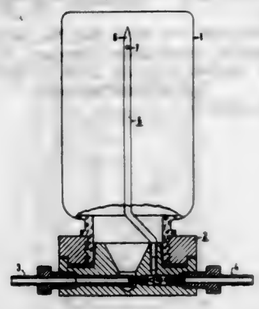
An anchorage member adapted to be embedded in a concrete railway tie for use with a clamp to fasten a rail to the tie having a box-like structure and adapted to receive a lower portion of the clamp within a central recess so that the clamp is located against any turning movement and against movement away from the rail. A top wall of the anchorage member is adapted flush with an upper surface of the tie for easier handling and storage of the tie.

3,442,453
DISPENSING UNIT
Ben Whitehouse, Jr., 4240 Whitfield Ave., Fort Worth, Tex. 76109
Filed Apr. 30, 1965, Ser. No. 452,171
Int. Cl. B67d *5/08;* A62c *13/60;* B05b *7/06*
U.S. Cl. 239—71 9 Claims



A method and apparatus for accurately measuring the ingredients of a foamed or expanded material and supplying those ingredients to an applicator. A pressurized supply reservoir is provided for each of the ingredients and these reservoirs are connected to an applicator. Means are provided for metering the flow of ingredients to the applicator and for continuously monitoring the inventory of the reservoirs. An electrical system is also arranged with respect to the monitoring means for selectively supplying air to the applicator so that the manufacture of foam is controlled in response to the sensed inventory of the reservoirs.

3,442,454
POWER SUCTION DEVICE
Herbert Stenger, Schwarzenbruck, Manfred Strossner, Nuremberg, and Friedrich Wendler, Erlangen, Germany, assignors to Siemens Aktiengesellschaft, Erlangen, Germany
Filed Apr. 15, 1966, Ser. No. 542,897
Claims priority, application Germany, Apr. 17, 1965, S 96,600
Int. Cl. B05b *7/30*
U.S. Cl. 239—85 7 Claims

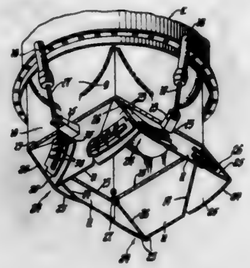


Device for extracting powder by jet-pump action from a receptacle includes a nozzle head member having a base ring and an annular rim screwed thereto. The annular rim has a thread for securing the nozzle head member to a correspondingly threaded receptacle. The base ring has an axial funnel-shaped spout communicating with the receptacle interior. A jet nozzle and a discharge tube are respectively disposed in radially extending inlet and outlet gas channels formed in the base ring and communicating with the spout opening.

ERRATUM

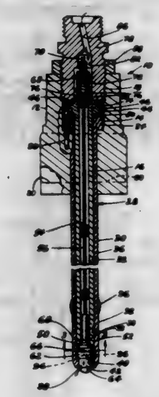
For Class 239—96 see:
Patent No. 3,442,451

3,442,455
JET DEFLECTING NOZZLE
Charles H. Smale, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 7, 1967, Ser. No. 651,906
Int. Cl. B64c *15/06;* B64b *1/36;* F02k *1/24*
U.S. Cl. 239—265.39 4 Claims



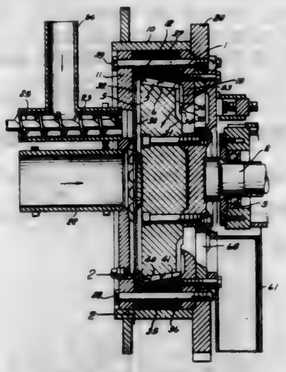
A vectoring jet nozzle, for a lift jet engine or the like, having a square outlet on the jet pipe with a trapezoidal main leaf hinged at each side of the jet pipe. Actuating means can swing these leaves either inwardly or outwardly about the hinge axis. The sides of the leaves at the corners of the nozzle are connected by corner leaves extending from the main leaf, each corner leaf being hinged to the corner leaf extending from the other main leaf at the same corner of the nozzle.

3,442,456
INJECTION NOZZLE
Lionel D. Thompson, Bloomfield Hills, and Edward J. Rozniecki, St. Clair Shores, Mich., assignors to Holley Carburetor Company, Warren, Mich., a corporation of Michigan
Filed Nov. 1, 1966, Ser. No. 591,325
Int. Cl. B05b *1/30;* F02m *61/16*
U.S. Cl. 239—533 6 Claims



An injection nozzle has a valve body housing a valve head and a valve seat with a valve retainer such as a metal rod firmly holding the valve head on its seat; means are provided for supplying a liquid (such as fuel) to the valve head under a pressure sufficiently high to open the valve head from its seat by elongating the retainer rod but well within the limit of elasticity of the rod.

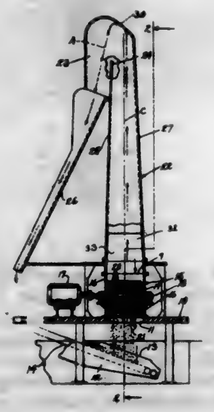
3,442,457
APPARATUS FOR REDUCING PARTICLE SIZE
Edward H. Campston, Jr., 11 Bacon Court, Bronxville, N.Y. 10708
Filed July 30, 1965, Ser. No. 476,102
Int. Cl. B02c *4/00*
U.S. Cl. 241—47 49 Claims



A device for reducing the particle size of cellulose fibers includes a rotor and stator with irregular confronting surfaces forming a narrow particle reducing passageway. Gas is formed through the passageway to carry particles from the input to the output end of the passageway, and at least a portion of the passageway is arranged to proceed radially inward so as to be "uphill" relative to centrifugal force. This causes larger particles of greater mass to be retarded or thrown back in the passageway by centrifugal force until they are sufficiently reduced to be carried through the passageway by the opposing gas

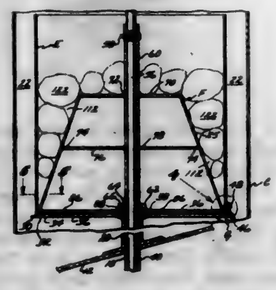
stream. The reducing surfaces are preferably formed by ridges and grooves, and the rotor and stator are preferably built up in laminated form. The reducing passageway preferably extends along a radial face of the rotor at its input end, across the circumferential surface of the rotor, and radially inward along a radial face of the rotor at the output end of the passageway.

3,442,458
GRINDING MILLS
Arnold F. Meyer, Pewaukee, Wis., assignor to The Heil Co., Milwaukee, Wis., a corporation of Wisconsin
Filed Feb. 9, 1967, Ser. No. 615,001
Int. Cl. B42c *19/00, 21/00, 23/00*
U.S. Cl. 241—82 4 Claims



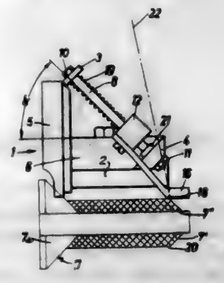
A grinding mill having a chimney projecting upwardly from above a hammer grinder, wherein those opposing walls of the chimney which are in planes transverse to the axis of the mill converge toward one another in an upward direction. Thus material projected into the chimney by the grinder will fall back onto intermediate portions of the mill rather than onto the ends thereof to produce more uniform wear on the hammers. The other two opposing walls of the chimney are diverging in an upward direction to prevent reduction in outlet capacity because of the convergence of the first mentioned walls.

3,442,459
CUTTING, CRUSHING AND SCREENING MECHANISM
James Ward Putt, 1825 E. Spring St., Long Beach, Calif. 90806
Filed July 13, 1966, Ser. No. 564,932
Int. Cl. B02c *13/14, 13/20*
U.S. Cl. 241—85 8 Claims



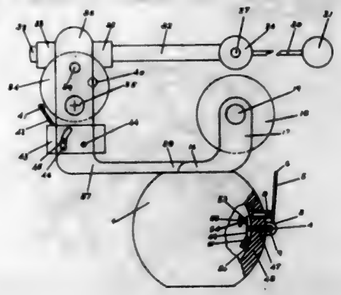
An apparatus for cutting and screening detergent type bulk material into particles of no greater than a predetermined size without substantially increasing the density of said material.

3,442,460
THREAD-GUIDE ASSEMBLY FOR BOBBIN-WINDING MACHINES
Dieter Rosenkranz, Wuppertal-Barmen, Alfred Tiedtke, Wuppertal-Ronsdorf, and Horst Inden, Wuppertal-Barmen, Germany, assignors to Koecke Plutte & Co., Wuppertal-Barmen, Germany, a corporation of Germany
Filed Jan. 16, 1967, Ser. No. 609,482
Claims priority, application Germany, Jan. 19, 1966, P 38,576; July 29, 1966, P 40,085
Int. Cl. B65h *54/02*
U.S. Cl. 242—26.5 12 Claims



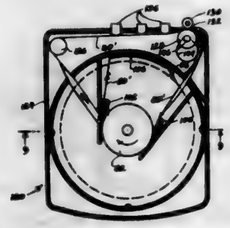
A thread-guiding assembly for a bobbin-winding machine has a reciprocating carriage with a guide rod or sleeve slidably supporting a shoe which contacts the peripheral surface of a coil wound on a bobbin, the guide rod or sleeve being parallel to the nearest generatrix of a conical (or, in a limiting case, flat) face of the bobbin base whereby a thread passing through an orifice on the shoe is wound into a coil with either tapered or flat ends.

3,442,461
CONE WINDING MACHINE FOR SPINNING
Jorge Marti Sola, Calle Cataluna 108, Tarrasa, Barcelona, Spain
Filed Nov. 10, 1965, Ser. No. 511,019
Int. Cl. B65h *63/02*; B65 *63/04*
U.S. Cl. 242—37 4 Claims



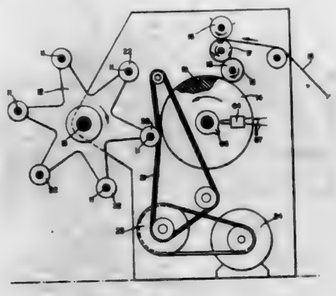
A cone winding machine for spinning has a guide roll provided with a helical groove and mounted upon an electrical motor, the cone to be wound being mounted on a shaft connected with an arm swingable between two positions; in one of these positions the cone rests tangentially upon the guide roll while in the other position the cone is separated from the guide roll. The motor has a casing carrying a swinging crank arm constituting a guide for the thread extending toward the guide roll.

3,442,462
ENDLESS TAPE CARTRIDGE
Howard W. Cole, Jr., Mountain Lakes, N.J., assignor to Torque Industries, Inc., Newark, N.J., a corporation of New Jersey
Application Nov. 21, 1963, Ser. No. 325,301, now Patent No. 3,285,527, dated Nov. 15, 1966, which is a continuation-in-part of application Ser. No. 73,789, Dec. 5, 1960. Divided and this application Sept. 21, 1966, Ser. No. 581,010
Int. Cl. B65h *17/48*
U.S. Cl. 242—55.19 3 Claims



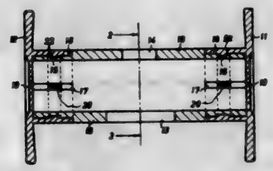
This specification discloses a cartridge for tape, such as sound-recording magnetic tape. The tape is in an endless spiral reel with the tape from the inner convolution of the reel passing directly and freely from the reel to a chamber of the cartridge where the tape can be advanced past a recording and reproducing head. The entire length of the tape is in the cartridge, and in the preferred embodiment there is a second driving means in the cartridge for advancing the tape. This second driving means includes a drum with which the tape has frictional engagement as it travels from the capstan back to the outside of the reel. This makes the capstan control the speed of the other driving means by determining the speed at which tape can come to the friction drum of the second driving means.

3,442,463
WINDER TENSION CONTROL
Edward M. La Pointe, Everett, Wash., assignor to Scott Paper Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Nov. 3, 1965, Ser. No. 506,227
Int. Cl. B65h *75/34*
U.S. Cl. 242—64 8 Claims



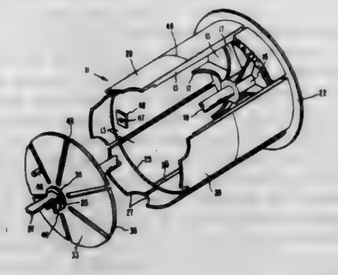
Web winding apparatus is disclosed for winding webs with a predetermined tension profile. A principal feature of the invention disclosed is the modification of the torque transmitting ability of a winder clutch in accordance with a predetermined clutch torque counteracting program during the progress of the wind from start to finish. This feature permits webs to be wound either with constant tension throughout the wind or with any desired tension profile through the wind. Clutch torque counteracting means are disclosed for achieving the above-described feature of the web winding apparatus of the invention, which means are responsive to the progress of a wind on a mandrel and act on the mandrel so as to decreasingly counteract the torque transmitted to the mandrel by the clutch in a programmed manner during the web wind. In one embodiment of the apparatus of the invention, the clutch torque counteracting means disclosed include braking means acting upon the mandrel and program cam means operably connected to the braking means to control application of braking force by the brake means to the mandrel, the cam means being actuated by means responsive to the progress of a web wind.

3,442,464
FILM SPOOL
Jozef Frans Broos, Hove, Belgium, assignor to Gevaert-Agfa N.V., Mortsel, Belgium, a Belgian company
Filed Feb. 17, 1967, Ser. No. 616,860
Claims priority, application Great Britain, Feb. 17, 1966, 7,094/66
Int. Cl. B65h *75/18*
U.S. Cl. 242—71.8 3 Claims



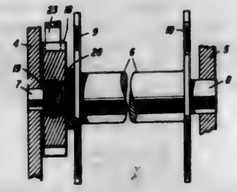
A film spool having a barrel and two flanges, each flange carrying a sleeve telescoped on corresponding sleeves on the barrel. A bead and recess on the corresponding sleeves engage each other. Slots on the barrel sleeve allow said sleeve to yield during assembly and keying with a projection on the flange sleeve.

3,442,465
EXPANDING PAPER TAPE TAKE-UP SPOOL
Richard E. Lagergren, Rochester, Minn., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Jan. 10, 1968, Ser. No. 696,909
Int. Cl. B65h *75/18*
U.S. Cl. 242—72 7 Claims



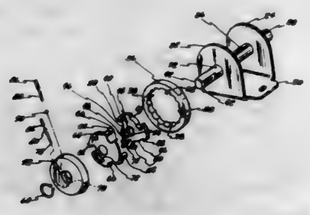
An expanding spool having cantilevered members extending to a convex disc. Pressure against the disc by a lever having camming surfaces causes expansion of the disc and radial outer displacement of the cantilevered members.

3,442,466
TAKE-UP REELING DEVICE FOR SAFETY BELTS AND/OR SIMILAR APPLIANCES
Walter Fritsche, Augusburg, Germany, asignor to Firma Tenka-Automaten, Kirschner & Co., Dusseldorf, Germany
Filed Apr. 8, 1966, Ser. No. 553,596
Int. Cl. B65h *75/48*; A62b *1/08*
U.S. Cl. 242—107.4 4 Claims



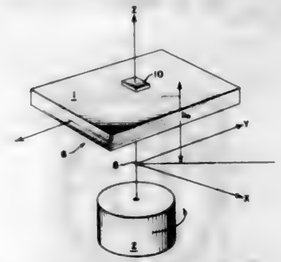
A reel for winding up and storing a safety or seat belt. The belt may be pulled off the reel smoothly against the action of a rewind spring unless the belt is jerked suddenly, as in a collision. When the belt is jerked, a pawl which is attached to the reel housing engages a notched ratchet attached to the reel to stop the belt from unwinding. A disc of soft malleable material is crushed between the reel and the reel housing to absorb the shock when the reel suddenly locks.

3,442,467
INERTIA RETRACTING DEVICE WITH BALL LOCKING ELEMENTS
Robert W. Stoffel, Ferndale, Mich, assignor to Jim Robbins Seat Belt Company, Royal Oak, Mich.,
Filed July 31, 1967, Ser. No. 657,189
Int. Cl. B65h *75/48*
U.S. Cl. 242—107.4 15 Claims



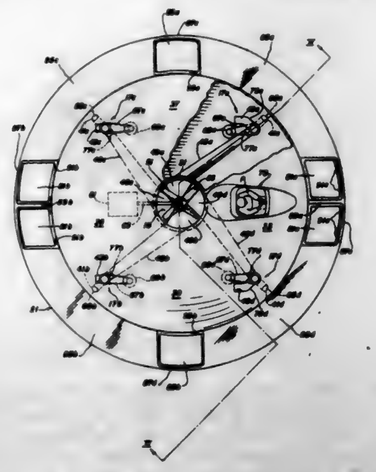
A rotary seat belt retractor having locking means responsive to the seat belt being unwound from the wind-up reel at a predetermined acceleration to lock the reel against rotation in the unwind direction, the reel normally being freely rotatable when the pull out forces acting on the belt produce an unwinding acceleration less than the predetermined acceleration. The locking means includes a cam wheel carried by the reel with peripheral notches registering with a fixed circular ratchet. A locking ball disposed in each notch is radially movable between a locked position where it is trapped between the outer end of the notch and the ratchet and a release position where it is seated at the inner end of the notch and separated from the ratchet. An inertia wheel rotatably mounted on the reel is coupled to the cam wheel and normally rotates in unison with the cam wheel. In response to an excessive unwinding acceleration of the reel, the inertia wheel rotates relative to the cam wheel and causes the displacement of the balls from their release to their locked position.

3,442,468
NUTATION DAMPED STABILIZED DEVICE
Anthony J. Iorillo, Santa Monica, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Continuation-in-part of application Ser. No. 567,487, July 25, 1966. This application Nov. 14, 1966, Ser. No. 594,021
Int. Cl. B64d *45/04, 45/08*; F42c *13/00*
U.S. Cl. 244—1 23 Claims



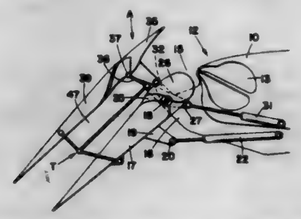
A stabilized device comprising at least a pair of relatively rotatable coupled bodies. One of the bodies is a sensibly non-rigid rotor and the other is a despun platform. The ratio of the spin moment of inertia of the rotor with respect to the moment of inertia of the bodies about any other axis is less than unity. The rotor supports elements to render it non-rigid such as nozzles to control precession or velocity, liquid containing tanks, instruments, motors, etc. The despun body supports elements such as cameras, antennas, sensors, flexible elements, weights, etc. Nutational stability of the entire configuration is achieved by making the despun body nonrigid so that the despun body opposes nutation by dissipating energy, e.g., by coupling a passive energy dissipating damper such as a dashpot or movable mass to the despun body or by control of a despun body such as an asymmetrically disposed or configured despun body and/or dampers associated with the despun body.

3,442,469
FLYING SAUCER
Troy B. Davis, Memphis, Tenn., assignor of fifty percent to Harold B. Davis, Memphis, Tenn.
Filed Feb. 9, 1968, Ser. No. 704,475
Int. Cl. B64c *29/00*
U.S. Cl. 244—23 9 Claims



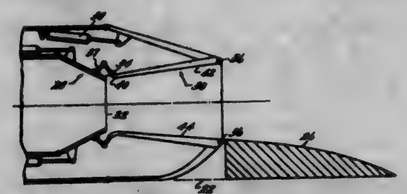
A disk-shaped vertical take-off and landing aircraft having a centrally arranged fan chamber, a plurality of radially arranged trunk ducts for conducting pressured air outwardly toward the circular periphery of the aircraft, and includes at the outer end of each trunk duct a pair of vertically spaced thrust nozzles; one nozzle being a lift nozzle for projecting air downwardly, the other nozzle being a forward thrust nozzle for projecting air rearwardly and for propelling the aircraft forwardly in flight. The aircraft includes valve means for directing the air through either the lift thrust nozzles or the forward thrust nozzles or simultaneously through both nozzles. The aircraft also includes thin flat annular plane means arranged about the circular periphery of the body of the craft for stabilizing and controlling the craft in rapid forward flight.

3,442,470
AUGMENTOR WING STRUCTURE FOR AIRCRAFT
Joseph Edward Farbridge, Kettleby, Ontario, Donald Charles Whittley, Islington, Ontario, and Edward Howard Smith, Kleinburg, Ontario, Canada, assignors to The De Havilland Aircraft of Canada, Limited
Filed Apr. 3, 1967, Ser. No. 627,752
Int. Cl. B64c *3/38, 9/00*
U.S. Cl. 244—42 6 Claims



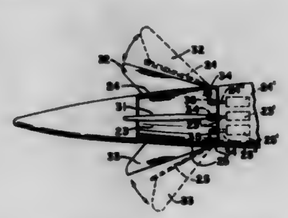
This specification discloses augmentor wing flap mechanism comprising: an aircraft wing having a nozzle duct in its trailing edge; one or more supporting tabs extending rearwardly beyond the exhaust slot of the nozzle duct; a lower augmentor flap pivotally mounted on said tabs; a bell crank pivotally mounted on the tabs coaxially with the mounting of said flap; a hydraulic jack on the wing having a piston connected to an arm of the bell crank; a forward upper augmentor flap section having a depending bracket connected to the other arm of the bell crank; a link between said upper flap section and the tabs; a second link extending from said tab between said lower flap and an upper rear flap section, a toggle connecting said flaps; a second jack on the wing having a piston connected to the lower flap; and a spoiler flap located at an appropriate place on said mechanism.

3,442,471
NOZZLE STRUCTURE
Lee J. Fischer, deceased, late of Marblehead, Mass., by Helen M. Fischer, executrix, Marblehead, Mass., and Edward R. Becker, John T. Kutney, and Donald P. McHugh, Cincinnati, Ohio, assignors to General Electric Company, a corporation of New York
Filed Dec. 27, 1966, Ser. No. 607,131
Int. Cl. B64d *29/04, 33/04*; B64c *15/08*
U.S. Cl. 244—53 8 Claims



The invention relates to a jet engine nozzle structure arrangement where an unsymmetrically variable nozzle is used in conjunction with a fixed fairing on the fuselage downstream of the nozzle so that part of the nozzle away from the fuselage is varied and part adjacent the fuselage is fixed to provide a smooth continuous surface for the jet and reduce the base drag on the aircraft.

3,442,472
ELEVATOR AND RUDDER CONTROL APPARATUS
Ben F. Kalina, Bowman, N. Dak. 58623
Filed Mar. 13, 1967, Ser. No. 622,575
Int. Cl. B64c *9/00*
U.S. Cl. 244—87 3 Claims



The invention comprises an elevator and rudder control device for aircraft comprising a top and bottom panel and opposing side panels, said panels being mounted in 90 degree relation to one another about the tail of an aircraft, said panels being pivotally mounted to said fuselage, and when closed conforming at least generally to the contour of the aircraft and adapted to be individually opened about their pivotal mounting to change the direction of flight of an aircraft with stabilizing fins mounted to the rear of the fuselage.

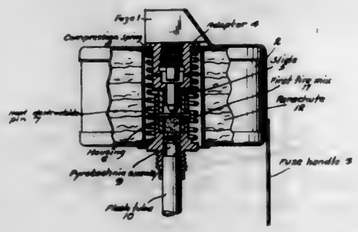
3,442,473
CATAPULT-ASSISTED TRACTOR ROCKET ESCAPE SYSTEM
John C. Rivedal, Aurora, and Gordon A. Valentine, Denver, Colo., assignors to Stanley Aviation Corporation, Denver, Colo., a corporation of New York
Filed Oct. 23, 1965, Ser. No. 502,890
Int. Cl. B64d *25/10*; F41f *3/06*; F02k *9/04*
U.S. Cl. 244—122 28 Claims



A catapult-assisted extraction apparatus for removing a seated occupant from a vehicle and comprising a catapult connected to the occupant's seat in the vehicle and an extraction rocket secured by a tow line to the occupant or to the seat. The catapult is actuated to drive the occupant's seat to a point of seperation from the vehicle, and the tractor rocket is launched from a stored position in the vehicle at a time so correlated with the catapulted movement of the seat that it is at the end of its tether and firing when the catapult has completed its stroke to there-

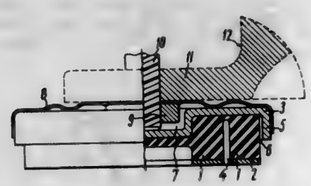
by pull the catapulted seat or the occupant away from the vehicle.

3,442,474
PYROTECHNIC/MECHANICAL RELEASE DEVICE
Barry E. Miller, Baltimore, and John E. Foster, Timonium, Md., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Sept. 1, 1967, Ser. No. 665,694
Int. Cl. B64d *25/10*
U.S. Cl. 244—147 **2 Claims**



The safety pin and handle 3 of fuze 1 are pulled to ignite first-fire mix 11 after a slight delay. This ignites heat-destructible shear pin 7 and pyrotechnic assembly 9. When the shear pin is consumed, pre-loaded spring 8 releases the parachute 12 from pack 2. The ignited pyrotechnic train ignites a smoke grenade through flash tube 10.

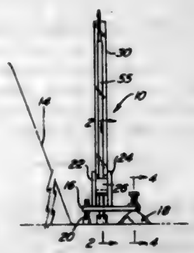
3,442,475
RESILIENT ANTI-VIBRATION SUPPORT
Evgeny Izrailevich Rivin, 11 Porkovaya ulitsa 44, korpus 4, kv. 11, Moscow, U.S.S.R.
Filed Dec. 6, 1965, Ser. No. 511,687
Int. Cl. F16m *1/00;* **F16f** *15/04*
U.S. Cl., 248—24 **6 Claims**



A resilient anti-vibration support in which a damping element of an elastic material is disposed between a base and a cover and is attached thereto. The damping element is provided with grooves and a gap is formed between the damping element and a rim of the cover, the grooves and gap and their positions being so dimensioned and arranged that they successively close due to transverse deformation of the damping element under the action of compression load as the load increases.

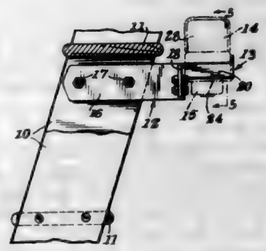
3,442,476
ANTENNA GUARD
Donald D. Trimble, Abington, Pa., assignor to Sherman Car Wash Equipment Company, Palmyra, N.J., a corporation of New Jersey
Filed July 29, 1966, Ser. No. 568,956
Int. Cl. H01q *1/18*
U.S. Cl. 248—43 **8 Claims**

An antenna guard comprising a hollow tube supported on a base for telescopically fitting over the antenna of a vehicle, a suction cup fixed to the base for attaching the same to the vehicle, and a stabilizer also fixed to the base for opposing bending forces applied to the guard;



the guard being pivotable on the base and a valve fixed in said suction cup for releasing the same; the guard being used to protect vehicle antennas by being processed through washing equipment.

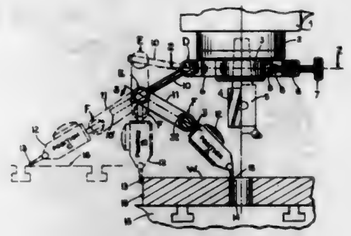
3,442,477
SOLDERING IRON CAGE HOLDER
Jim C. Garrett, Long Beach, and Robert H. Johnson, Marina Del Rey, Calif. (both of 3300 E. Spring St., Long Beach, Calif. 90806)
Filed June 10, 1968, Ser. No. 735,644
Int. Cl. B23k *37/00*
U.S. Cl. 248—210 **5 Claims**



A holder comprising a bracket adapted for mounting on one side rail of a ladder, and a holder member connected to the bracket, a cage for housing a soldering iron being adapted to be connected to said bracket to support the same in a position handy to a person using the ladder and clear of the steps thereof. The cage holder, alternatively, may be mounted directly on the outer face of such a ladder side rail.

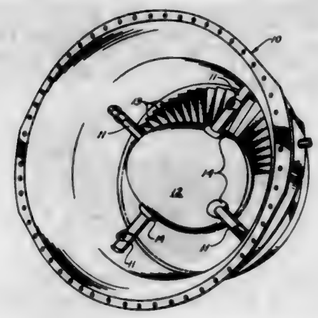
3,442,478
UNIVERSALLY ADJUSTABLE DIAL INDICATOR HOLDER
Nicolas Parapetti, 615, N. 1st St., Rockford, Ill. 61104
Filed June 20, 1967, Ser. No. 647,432
Int. Cl. A47f *5/00;* **A47h** *1/10*
U.S. Cl. 248—284 **14 Claims**

This universally adjustable dial indicator holder comprises a C-clamp easily applicable from either side to a spindle on a vertical milling, boring, or grinding machine without disturbing the tooling on the spindle at given setting thereof, the clamp carrying on one side thereof a first swivel bolt joint with respect to which a rod is extensibly or rotatably adjustably clamped, the rod having swivelled on its outer end a second swivel bolt on which one end of a link is swivelled, the link carrying on its other end a third swivel bolt adjustably supporting a dial indicator. The latter mounting may be of a form utilizing a dovetail sliding connection for endwise ad-



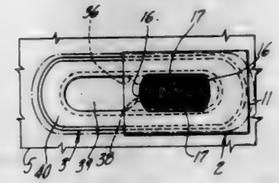
justability of the dial test indicator relative to the swivel. Each of the three swivel bolts has a manually adjustable nut thereon for tightening a spring tensioned friction joint, whereby the articulated assembly is adapted for holding the dial indicator reliably in practically any position of adjustment.

3,442,479
MOUNTING MEANS
Burton Barnett, Los Alamitos, George M. Moisson, Jr., Palos Verdes, and Robert J. Pietka, Placentia, Calif., assignors to North American Rockwell Corporation
Filed Jan. 24, 1968, Ser. No. 700,179
Int. Cl. F16f *15/04;* **F16m** *1/02*
U.S. Cl. 248—358 **7 Claims**



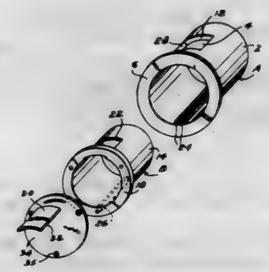
A ceramic central diffuser for a jet engine exhaust is mounted on four metal tubes extending between the diffuser and opposite walls of the jet engine. A resilient mount is provided between each of the tubes and the ceramic diffuser for accommodating thermal expansion differences and minimizing vibration transfer. Each of the tubes extends through a wall of the hollow diffuser and has a pair of ring-like retainers secured thereto on each side of the aperture through the diffuser wall. Each of the ring-like retainers has an internally rebated shoulder mating with a sliding sleeve of substantially the same size as the aperture. A layer of stainless steel felt between the sliding sleeve and the tube resiliently accommodates thermal expansion differences and provides a rigid mount for the diffuser with minimized vibration transfer. The sleeve provides a locus for sliding motion and also affords protection for the felt from surrounding gases.

3,442,480
CONTAINER TIE-DOWN APPARATUS
Alfonso T. Gaglione, Twinsburg, Ohio, Harry N. Marvin, Larchmont, N.Y., and David J. Wyrough, Roxboro, N.C., assignors to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Mar. 11, 1966, Ser. No. 533,638
Int. Cl. F16b *17/00*
U.S. Cl. 248—361 **2 Claims**



An insert adapted for attachment to the exposed upwardly facing surface of a support and an achor fixture removably coupled thereto for securing a container in non-shifting relation relative to the support.

3,442,481
APPARATUS FOR OBTAINING TEST CORES
Joseph R. Di Stasio, 710 Shore Road, Spring Lake Heights, N.J. 07762
Filed Feb. 8, 1967, Ser. No. 614,730
Int. Cl. G01n *1/20;* **G01m** *19/00*
U.S. Cl. 249—117 **20 Claims**

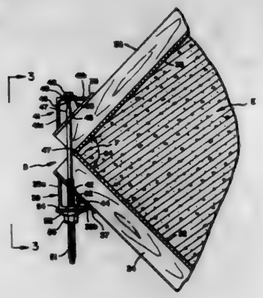


Obtaining test cores set in situ from concrete walls or the like by using inner and outer members having registering openings, thereby to cause the concrete to enter the inner member, after which the opening in the inner member is closed and the concrete is permitted to set. Thereafter the inner member is removed from the outer member, carrying with it a concrete mass which constitutes a test core.

3,442,482
FORM CLAMP
Joseph G. Preblich, Santa Rosa, Calif., assignor to Olsen Construction Co., Santa Rosa, Calif.
Filed Dec. 3, 1965, Ser. No. 511,550
Int. Cl. E04g *17/02;* **B28b** *7/26*
U.S. Cl. 249—219 **2 Claims**

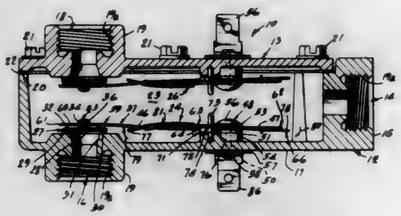
A mold support corner clamp is disclosed comprising a pair of plates adapted to bear flatly against the outer two surfaces of a pair of workpieces disposed at an angle to each other, a back plate secured to each of said plates at an angle to align the back plates substantially parallel to each other when the plates are positioned for bearing con-

tact against the outer two surfaces of said workpieces, and removably adjustable compression means mounted and



bearing against the back plates for compressing the workpieces.

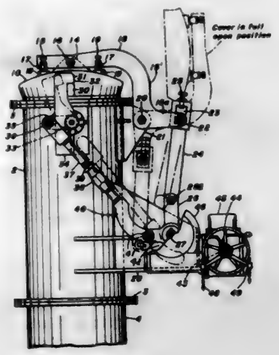
3,442,483
FLUID FLOW CONTROL VALVE
Samuel H. Schwartz, Deerfield, Ill., assignor to The Dole Valve Company, Morton Grove, Ill., a corporation of Illinois
Filed Dec. 22, 1966, Ser. No. 603,984
Int. Cl. F16k *31/02, 1/32*
U.S. Cl. 251—11 **13 Claims**



A fluid flow control valve having a valve member movable between open and closed positions in response to the energization of an electric heater mounted on a flexible member comprising a pair of flexible bi-metal elements situated in the flow path of the fluid and subjected to the temperature of the fluid. The heater is so arranged on the flexible arm so as to heat only one of the bi-metal elements, and the high and low expansion sides of the two bi-metal elements are in mutually inverted relation whereby only the energization and deenergization of the heater effectuates movement of the valve member, and not variations in the temperature of the fluid.

3,442,484
BLAST FURNACE BACKDRAFT VALVE
Hugh B. Carr, McMurray, and Elmer W. Turocy, Bridgeville, Pa., assignors to S. P. Kinney Engineers, Inc., Carnegie, Pa., a corporation of Pennsylvania
Filed Aug. 29, 1966, Ser. No. 575,862
Int. Cl. F16k *31/44, 1/20*
U.S. Cl. 251—98 **4 Claims**

A backdraft valve is disclosed which is adapted to be used in a system where there is a pressure against the valve when it is closed. The valve includes a valve body having a valve seat ring at the top thereof and a cap-like valve member adapted to seat on the seat ring when the valve is closed. A lever is pivotally secured to the valve body, and the valve member is hung from the free end of the lever. Latch means are provided for holding the valve member seated on the seating ring and a common operating mechanism is provided to first release the latch means when it is desired to open the valve and then rock



the lever to lift the valve member off the seat and move it to a position at one side of the valve body, and when it is desired to close the valve to first move the valve member to seating position and then move the latch means into latching engagement with the valve member.

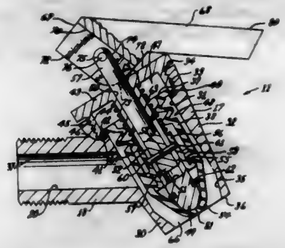
3,442,485
ELECTRO-HYDRAULIC CONTROL FOR MACHINE TOOLS
Rollin A. Reynolds, Palos Verdes, Calif., assignor to Dyna Systems, Inc., Torrance, Calif., a corporation of California
Original application Mar. 19, 1963, Ser. No. 266,423, now Patent No. 3,247,912, dated Apr. 26, 1966. Divided and this application Oct. 22, 1965, Ser. No. 528,661
Int. Cl. F16k *3/34, 31/04;* **F15b** *11/02*
U.S. Cl. 251—129 **13 Claims**



An electro-hydraulic valve control device having a valve body with a fluid flow passage connecting to an inlet at one end and a side outlet, a valve pin being axially movable in the passage between open and closed positions to control flow between the inlet and outlet, this valve pin being connected to the armature of a solenoid actuator, and springs being provided at one end of the armature to support the mass of the armature and connected valve pin in a balanced closed position and form a tuned structure which will vibrate at the frequency of an energizing current for the solenoid coil, and which will be moved to control the valve position depending on the increase and decrease of the energizing current. The valve pin has an exposed area operative initially, when subjected to an applied inlet fluid pressure, to move the valve to an open position.

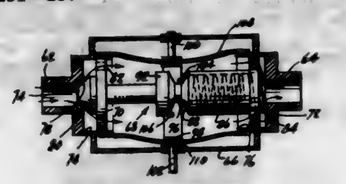
In one construction, another area is provided which is subjected to outlet fluid pressure and operates to move the valve pin to closed position, when a back pressure builds up at the outlet.

3,442,486
SPIGOT CONSTRUCTION FOR A LIQUID DISPENSING CONTAINER OR THE LIKE
Vincent J. Serio, Jr., Henrico County, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Aug. 11, 1966, Ser. No. 571,757
Int. Cl. F16k *7/00*
U.S. Cl. 251—155 **23 Claims**



This disclosure relates to a dripless spigot construction wherein the flow passage through a spigot body terminates at an outlet port that interrupts a flat end surface of the spigot body, the spigot construction carrying a stretchable member that opens and closes the outlet port for dispensing purposes with the stretchable member being so constructed and arranged that the same has a portion thereof for closing said outlet port and being coplanar with the flat end surface of the spigot body across the entire outlet port to provide the dripless feature for said spigot construction.

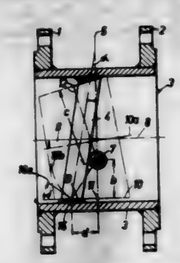
3,442,487
VALVE WITH ISOLATED VALVE ACTUATING MECHANISM
Robert S. Blackburn, Huntington Beach, Calif., assignor, by mesne assignments, to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland
Filed Oct. 24, 1965, Ser. No. 504,843
Int. Cl. F16k *31/44, 1/32*
U.S. Cl. 251—257 **6 Claims**



A valve actuating mechanism isolated from the valve fluid flow chamber that is controlled by the valve.

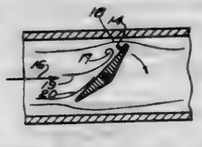
3,442,488
VALVE
Karl Adams, Im Pastoratsbusch 102, Bochum-Stiepel, Germany
Filed Mar. 8, 1966, Ser. No. 532,769
Claims priority, application Germany, Mar. 23, 1968, A 48,710
Int. Cl. F16k *1/226*
U.S. Cl. 251—305 **16 Claims**

A value of the tilt variety having an improved seating surface for the resistance of wear. A tubular housing has disposed therein an annular female valve seat defining a segment of a cone. A flap having its periphery complemental to the seat is mounted by transverse pivots in the housing, the axis of the pivots being eccentric with respect to the housing and seat. That portion of the seat surface located the greatest distance from the pivotal axis is inclined at an acute angle exceeding 3° relative to the tangent defined by the arcuate path of a complemental point on the flap surface as the flap moves immediate the closed position. That portion of the seat 180° opposite the point of greatest distance from the



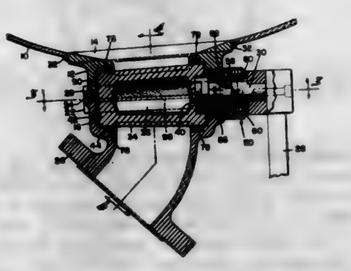
pivot axis defines a second acute angle with a complemental portion of the flap as the flap moves immediate the closest position, this latter acute angle being larger than the first acute angle.

3,442,489
LOW TORQUE BUTTERFLY VALVE
Francis H. Cary, North Scituate, Irving O. Miner, Warwick, and Dezso Szilagyi, Cranston, R.I., assignors to The New York Air Brake Company, a corporation of New Jersey
Filed Mar. 3, 1967, Ser. No. 620,326
Int. Cl. F16k *3/06*
U.S. Cl. 251—305 **2 Claims**



A butterfly valve in which the vane shape is altered to reduce the torque required in operating the valve.

3,442,490
FLUSH VALVE
Russell G. Smith, Cincinnati, Ohio, assignor to Continental Manufacturing Company, Cincinnati, Ohio, a corporation of Ohio
Filed Feb. 10, 1967, Ser. No. 615,151
Int. Cl. F16k *5/02*
U.S. Cl. 251—317 **11 Claims**



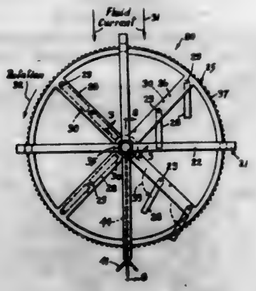
The plug valve for application to a tank wall, is constructed of two body half-sections, one having a mounting flange for insertion into an opening of a tank wall, wherein said flange is fixable by welding or otherwise, and the other half-section being detachably mountable upon said one half-section; both of said half sections being adapted to support a non-rotatable cylindrical packing sleeve in which may be rotated an operating stem which is separate from the valve plug but in driving relation thereto, the sleeve receiving equal support from both half-sections.

3,442,491
NEEDLE TYPE FUEL INJECTION ASSEMBLY
Friedrich Messerschmidt, 10 Edenkobener Strasse, Stuttgart-Weilimdorf, Germany
Filed Jan. 25, 1966, Ser. No. 522,906
Int. Cl. F16k 1/38; F02m 61/10
U.S. Cl. 251—367 10 Claims



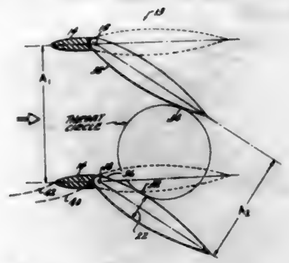
To provide for fuel tight assembly of guide inserts in Diesel engine injection needle valves, the inserts are formed with grooves and the valve body is then cold-flowed by swaging valve body material into the grooves; alternatively, holding bushings may be secured, fluid tight, within the valve by forming the groove in the valve body and deforming the retaining ring to provide a ring or ridge of cold-flowed metal filling the groove, whereby alignment with the bore of the needle valve body is maintained and external retaining elements are avoided.

3,442,492
FLUID CURRENT MOTOR
Evan G. Sullivan, Box 631, Point Comfort, Tex. 77978
Filed July 3, 1967, Ser. No. 650,972
Int. Cl. F03b 13/12
U.S. Cl. 253—10 8 Claims



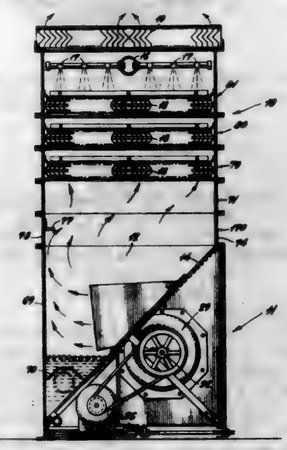
A drum rotatably mounted in a frame, the drum having pivoted panels to be acted upon by a current of fluid such as water or air, for imparting rotation to the drum. Abutment means engageable selectively with opposite sides of the panels facilitate rotation of the drum selectively in opposite directions, the abutment means also being disengageable from the panels by an excessive fluid current to arrest rotation of the drum. A buoyant member with vertical guides may slidably mount the frame so that the drum may be actuated either by water current or by air current, and an annular guard also supported by the buoyant member prevents obstruction of the drum by foreign objects. The drum has a hollow mounting shaft and a plurality of the devices may be stacked so that the shafts thereof provide a continuous passage therethrough.

3,442,493
ARTICULATED AIRFOIL VANES
Leroy H. Smith, Jr., Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York
Filed Oct. 22, 1965, Ser. No. 501,275
Int. Cl. F01d 9/02; B64c 29/00; F04d 29/40
U.S. Cl. 253—78 1 Claim



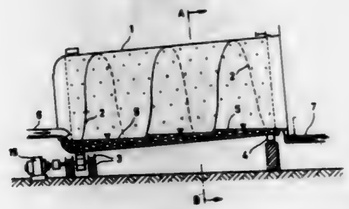
A cascade of articulated vanes selectively directs air flow through a given turn angle. Each vane comprises a fixed upstream portion directed into the direction of air flow and a pivoted portion immediately adjacent the downstream edge of the fixed portion. The adjacent portions are contiguous and smoothly curved for movement of the pivoted portion through a substantial angle. The pivoted portion has a thickness at its upstream end approximating the adjacent thickness of the fixed portion and has a maximum thickness at a point substantially downstream of the pivot. The pivoted portion is smoothly curved from its upstream and to its point of maximum thickness and then is blended to a relatively thin trailing edge. The pivoted portion is also longer than the fixed portion and extends to the point of maximum thickness of the adjacent pivoted portion whereby air is turned through a given angle with a minimum of losses as a result of being continuously accelerated as it is turned.

3,442,494
EVAPORATIVE HEAT EXCHANGE APPARATUS
John Engalitcheff, Jr., Gibson Island, and Thomas F. Facius and Wilson E. Bradley, Jr., Baltimore, Md., and Axel F. L. Anderson, Clearwater, Fla., assignors to Baltimore Aircoil Company, Inc., Baltimore, Md.
Filed Feb. 16, 1968, Ser. No. 706,003
Int. Cl. F28d 5/02
U.S. Cl. 261—29 17 Claims



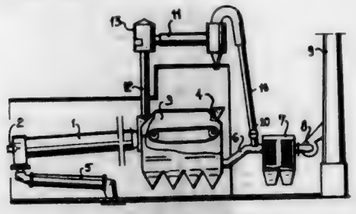
A blow-through evaporative heat exchange apparatus having a blower section with a wet deck section above it. The blower section has at least one slanting wall to provide space for an electric motor and blower under the slanting wall. Diffusion means are provided to ensure a uniform flow of air over the cross section of the wet deck.

3,442,495
APPARATUS FOR AERATING WASTE WATER
August Schreiber, 45A Bahnhofstrasse, Hannover-Vinnhorst, Germany
Filed Oct. 19, 1964, Ser. No. 404,599
Int. Cl. C02b 3/02; B04b 5/04; B01d 47/16
U.S. Cl. 261—83 3 Claims



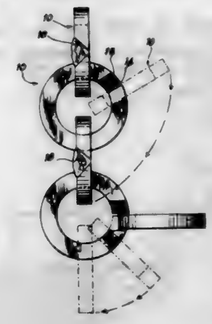
An apparatus for aerating waste water in which a plurality of hollow elements as scoop-like vessels are rotatably mounted in a drum and each vessel is open at both ends with a bottom portion intermediate the ends.

3,442,496
COOLING AND SUCTION DEVICE OF AN INSTALLATION COMPRISING A FURNACE HAVING AT ONE SIDE A BURNER PRODUCING A FLOW OF HOT GASES AND AT THE OTHER SIDE A DISTRIBUTOR OF MATERIAL TO BE BOILED
Jean Dionisotti and Philippe Boehler, Saint-Maurice, Switzerland, assignors to Societe des Ciments Portland de Saint-Maurice S.A., Saint-Maurice, Valais, Switzerland, a firm of Switzerland
Filed July 6, 1967, Ser. No. 651,555
Claims priority, application Switzerland, July 6, 1966, 9,829/66
Int. Cl. F27b 7/38; F27d 17/00
U.S. Cl. 263—32 3 Claims



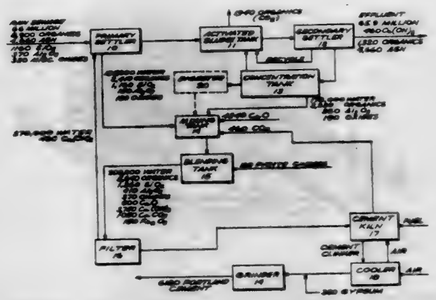
A cooling and suction device of an installation comprising a furnace having at one side a burner producing a flow of hot gases and at the other side a distributor means of material to be boiled, which comprises means for feeding hot gases and material in counter current relative to each other, the gases, being cooled during normal operation, being in contact with the material to be boiled. An evacuation chimney leads to free air and purifying means are operatively connected with the evacuation chimney. Auxiliary means are arranged for feeding cold air into the flow of hot gases slightly prior to the passage of the latter into the purifying means, and also means are provided for cooling the flow of hot gases.

3,442,497
HEAT TRANSFER ELEMENTS FOR ROTARY KILNS
Ray D. Gantz, Columbus, Ohio, assignor to S. G. Taylor Chain Company, Inc., Hammond, Ind., a corporation of Indiana
Filed June 5, 1967, Ser. No. 643,509
Int. Cl. F27b 7/20, 7/34; F27d 13/00
U.S. Cl. 263—33 3 Claims



Heat transfer elements consisting of a plurality of interconnected segments whereby the elements can be suspended from the wall of a rotary kiln for contact with material, such as a slurry, as it moves through the kiln. The individual segments comprise annular members defining a narrow point of separation. A V-shaped groove is formed adjacent the point of separation, and this combination permits joining of the segments for purposes of forming one of the elements. Weld material is formed in the V-shaped grooves once the segments have been joined together.

3,442,498
COMBINED WASTE TREATMENT AND CEMENT-MAKING METHOD AND MEANS
Noah S. Davis, Northridge, Calif., assignor to North American Rockwell Corporation, a corporation of Delaware
Filed June 13, 1967, Ser. No. 645,821
Int. Cl. C04b 7/48, 7/44, 7/36
U.S. Cl. 263—53 5 Claims



An activated sludge sewage treatment process is combined with a cementmaking process for making cement economically from normally waste materials. Activated sludge is flocculated with sequential additions of carbon dioxide and calcium oxide, filtered, and fed to a cement

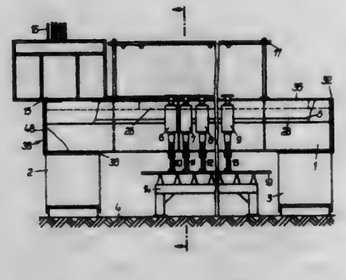
kiln. The organics in the sludge reduce fuel requirements in the kiln and the resultant clinker is in the portland cement composition range.

3,442,499

COOLED CUTTING TORCH CARRIAGE

Georg Adam Röder, Frankfurt am Main-Fechenheim, Germany, assignor to Messer Griesheim G.m.b.H., Frankfurt am Main, Germany, a corporation of Germany

Filed Sept. 20, 1966, Ser. No. 580,768
Claims priority, application Germany, Sept. 24, 1965, M 66,749, M 66,755
Int. Cl. B23k 37/02
U.S. Cl. 266—23 10 Claims



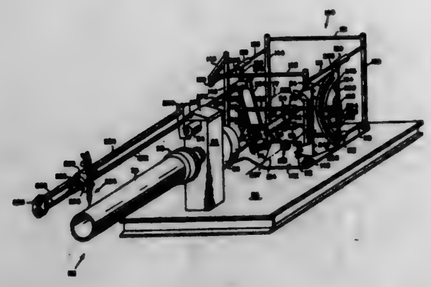
A cutting torch carriage has a hollow interior which is essentially closed against free movement of air. The interior is cooled by cooling structure having heat-absorbing elements and a circulation system connected to recirculate the air in the interior in a closed path in contact with the heat-absorbing elements.

3,442,500

APPARATUS FOR DEVELOPING BRANCH PIPE CONNECTIONS

John F. Fall, New Paltz, N.Y., assignor to Aljen Corporation, Ambler, Pa., a corporation of Pennsylvania

Filed Apr. 11, 1967, Ser. No. 630,123
Int. Cl. B23k 5/24, 7/10; B43l 11/00
U.S. Cl. 266—23 2 Claims



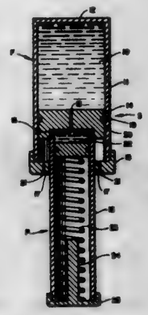
A pipe is rotated adjacent a cutting tool such as a cutting torch mounted for movement parallel to the pipe with the rotating mechanism actuating a structure which delivers its output to move the torch to develop together with the rotation of the pipe the desired contour at the end of the pipe.

3,442,501

NON-MECHANICAL VARIABLE ORIFICE SHOCK ABSORBER

Laurence R. Soderberg, Broomfield, Colo., assignor to The Martin-Marietta Corporation, New York, N.Y., a corporation of New York

Continuation-in-part of application Ser. No. 470,840, July 9, 1965. This application Feb. 25, 1966, Ser. No. 530,073
Int. Cl. B60g 11/26; F16f 3/00, 5/00
U.S. Cl. 267—64 14 Claims



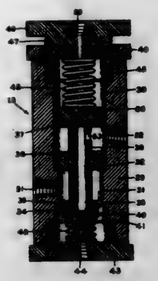
A shock absorber having a non-mechanical variable orifice with self-regulating response to changing shock conditions, this is accomplished by utilizing a hydraulic shock fluid in the shock absorber having non-Newtonian rheological properties.

3,442,502

AIR SPRING SUSPENSION FOR VEHICLES

Alvin M. Fischer and Harry J. Warmkessel, Allentown, Pa., assignors to Mack Trucks Inc., Montvale, N.J., a corporation of New York

Filed June 4, 1965, Ser. No. 461,394
Int. Cl. B60g 11/26
U.S. Cl. 267—65 2 Claims



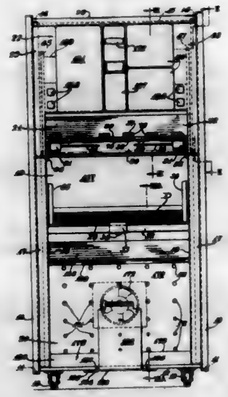
A regulating system for a vehicle having an air spring, an air reservoir and a leveling valve through which the air spring is supplied by the air reservoir, including a dump valve connected between the leveling valve and the air spring which may be actuated to connect the air spring with, or to disconnect it from, the leveling valve, the dump valve having a mechanism responsive to air pressure in the air spring for venting the air spring and maintaining a predetermined low pressure therein when the air spring is disconnected from the leveling valve.

3,442,503

DEVICE FOR FAN FOLDING DOCUMENTS

Daniel D. Call, Elk Grove, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois

Original application Oct. 10, 1962, Ser. No. 229,540, now Patent No. 3,255,662, dated June 14, 1966. Divided and this application Oct. 8, 1965, Ser. No. 494,190
Int. Cl. B65h 45/101
U.S. Cl. 270—61 10 Claims



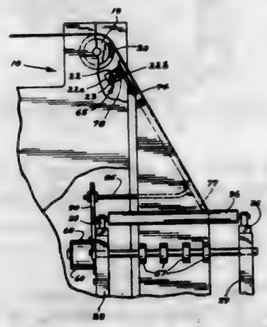
Apparatus for refolding continuous strip fan folded material subsequent to passage through a photographic zone in flat form. The refolding apparatus includes deflector means acting upon alternate document hinge sections for folding said hinge sections in one direction, and low pressure vacuum means acting upon alternate succeeding sections of the document for folding the intermediate alternate hinge sections in the opposite direction.

3,442,504

WEB FOLDING DEVICE AND METHOD

John W. Halley, 2042 Evergreen Terrace, Arlington Heights, Ill. 60004

Filed Dec. 8, 1966, Ser. No. 600,231
Int. Cl. B65h 45/00
U.S. Cl. 270—86 2 Claims



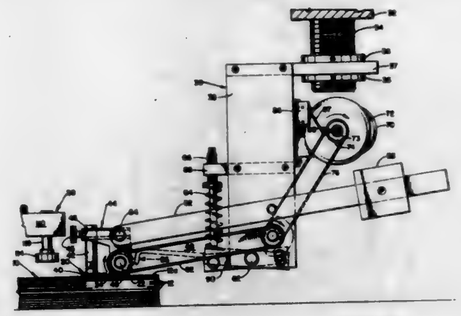
A web folding device having a planar surface defined by unbroken converging side edge portions having small cross sectional dimension which with the overlying web form restrictive outlets confining the boundary layer of air under said web to said surface to cushion said web.

3,442,505

AUTOMATIC APPARATUS FOR SEPARATING THE TOP WORKPIECE FROM A STACK OF FABRIC WORKPIECES AND FOR DELIVERING THE SEPARATED WORKPIECES

Charles Szentkuti, Ridgefield, Conn., assignor, by mesne assignments, to Ivanhoe Research Corporation, New York, N.Y., a corporation of Delaware

Filed Dec. 22, 1966, Ser. No. 603,990
Int. Cl. B65h 3/08, 5/06
U.S. Cl. 271—1 16 Claims



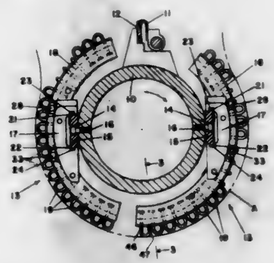
For automatic feeding of fabric workpieces from a stack one-at-a-time into a production line, a first clamp engages upon the top workpiece and a high friction surface engages this workpiece near the first clamp to move a localized region of it toward the first clamp, thereby separating a portion of this top workpiece from the next one. This separated portion is repositioned away from the next workpiece, and the exposed region of the next workpiece is engaged by a second clamp for holding all of the stack while the top workpiece is released. Delivery means completes the separation of the top workpiece from the stack and feeds it over to a delivery station.

3,442,506

ANTISMUDGE SHEET TRANSFER DEVICE

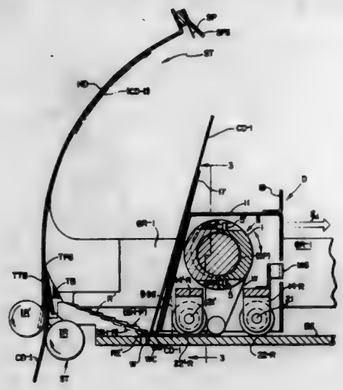
Bruno B. Pasquinelli, Evergreen Park, Ill., assignor to Miehle-Goss-Dexter, Incorporated, Chicago, Ill., a corporation of Delaware

Filed June 30, 1967, Ser. No. 650,339
Int. Cl. B65h 29/06
U.S. Cl. 271—85 11 Claims



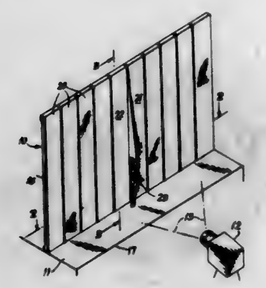
The sheet transfer device is composed of arcuate sectors supported for rotation about an axis disposed transverse to the path of the sheets. The sectors are in spaced parallel relation and they are laterally adjustable relative to the sheet path and each sector has a plurality of sheet supporting members thereon which are selectively positionable in a radial direction to provide support for the sheets only in non-image areas thereof.

3,442,507
STACKING DEVICE
Lawrence D. Root, Acton, and Wilbern F. Davis, Sharon, Mass., assignors to Honeywell, Inc., Minneapolis, Minn., a corporation of Delaware
Filed July 19, 1967, Ser. No. 654,551
Int. Cl. B65h *31/04*
U.S. Cl. 271—87 10 Claims



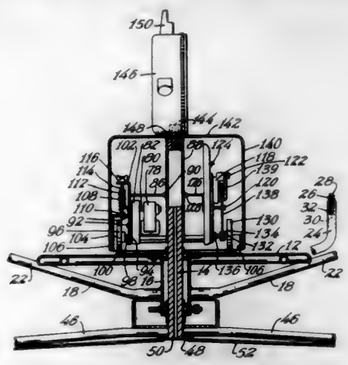
A record stacking, "push-plate," device for arranging on a stacking hopper bed of a record handling device adjacent a record-injection zone thereon, so as to receive injected records and retain them in a prescribed stacked relation, the device being provided with wheels and associated tracks for guided travel along the stacking axis and further including a resilient web mounted to be spring-wound inside the device and anchored on the bed so as to be laid down as a mat-support for records as they are stacked.

3,442,508
THEATRICAL STAGE SETTING FOR COMBINING MOTION PICTURES AND LIVE ACTION
Tibor Rudas, Sydney, New South Wales, Australia, assignor to Rudas Theatrical Organisation Pty. Ltd., a corporation of Australia
Filed Feb. 18, 1966, Ser. No. 528,572
Int. Cl. G03b *21/60*; A63j *5/00*
U.S. Cl. 272—21 3 Claims



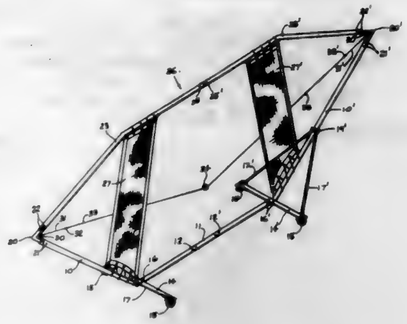
Theatrical setting includes a stage, and a screen for receiving motion pictures from a projector. Screen is formed of flat parallel stretchable strips held in taut condition. During motion picture display, strips are expanded by pressing against them to create temporary openings in screen through which live action moves from one side of screen to the other.

3,442,509
MERRY-GO-ROUND
Michael Figura, Bruce, Wis. 54819
Filed Mar. 30, 1967, Ser. No. 627,025
Int. Cl. A63g *1/10*
U.S. Cl. 272—43 9 Claims



Relates to a portable merry-go-round having a motorized functionally driven turntable having a plurality of mounts on which riders may sit. Self-aligning bearings positioned in flanges align the platform with a supporting shaft. The mounts may move relative to the platform and the entire merry-go-round may move up and down on resilient legs. A musical device may be driven by rotation of the turntable.

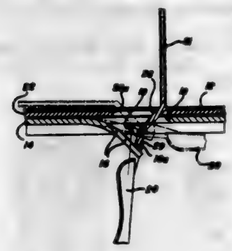
3,442,510
EXERCISE DEVICE WITH TETHERED PROJECTILE
Roald H. Sorensen, Buies Creek, N.C. 27506
Filed Sept. 6, 1966, Ser. No. 577,224
Int. Cl. A63b *69/00*
U.S. Cl. 273—26 9 Claims



A practicing device for batting a ball tethered on an elastomer member with screens to protect the user and to control the return flight of such ball.

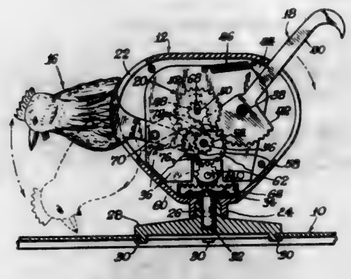
3,442,511
TOY BOWLING GAME
Calvin L. Payne, Jr., Hastings on Hudson, N.Y., assignor to Tudor Metal Products Corporation, Brooklyn, N.Y., a corporation of New York
Filed Oct. 3, 1966, Ser. No. 583,572
Int. Cl. A63d *5/00*; A63b *71/00*
U.S. Cl. 273—41 2 Claims

The application discloses a bowling game having an outer shell of U-shaped configuration. A stationary plate is riveted to the upper leg of the shell. Between the stationary plate and shell is disposed a slide plate used to cam bowling pins hinged to the stationary plate into upright position. A cam surface pin extension angularly oriented to the axis of each pin is provided for this purpose. A marker is connected to the top of the cam surface appearing above the shell. The cam surface extends through apertures in the two plates with each aperture



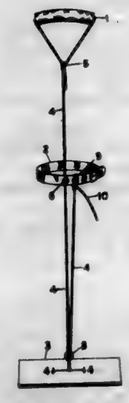
of the stationary plate containing a biasing tongue which bears on a depending detent extension of the cam surface and extending through a hole in the pin. Each detent is adapted to engage a shoulder precisely vertically underneath the horizontal hinge axis of the pin so as to maintain said pin in upright position. When the detent is budged away from said shoulder the tongue causes the pin to collapse.

3,442,512
ROTATING FIGURE WITH OSCILLATING HEAD PORTION
Marvin I. Glass and Henry Stan, Chicago, and Leonid Kripak, Villa Park, Ill., assignors to Marvin Glass & Associates, Chicago, Ill., a partnership
Filed Apr. 27, 1965, Ser. No. 451,283
Int. Cl. A63b *71/00*; A63f *1/18*
U.S. Cl. 273—141 6 Claims



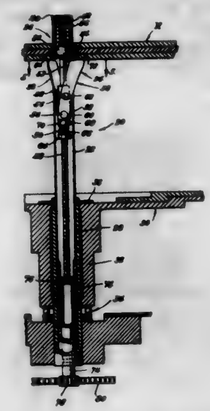
A game including a game board having a path thereon for the movement of playing pieces, and a spinner device for directing the movement of the playing pieces. The spinner device is in the form of a simulated chicken which is removably mounted on the playing board and which is actuated by downward movement of the tail portion of the chicken. Mechanism within the chicken figure is effective to produce rotation of the figure and bobbing movement of the figure's head in response to such downward movement of the tail portion of the chicken figure. Numbers are arranged on the board around the path of movement of the chicken figure and the final motion of the head of such figure will be downwardly to indicate one of the numbers.

3,442,513
GOLF TRAINING APPARATUS
George F. Fisher, Westlake, Ohio; Anna G. Fisher, executrix of said George F. Fisher, deceased, assignor to Harvey George Fisher, 2725 Canterbury Road, Westlake, Ohio 44145
Filed Mar. 8, 1967, Ser. No. 621,606
Int. Cl. A63b *69/36*
U.S. Cl. 273—188 2 Claims



Apparatus for use in practicing the proper swing of a golf club including a padded neck piece, a belt, and a base plate adjustably connected together by a strong nylon cord, one end of which cord passes through the neck piece and is wrapped around the main cord to which it is secured by a knot and a tape having a pressure sensitive adhesive thereon. The other end of the cord passes through a grommet in the belt and through the eye of an eye bolt secured to and extending through the base plate. The cord is then passed upwardly through another grommet in the belt with its free end extending over the belt and then downwardly to the length of cord extending between the eye bolt and the second mentioned grommet where it is adjustably secured by a knot.

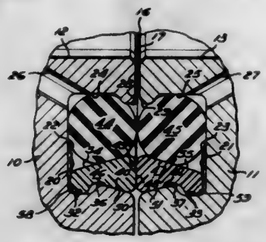
3,442,514
RECORD CHANGER SPINDLE
Gerald H. Freier, Benton Harbor, Mich., assignor to V-M Corporation, Benton Harbor, Mich., a corporation of Michigan
Continuation of application Ser. No. 445,381, Apr. 5, 1965. This application Dec. 11, 1967, Ser. No. 689,727
Int. Cl. G11b *17/10*
U.S. Cl. 274—10 17 Claims



Record changer spindle having vertically extending slots down to the turntable and through which extend fingers

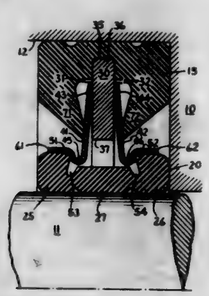
providing a solid shelf support for records stored about the upper slotted portion of the spindle, said spindle further containing a carrier which moves vertically therein by rotation of one of a pair of telescoping threaded members, the fingers being pivoted to said carrier such that they are retractable within the spindle through planes spaced parallel to the spindle axis when they engage the turntable or the centerhole of a record supported thereon, the carrier having means which resiliently hold the fingers in their record supporting extended position and pins on the carrier cooperating with oversized holes in the fingers for limiting pivotal movement of the fingers.

3,442,515
OPPOSED FACE NON-EXTRUSION SEAL
Donald J. Murauskas, Cleveland, Ohio, assignor to The Weatherhead Company, Cleveland, Ohio, a corporation of Ohio
Filed Sept. 6, 1966, Ser. No. 577,338
Int. Cl. F16j *15/40, 15/16;* **F16l** *17/00*
U.S. Cl. 277—27 **8 Claims**



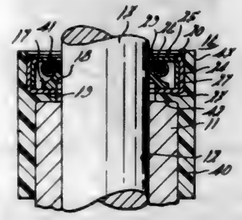
An annular face seal for sealing against fluid pressure loss from a body having a passage therethrough exposed to fluid pressure and a face extending radially from the passage. An annular groove in the face is provided with an O-ring adjacent its inner axial wall, and a back-up ring between the O-ring and the outer axial wall. The outer axial wall and the adjacent side of the back-up ring have cooperating camming surfaces operable under a radially outward force applied to the back-up ring to tend to force the back-up ring axially out of the groove. The O-ring is operable to apply the radial outward force to the back-up ring when the fluid pressure being sealed against is applied to the inner side of the O-ring.

3,442,516
SEAL FOR OSCILLATING SHAFTS
Robert M. Voitik, Glenview, Ill., assignor to Continental Illinois National Bank and Trust Company of Chicago as trustee under the Cartridge Type Seal Liquidation Trust No. 54870
Filed Sept. 29, 1966, Ser. No. 582,874
Int. Cl. F16j *15/40, 9/00;* **F16k** *41/00*
U.S. Cl. 277—39 **3 Claims**



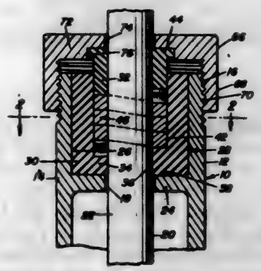
A seal particularly suited to the sealing of oscillating shafts characterized by an annular rubber grommet and an annular rubber boot, the latter mounting a sealing ring, and with the grommet carrying a pair of diaphragm rings which bear on opposite sides of the sealing ring. The grommet is stressed to press the diaphragm rings mutually inwardly against the sealing ring.

3,442,517
SEAL
Ralph L. Skinner, Sr., Birmingham, Mich., assignor to Renniks Corporation, Birmingham, Mich., a corporation of Michigan
Filed Nov. 2, 1966, Ser. No. 591,609
Int. Cl. F16j *15/32*
U.S. Cl. 277—48 **9 Claims**



A seal primarily adapted for valve stems and the like having annular skirt and housing portions and a radially inwardly extending flange between such portions, an annular sealing element in the housing portion supported on the flange and having an inner annular sealing face, a garter spring surrounding the annular sealing element and bearing on a beveled surface thereof, and an annular spacer in the housing having a radial flange overlaying the spring holding the latter and the sealing element in the housing and positioned longitudinally therein by the strict the sealing element so as to maintain a sealing pressure on the inner sealing face of the latter, the spacer also having an axially extending portion fitting snugly within the housing and positioned longitudinally therein by the radial flange to maintain a constant predetermined pressure on the spring whereby to ensure a constant, uniform and predetermined pressure at the sealing face of the sealing element.

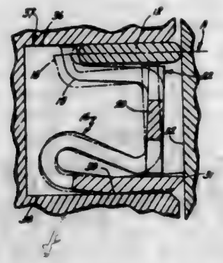
3,442,518
PACKING FOR STUFFING BOXES
Langford W. Henshaw, Box 1227, Blackwell, Tex. 79506
Filed May 11, 1966, Ser. No. 549,255
Int. Cl. F16j *15/18, 15/20, 15/16*
U.S. Cl. 277—110 **3 Claims**



A convoluted packing member and a pair of longitudinally split generally annular end members disposed at opposite ends of the convoluted packing member, the opposite terminal ends of the convoluted member conforming to and being snugly seated in circumferential-

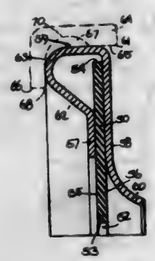
ly and axially opening notches formed in the opposing sides of the end members and the remote faces of the end members being disposed generally normal to the longitudinal axis of the convoluted packing member.

3,442,519
MONORAIL PISTON RING
Douglas W. Hamm, Muskegon, and Kenneth J. Nisper, Spring Lake, Mich., assignors to Muskegon Piston Ring Company, Muskegon, Mich., a corporation of Michigan
Filed Sept. 20, 1967, Ser. No. 669,066
Int. Cl. F16j *9/06;* **F02f** *5/00*
U.S. Cl. 277—140 **7 Claims**



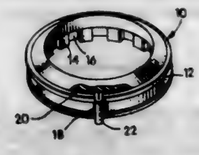
This invention is concerned with a piston ring of the expander-spacer type in which the expander-spacer has, at least, on one side, a segmented scraper, the other side may consist of rail seats which receive, support and apply radial tension to a parted rail of conventional design or it may consist of segmented scrapers. The segments of the scraper edge of the ring are arched along a line extending circumferentially of the ring, substantially mid-point between the radial inner and outer faces of the ring, creating a crown. The crown may be formed by other means. This crown provides line contact with the ring groove and controls the twist or tilt attitude of the ring in the ring groove resulting from the radial or other forces incident to the ring's operation.

3,442,520
BEARING SEAL
John J. Kupchick, Forestville, Conn., assignor to TRW Inc., Euclid, Ohio, a corporation of Ohio
Continuation-in-part of application Ser. No. 538,888, Feb. 14, 1966. This application Aug. 2, 1967, Ser. No. 657,926
Int. Cl. F16j *15/00, 9/00;* **F16k** *41/00*
U.S. Cl. 277—169 **4 Claims**



The bearing seal comprises a metal ring-shaped support and a flexible diaphragm for sealing bearings. The support is made of a dead soft metal and has a bead which is swaged or pressed to fit in a circular groove in the bearing to mount the seal on the bearing.

3,442,521
COVER FOR SPLIT BAND ON MOLDED ARTICLE
Ralph Martin Rutledge, Robert L. Henry, and William Albert Williams, Fort Wayne, Ind., assignors to Tri-State Products, Inc., Fort Wayne, Ind., a corporation of Indiana
Filed Apr. 22, 1966, Ser. No. 544,518
Int. Cl. F16j *15/12;* **F16f** *15/04*
U.S. Cl. 277—237 **3 Claims**



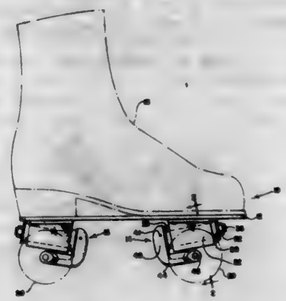
A cover is placed on the inner side of the split in a reinforcing band on a molded article to prevent flash material from passing through the split during molding.

3,442,522
METHOD OF SKATING AND APPARATUS FOR PRACTICING SAID METHOD
Athelstan F. Spilhaus, Mound, Minn., assignor to Experimentoy Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed May 31, 1966, Ser. No. 554,056
Int. Cl. A63c *1/22, 3/00;* **A63b** *69/00*
U.S. Cl. 280—11.1 **10 Claims**



A method of (and apparatus for) skating on an essentially planar horizontal surface which involves strapping to each foot of the wearer an ice-holding shoe whose lower surface is fixedly connected to a contoured piece of ice which also has its lower surface in an essentially planar form. By moving the feet of the wearer in any desired direction, skating on any desired horizontal surface is effected.

3,442,523
ROLLER SKATE WHEEL ASSEMBLY
John L. Butler, Anacortes, Wash. 98221
Filed Feb. 1, 1967, Ser. No. 613,234
Int. Cl. A63c *17/02*
U.S. Cl. 280—11.28 **10 Claims**



Skate wheel supporting and mounting structure having a hanger member at each end of the shoe plate on the

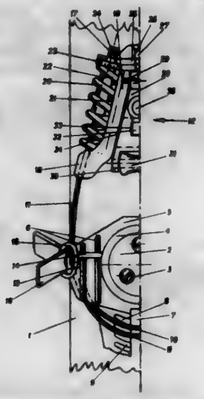
under side. Each hanger member has a bore which extends downwardly and inwardly and which is open at both ends. Inside the hanger member bore is a resilient cushion block which receives a rod or king pin centrally therethrough. At one end of the king pin or rod is secured a truck member to which the axle and wheels are connected. At the other end of the king pin is an adjustment device for regulating the stiffness or resistance of the turning action. The truck and rod are isolated from the hanger so that metal contact between relatively moving metal parts is avoided.

3,442,524

SKI BINDING HAVING A FORWARD RELEASE WHICH IS FLOATING OR SECURED TO THE SKI AND EFFECTIVE DURING A FORWARD FALL

Hans Menzl, Ludwigstrasse 5, Regensburg, Germany

Filed Oct. 7, 1966, Ser. No. 585,193
Claims priority, application Germany, Nov. 20, 1965, M 67,340
Int. Cl. A63c 9/08
U.S. Cl. 280—11.35 **4 Claims**



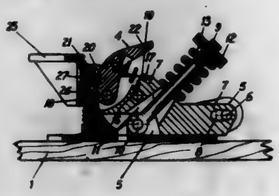
A ski binding comprising automatic heel release means to engage the heel of a ski boot and retain same securely on a ski but to automatically release said boot responsive to a forward fall, said release means including tension elements extending forwardly from said release means, and a longthong binding cross connecting the forward ends of the tension elements and serving as an extension thereof.

3,442,525

HEEL-RELEASING DEVICE FOR SAFETY SKI BINDINGS

Egon Heckl, Reidwiesenstrasse 10, Garmisch-Burgrain, Germany

Filed May 2, 1967, Ser. No. 635,512
Claims priority, application Germany, May 20, 1966, M 69,582
Int. Cl. A63c 9/08
U.S. Cl. 280—11.35 **3 Claims**



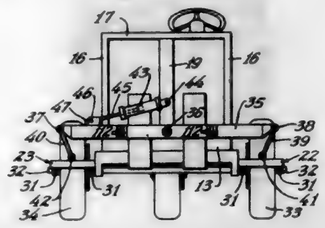
The sole holder is secured to a pivoted lever, which is pivoted on a transverse pivot, which is fixed relative to the ski. The pivoted lever is slidably mounted on the transverse pivot by a guide slot. A spring force in a forwardly and downwardly inclined direction acts between the pivoted lever and the ski. The sole holder is mounted on the pivoted lever for an upward pivotal movement. A detent device which is disengaged in response to an excessive tension is provided between the sole holder and the pivoted lever.

3,442,526

TRACTOR MOWER

Alvin F. Olson, Rte. 2, New Richmond, Wis. 54017

Filed Mar. 24, 1967, Ser. No. 625,792
Int. Cl. B60g 3/26
U.S. Cl. 280—43.13 **10 Claims**



The device comprises a vehicle useful in traveling along side hills for mowing grass and the like. A pair of opposed wheels are mounted at the ends of arms pivoted on a common transverse axis. The free ends of the arms are link connected to a transverse cross member hinged centrally to the vehicle body so that as one wheel raises the other lowers. Means are provided for actuating the cross-member.

3,442,527

DETACHABLE JUVENILE UTILITY ASSEMBLY

Louis Gottfried, 515 West End Ave., New York, N.Y. 10024, and Jacob Berger, 600 W. 264th St., Bronx, N.Y. 10471

Filed Aug. 4, 1966, Ser. No. 570,360
Int. Cl. B62b 7/14, 7/12
U.S. Cl. 280—47.41 **5 Claims**



A convertible and detachable utility assembly comprising a lower base member, an intermediate support member including an upper portion and a lower portion, an upper utility member, means secured to the lower member for releasably connecting the leg portion to the lower member, and connecting means for rigidly but releasably

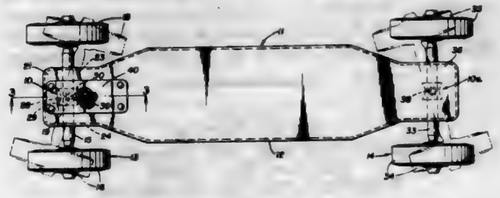
connecting the upper portion of the intermediate support member to the upper utility member. The connecting means comprises side ridges depending from the bottom of the upper utility member along the outermost sides thereof. A hook member is immovably secured to the bottom adjacent one end of the bottom between the side ridges and faces a substantially longitudinal direction relative to the side ridges, the hook member extending substantially in the lateral direction. An abutting member is secured to the bottom adjacent the other end of the bottom between the side ridges and has an abutting face substantially facing in the longitudinal direction opposite to the facing of the hook member. The upper portion of the intermediate support member comprises a longitudinal member including side arm portions and lateral end portions, and the hook member engages one of the lateral end portions and the abutting face of the abutting member for juxtaposition to the other lateral end portion of the side ridges juxtaposed to the side arm portions. A releasable rocking means is provided for rigidly but releasably affixing the other lateral end portion in juxtaposition to the abutting face.

3,442,528

STEERING AXLE MOUNT FOR A WHEELED TOY

Thomas P. Rademacher, Medina, Ohio, assignor to Sun Corporation, Barberton, Ohio, a corporation of Ohio

Filed Apr. 18, 1967, Ser. No. 631,674
Int. Cl. B62b 1/00, 5/00
U.S. Cl. 280—87.04 **3 Claims**



A steering and tracking mount adaptable for the front and rear axles of a toy riding vehicle whereby the front and rear axles, each of which may have two laterally spaced wheels rotatably mounted thereon, properly turn in response to the rider leaning into the direction he desires to have the vehicle turn. When two such axles are employed both are pivotally mounted to a rigid frame member extending therebetween. The swing pins by which the axles are mounted to respective support means affixed to the frame are oriented perpendicularly with respect to the axle mounted thereby and convergently downward with respect to each other, each swing pin being inclined at an angle of between 25 to 35 degrees with respect to a vertical reference. In the preferred embodiment disclosed the support means are disposed so as to extend longitudinally outwardly and downwardly from the frame, also at an angle of inclination between 25–35 degrees with respect to a horizontal reference.

3,442,529

INERTIA RETRACTING DEVICE WITH WEIGHT ACTUATED TAKE-UP

Gerald F. Lewis, Berkley, David P. Jones, Detroit, and Ronald J. Palmieri, Harper Woods, Mich., assignors to Jim Robbins Seat Belt Co., Royal Oak, Mich.

Filed Apr. 24, 1967, Ser. No. 633,014
Int. Cl. B60r 21/10
U.S. Cl. 280—150 **6 Claims**

A vehicle safety belt assembly having a counterweight attached to the stored end of a section of webbing. The counterweight is slidably mounted in an upright storage tube and biases the webbing toward a stored position, but permits the webbing to be extended from the stored position in response to a nominal pull-out force.



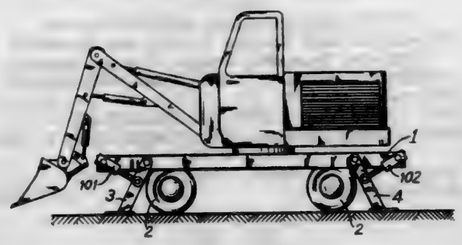
The webbing is threaded around and between a pair of movable, cooperating clamping members. A pull-out force producing an excessive feed-out rate causes the clamping members to approach one another and lock the webbing to the vehicle to prevent further extension of the webbing.

3,442,530

METHOD OF OPERATING EXTENDABLE AND RETRACTABLE STABILISING STAYS OR PROPS OF PUBLIC WORKS VEHICLES AND AN HYDRAULIC SYSTEM FOR CARRYING OUT SAID METHOD

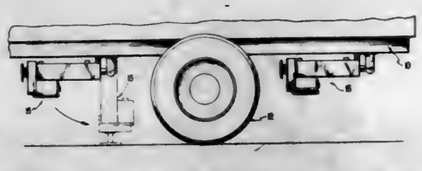
Gabriel L. Guinot, Le Plessis-Belleville, Oise, France

Filed Feb. 15, 1967, Ser. No. 616,334
Claims priority, application France, Mar. 22, 1966, 54,395
Int. Cl. B60s 9/10; F15b 15/00
U.S. Cl. 280—150.5 **7 Claims**



A hydraulic system for operating the extendable and contractible stabilising stays of a public works vehicle. At least two groups of stabilising stays are attached to double-acting hydraulic rams. The rams of one group are fed in parallel and each group is arranged to be fed independently of the other from a single source of pressure fluid through a single distributor. The supply conduit for the rams of one of the groups has two branch conduits, one of which is provided with a calibrated main valve which allows controlled supply of pressure fluid to said rams. The other branch conduit is provided with a non-return valve acting in the opposite direction to the calibrated main valve with which it is associated. The invention also includes the method of operating extendable and contractible stabilising stays of a public works or handling vehicle.

3,442,531
STABILIZING MEANS
Benny John Rutledge, 2216 9th St., Wasco, Calif. 93280
Filed Mar. 7, 1968, Ser. No. 711,449
Int. Cl. B60s *9/08, 9/00*
U.S. Cl. 280—150.5 10 Claims



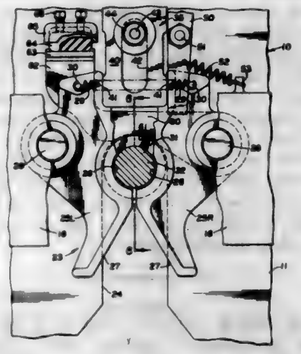
Stabilizing means for use with a trailer or the like capable of automatic movement between an out-of-the-way position beneath the trailer when the trailer is attached to a supporting vehicle for traveling, and a stabilizing position wherein a portion of the device engages a supporting surface such as the ground to maintain the bed of the trailer in a generally horizontally extending or other position without the need for the supporting vehicle. A shaft member is axially moved by a motor means or the like within a hollow body member and the upper end of the shaft member engages a cam means when the shaft member has been retracted to pivot the stabilizing means to a generally horizontally extending traveling position with relation to the trailer. On reversal of the motor means, the upper end of the shaft member is moved along the cam means and then out of engagement with the cam means whereby the weight of the stabilizing means functions to lower the same into a generally vertically extending position for supporting the trailer. A modified embodiment includes an automatic means for locking the stabilizing means in its generally vertically extending position, the locking means being automatically disengaged on retraction of the shaft member to permit the stabilizing means to be moved to its generally horizontally extending traveling position.

3,442,532
PORTABLE INVALID WHEELCHAIRS
Kenneth Gardner, Toronto, Ontario, and Donald A. Wightman, Brampton, Ontario, Canada, assignors to Hale & Associates Limited, Port Credit, Ontario, Canada
Filed May 1, 1967, Ser. No. 635,237
Claims priority, application Great Britain, May 2, 1966, 19,200/66
Int. Cl. B62m *1/14*; A61g *5/00*
U.S. Cl. 280—250 10 Claims



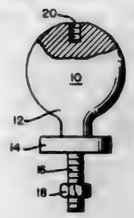
A collapsible wheelchair in which relatively small ground wheels are connected by chains to handwheels to permit driving. The wheelchair is formed by upper and lower mutually pivoted frames that are each unitary and permit vertical collapsing.

3,442,533
FIFTH WHEEL COUPLER ASSEMBLY
William Dean Walther, Dayton, Ohio, assignor to The Dayton Steel Foundry Company, Dayton, Ohio, a corporation of Ohio
Filed May 15, 1967, Ser. No. 638,473
Int. Cl. B62d *13/00*
U.S. Cl. 280—435 2 Claims



Fifth wheel coupler assembly carried by tractor to engage kingpin on trailer. During coupling a compression bar cooperating with a resilient bushing absorbs impact of coupling. Thereafter the compression bar engages the upper portion of the kingpin acting as shock absorber for to and fro, oscillatory, motion of the trailer to the tractor.

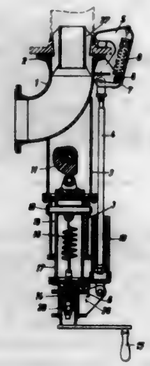
3,442,534
SAFETY HITCH
Manley L. McCorkle, 1002 Gardenia Lane, Longview, Tex. 75601
Filed Jan. 3, 1967, Ser. No. 606,744
Int. Cl. B60d *1/06*
U.S. Cl. 280—511 24 Claims



A hitch for coupling a drawn vehicle to a draft vehicle; including, a ball having a stud and nut for attaching the ball to the draft vehicle; a socket on the tongue of the drawn vehicle and adapted to receive the ball; a main clamp adapted to releasably clamp the ball in the socket and prevent the ball from seperating from the socket when the coupling hitch is in use; a stud mounted in the top of the ball projecting upwardly from the top of the ball through an aperture in the socket; a limiting element, such as an enlarged head, a nut of the like, mounted on the upper end of the stud, larger in diameter than the stud and the aperture in the socket to thereby prevent accidental removal of the socket from the ball and at the same time permit sufficient vertical clearance for the socket to rotate through vertical planes about the ball. A limit spring or chain, attached to the releasably mounted

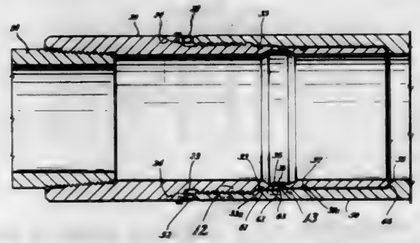
one of the stud or the limiting element and to the socket means is also adapted to prevent the limit means from being accidentally removed by unscrewing or the like.

3,442,535
RAPID-ACTION COUPLING FOR OIL TRANSFER APPARATUS
Josef Fröhlich, Dusseldorf, Germany, assignor to Mannesmann Aktiengesellschaft, Dusseldorf, Germany, a corporation of Germany
Filed Nov. 8, 1966, Ser. No. 592,906
Int. Cl. F16l *35/00, 39/00, 55/00*
U.S. Cl. 285—27 7 Claims



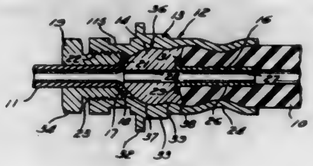
A rapid-action coupling that includes a mouthpiece of elbow shape and claws displaceable by a displacing device. A pin is connected to the mouthpiece for each claw, and each claw is movable about the pin. The pin engages an aperture of each claw, and each claw is displaceable relative to the pin, against the bias of a spring arranged on the claw in response to the movement of a connecting rod that is in driven connection with a cross head of the aforesaid displacing device.

3,442,536
PIPE JOINT HAVING CIRCUMFERENTIALLY SPACED TEETH COUPLING MEANS
John H. Fowler, Houston, Tex., assignor to Rockwell Manufacturing Company, Houston, Tex., a corporation of Pennsylvania
Continuation of application Ser. No. 572,511, Aug. 15, 1966. This application May 9, 1968, Ser. No. 728,081
Int. Cl. F16l *37/24, 15/00*
U.S. Cl. 285—27 14 Claims



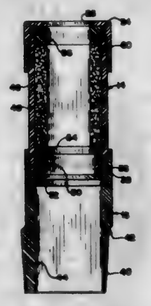
A joint connection comprising a male member and a female member. The male member is provided with vertical groupings of teeth on the exterior thereof. The teeth have no lead angle. Lying between each group of teeth is a smooth wall segment whose diameter is no greater than the root diameter of the toothed portion. The female member is provided on its interior with corresponding tooth groupings for mating with the male member teeth. The female member also has smooth walled segments between tooth segments, the diameter of which is no less than the root diameter of these tooth segments. The width of the smooth wall segments is greater than the width of the tooth segments to allow full insertion of the male member into the female member on alignment of the tooth segments of one member with the smooth wall segments of the other member. The male member, fully inserted, may be rotated in either direction a fraction of a turn causing full engagement of corresponding tooth segments. Positional stop keys attached to the male member are provided to contact lug extensions on the female member to limit rotation at full engagement. Seal means are provided including corresponding tapered portions on each member.

3,442,537
COMPOSITE FORGED FITTING OF DIVERSE METALS
Louis B. Courtot, Euclid, and Thomas J. Mack, Cleveland, Ohio, assignors to The Weatherhead Company, Cleveland, Ohio, a corporation of Ohio
Filed Oct. 1, 1964, Ser. No. 400,701
Int. Cl. F16l *37/10*
U.S. Cl. 285—174 2 Claims



Forged fittings such as tube fittings and hose fittings are formed from a blank of composite material of uniform cross-section having a jacket of one metal and a core of a different metal having a different modulus of elasticity. By simultaneously working the composite blank as in a progressive heading machine, the core and shell are worked together to become mechanically interlocked in the finished article even though no actual bonding takes place between the different metals. When the core has a lower modulus of elasticity in the finished article the core is in compression and the jacket is in tension.

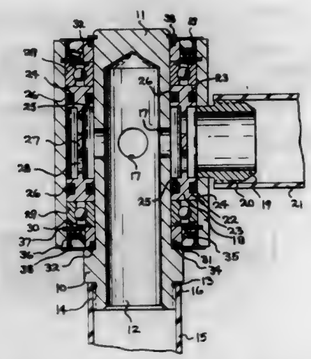
3,442,538
ECCENTRIC ADAPTER FOR A STUFFING BOX
Ira Glasscock, Jr., 1005 E. 4th, Big Lake, Tex. 76932, and Lewis J. Bundrant, Box 221, Lubbock, Tex. 79408
Filed July 24, 1967, Ser. No. 655,595
Int. Cl. F16l *55/00*; F16c *1/24*
U.S. Cl. 285—178 8 Claims



An eccentric coupling device for aligning a polish rod with a stuffing box of an oil well wherein the eccentric coupling is between the tubing of the oil well and the stuffing box, where by relative rotation between the eccentric coupling and the stuffing box with respect to the tub-

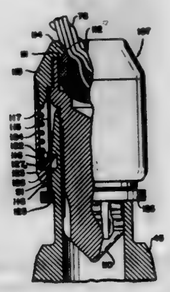
ing, provides alignment between the upper portion of the stuffing box and the reciprocating polish rod. The device further comprehends a template which enables rapid alignment of the stuffing box with the reciprocating polish rod.

3,442,539
HOSE SWIVEL ASSEMBLY FOR HIGH PRESSURE HYDRAULIC FLUID
Kenneth W. Randall, Indianapolis, Ind., assignor to Insley Manufacturing Corporation, Indianapolis, Ind., a corporation of Indiana
Filed Aug. 11, 1967, Ser. No. 660,006
Int. Cl. F16l *41/00, 5/02, 27/08*
U.S. Cl. 285—190 **1 Claim**



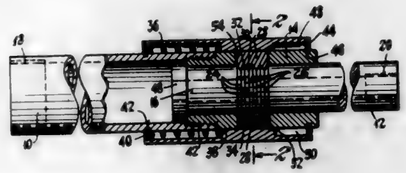
A hose swivel assembly for high pressure hydraulic fluid in which a floating self-contained high pressure sealing member responsive to the hydraulic pressure fluid is interposed between a tubular bearing section and a housing section. An antifriction bearing unit is arranged at each end of the sealing member and any end thrust on the sealing member is transmitted through the respective antifriction bearing unit to a thrust ring with which is associated a device for excluding dirt and foreign matter from the rotating parts.

3,442,540
CONNECTION OF UNDERWATER FLOWLINES
James Ronald Dozier, Whittier, and Glenn D. Johnson, Downey, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Original application Mar. 23, 1964, Ser. No. 353,840, now Patent No. 3,298,092, dated Jan. 17, 1967. Divided and this application Sept. 12, 1966, Ser. No. 594,301
Int. Cl. F16b *7/00;* **F16l** *35/00, 55/00*
U.S. Cl. 287—76 **3 Claims**



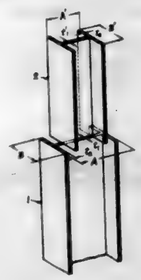
The invention relates to wells located below a body of water and the coupling of a flowline to a drawline by means of a socket having a universal pivotal connection with the drawline and a releasable detent connection with the flowline.

3,442,541
RELEASABLE FASTENER
Joseph R. Metz, Ridgefield, Conn., assignor to Norco, Inc., Ridgefield, Conn., a corporation of Connecticut
Filed Nov. 25, 1966, Ser. No. 597,064
Int. Cl. F16d *1/00;* **F16l** *21/00, 55/00*
U.S. Cl. 287—119 **1 Claim**



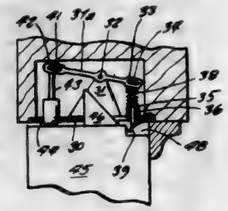
A separable fastener comprising inner and outer tubular telescoping members and a locking dog which can lock the members to each other. The dog is disposed in a slot of the outer member, and is receivable in a notch of the inner member to effect the locking. A spring-biased slidable sleeve on the outer member retains the dog in locking position, or else frees it for movement out of the notch, thereby freeing the inner member.

3,442,542
METHOD AND MEANS FOR JOINING H-FORM STRUCTURAL COLUMNS AND BEAMS
Yoshiro Watanabe, Takinogawa Apartment of Japan Housing Association, No. 3, 7-chome, Takinogawa, Kita-ku, Tokyo, Japan
Filed Nov. 21, 1966, Ser. No. 595,962
Claims priority, application Japan, Nov. 20, 1965, 40/71,272
Int. Cl. F16b *1/00, 5/00, 7/00*
U.S. Cl. 287—189.35 **5 Claims**



A metal splicer and a method for joining H shaped structural sections of different web depths comprising a splicer defined by two offset symmetrical flat plate portions extending in oppositely directed parallel relationship from opposed sides of a centrally disposed rigid section having a substantially parallelogram cross section, wherein the splicer is inserted into a space defined by a pair of axially aligned structural sections of different depth web H sections, and the flat plate portions of the splicer are secured to the respective web H sections by riveting or bolting.

3,442,543
PRYPROOF DOOR STRIKER
Daniel Weyman, 96 E. Hazelwood Ave., Rahway, N.J. 07065
Filed Aug. 28, 1967, Ser. No. 663,850
Int. Cl. E05b *15/02, 17/00*
U.S. Cl. 292—340 **1 Claim**



A striker plate for a door lock, the plate having a sidewardly extending lip to prevent insertion of a flat strip of celluloid or other device against the inclined front side of the lock bolt to move it into unlocked position.

3,442,544
GOLF BALL RETRIEVER
Saul Faber, 3446 N. 67th St., Milwaukee, Wis. 53216
Filed Aug. 15, 1967, Ser. No. 660,676
Int. Cl. A47f *13/06*
U.S. Cl. 294—19 **4 Claims**



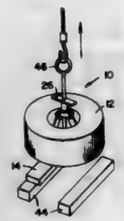
Disclosed herein is a golf ball retriever for use in recovery of a golf ball from a water trap, pond or any lie out of reach of the golfer. The retriever includes a cup secured to a handle having telescopically adjustable related sections. The retriever can be carried in a golf bag and in its telescoped condition is the same length as a golf club. The cup includes a one-piece leaf spring having spring fingers which form a ball receiving throat which retains a golf ball in the cup during retrieval. The cup is larger than a golf ball, thus permitting the ball to enter the cup nonconcentrically under less spring pressure than when received concentrically.

3,442,545
ATTACHMENTS FOR SHOVELS
Gino Ramon, 7123 W. Blue Mound Road, Wauwatosa, Wis. 53213
Filed Aug. 22, 1967, Ser. No. 662,530
Int. Cl. A01b *1/02*
U.S. Cl. 294—59 **1 Claim**



An attachment for a shovel for cement or concrete workers comprising a hook or claw integral with a small plate to be attached on the lower surface of a shovel, about two inches from the blade edge, said hook being backwardly directed to enable a worker to pull reinforcement mesh toward him to raise and tighten the same during the operation of shoveling cement or concrete.

3,442,546
STRIP ROLL POSITIONING MECHANISM
William Bachman, 4824 Fulton St., San Francisco, Calif. 94121
Filed Dec. 12, 1966, Ser. No. 601,197
Int. Cl. B66c *1/54, 1/60*
U.S. Cl. 294—67 **6 Claims**



Limp and delicate coils of coiled strip can be easily handled, positioned, and supported in use by inserting through the center of the coil a bottom guide block, centering the guide block by tripod means, sliding a supporting bar through the guide block into a predetermined position with respect to the block, lifting the supporting bar with the coil supported on it, and depositing the whole device in a precise position defined by guide means cooperating with the supporting bar.

3,442,547
HANDLE DEVICE FOR NECKED CONTAINERS
William R. Skillen, London, Ontario, Canada, assignor to Somerville Industries Limited, London, Ontario, Canada
Filed Apr. 10, 1967, Ser. No. 629,557
Int. Cl. B65d *21/02, 25/28*
U.S. Cl. 294—87.2 **2 Claims**

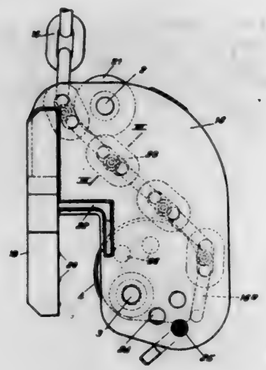


This invention provides a hand grip for carrying one or more crown capped bottles by engagement on the necks of the bottles and the under sides of the skirt portions of the crown caps. The hand grip includes members for protecting the hand aganst inadvertent contact with the skirts of the crown caps as to avoid discomfort and/or injury to the hand.

3,442,548
LIFTING DEVICE FOR LIFTING METAL SHEETS
Jean Francois Archer, La Celle-Saint-Cloud, France, assignor to Ste. Anonyme dite: STAS, Societe Technique d'Accessoires Specialises, Asnieres, Hauts-de-Seine, France
Filed Nov. 28, 1967, Ser. No. 686,218
Claims priority, application France, Jan. 4, 1967, 3,327; Apr. 17, 1967, 3,357
Int. Cl. B66c *1/42*
U.S. Cl. 294—104 **5 Claims**

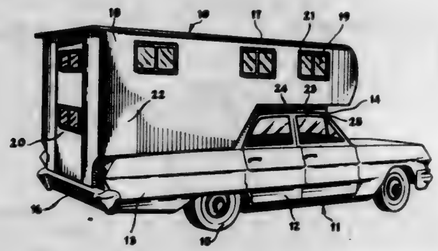
A plate-lifting device having a rotatable eccentric cam and an opposed arm or plate, both mounted on a body,

with a chain part-way round the cam to rotate it, thus seizing one or more plates between the cam and the arm,



with holes in the body or cam for insertion of a safety peg to lock the cam to the body when a plate is being lifted.

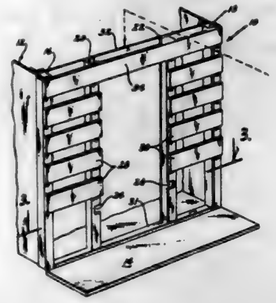
3,442,549
CAMPER
Walter J. Granger, 1110 Northview Drive, Cocoa, Fla. 32922
Filed Aug. 22, 1966, Ser. No. 573,914
Int. Cl. B60p *3/32*
U.S. Cl. 296—23 **5 Claims**



A car camper apparatus and method for placing a camper body upon a sedan type automobile, whereby the trunk lid is removed from the automobile and the camper body secured superimposed thereupon. The forward section of the camper body extends over the roof of the automobile passenger compartment and the rear section covers the luggage compartment so that the floor of the luggage compartment may be used as a floor for the camper. The camper has a rear door and may have a double bed, bunks, storage and cooking facilities, and the like.

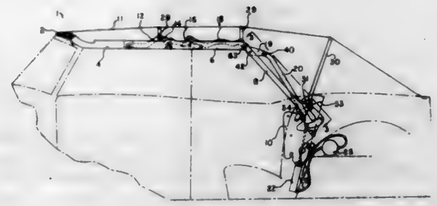
3,442,550
END GATE STRUCTURE
Orville G. Esbeck, Brayton, Iowa 50042
Filed June 6, 1967, Ser. No. 643,965
Int. Cl. B62d *25/00, 33/00;* **E06b** *11/06*
U.S. Cl. 296—50 **3 Claims**

An end gate structure for a truck or the like including a door movably mounted in a supporting frame means. The door may be moved with respect to the supporting frame so that the same may be converted into a ramp



for loading animals into the truck upon which the end gate is mounted.

3,442,551
CONVERTIBLE TOP
Robert R. Hussey, Ashtabula, Ohio, assignor to The Ashtabula Bow Socket Company
Filed Aug. 24, 1967, Ser. No. 662,930
Int. Cl. B60j *7/00, 7/08*
U.S. Cl. 296—117 **7 Claims**



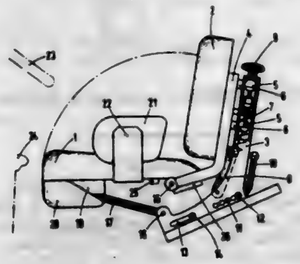
The disclosure relates to a convertible top having front and center side rails which are hingedly connected for smooth movement between a position of locked end-to-end engagement and a folded storage or crash position.

The lock comprises a hook-like projection on the center bow link which cams into engagement with a cam block rigidly mounted on the front rail with the final locking motion being accomplished by relative longitudinal motion between the front bow link and the front rail, resulting from a slot and pivot pin arrangement.

The end of the front bow link has a cam surface which the front rail follows during the opening and closing operation. This insures that the weight of the header does not flop or snap the header and front rails during either the opening of closing operation of the linkage.

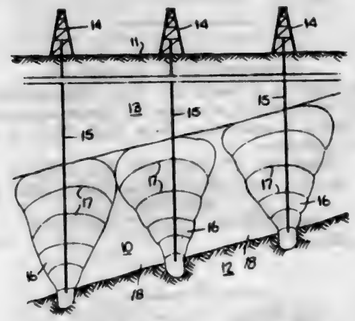
3,442,552
DRIVER'S SEAT, ESPECIALLY FOR TRACTORS OR THE LIKE
Wilhelm Lehner, Sebastian-Kneipp-Strasse 98, Amberg, Germany
Filed Mar. 22, 1967, Ser. No. 625,170
Claims priority, application Germany, Mar. 25, 1966, G 46,415
Int. Cl. A47c *1/02*
U.S. Cl. 297—334 **7 Claims**

A driver's seat especially for a tractor or the like which is easily movable away from its normal position so as to permit the driver to stand up behind the steering wheel. The seat has a seat part and a back part and the mounting means are provided which permit the seat part to be pivoted upwardly and toward the rear from the normal position to a substantially vertical position substantially in engagement with the seat part. The mounting means include a mounting frame behind the back rest and carrying the same, guide means which secure and resiliently guide the seat part on the frame in a substan-



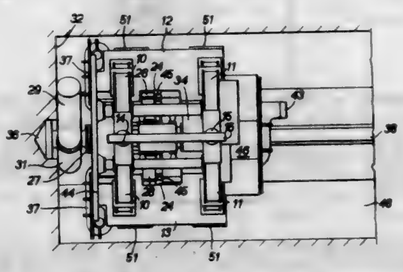
tially vertical direction, further means for mounting the rear end of the seat part on the lower end of the frame so as to be pivotable about a horizontal axis extending transverse to the longitudinal direction of the vehicle, at least one arm pivotable at its rear end on the frame and adapted to support the seat, and still further means for slidably connecting the front end of the arm to the seat near the front end thereof so as to permit the arm to pivot upwardly and downwardly together with the seat.

3,442,553
SLURRY MINING OF CARNALLITE
Kenneth J. Kutz, Salt Lake City, Utah, assignor to Texas Gulf Sulphur Company, New York, N.Y., a corporation of Texas
Filed Nov. 4, 1966, Ser. No. 592,119
Int. Cl. E21c *43/20, 43/28;* **C22b** *27/00*
U.S. Cl. 299—4 **13 Claims**



This disclosure is directed to a process for the slurry-mining of a salt bed, such as carnallite, by introducing water into said bed, thereby leaching a soluble salt (magnesium chloride) therefrom and forming a cavity. The leaching of the soluble salt leaves a less soluble salt (potassium chloride) as a slurry in the bottom of the bed, or in a sump below the bed. This less soluble salt is then removed as a slurry entrained by a substantially saturated solution of the soluble salt.

3,442,554
MACHINE FOR CUTTING A ROADWAY IN UNDERGROUND WORKINGS
Thomas Campbell Paul, Worcester, England, assignor to Dowty Meco Limited, Worcester, England, a British company
Filed Sept. 28, 1966, Ser. No. 582,581
Claims priority, application Great Britain, Sept. 28, 1965, 41,094/65
Int. Cl. E21d *9/00;* **E01g** *3/04*
U.S. Cl. 299—71 **3 Claims**



An apparatus for cutting a roadway in underground workings wherein a carriage is mounted on a framework for movement with respect thereto, and a shaft is positioned on the carriage. A pair of arms having cutting drums are carried by the shaft and project radially therefrom, with said arms being of different lengths, so as to cut a roadway wherein the radius of one part is greater than that of the other part.

3,442,555
METHOD OF MAKING A ROTARY BRUSH
Robert E. Cook, Pinckney, Mich., assignor to Jenkins Equipment Company, Inc., Dexter, Mich., a corporation of Michigan
Filed Sept. 29, 1967, Ser. No. 671,782
Int. Cl. A46b *1/00, 9/00*
U.S. Cl. 300—21 **6 Claims**



The method of making a brush including the steps of placing brush elements transversely across a ring having a V-shaped groove, forcing said brush elements into the base of said groove by winding a plurality of turns of wire around the brush elements, locking the ends of the wire with an elongated clip, and crimping the clip into the shape of an S to securely hold the brush elements in position through all positions of operation.

3,442,556
LATERAL TAKE-OFF FOR AIR CONVEYORS
Irwin von Funk, P.O. Box 157, Macungie, Pa. 18062
Filed Feb. 7, 1968, Ser. No. 703,689
Int. Cl. B65g *53/18, 53/56*
U.S. Cl. 302—28 **10 Claims**

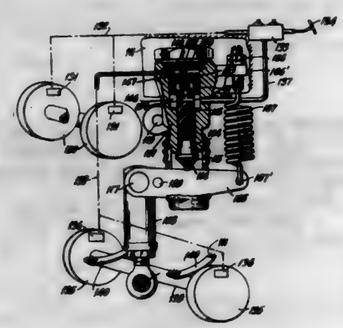
Particulate material gravity conveyed along a main chute while in a fluidized state is selectively diverted

from take-off locations through lateral outlet conduits by interrupting fluidization of the material through the main chute downstream of the take-off location. This is accomplished by sealing the lower gas chamber, from which gas flows upwardly through a gas permeable deck to fluidize



the material all along the main chute, just downstream of the take-off point. The resulting pile up of material in the main chute horizontally diverts flow into the take-off conduit within which the material may be fluidized during discharge.

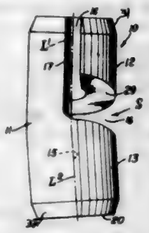
3,442,557
LOAD-RESPONSIVE BRAKE-FORCE PROPORTIONING DEVICE FOR VEHICULAR BRAKE SYSTEM
Heinrich Oberthur, Offenbach-Rumpenheim, Germany, assignor to Alfred Teves G.m.b.H., Frankfurt am Main, Germany, a corporation of Germany
Filed Oct. 11, 1967, Ser. No. 674,479
Claims priority, application Germany, Oct. 18, 1966, T 32,298
Int. Cl. B60t 8/18, 8/02
U.S. Cl. 303—22 10 Claims



A brake-force proportioning valve in which the valve housing is mounted on a vehicle body or chassis and has a differential-piston plunger (i.e., a dual-diameter piston) shiftable in a step bore of the housing to control a spring-loaded metering valve within the plunger, a control lever in the form of a horizontal bar being fulcrumed at a knife edge or roller on the plunger and being of unitary construction, a spring is adjustably tensionable to connect one end of the lever to the housing of the valve or the body while an adjustable-length anchor has an eye receiving a pintle at the other end of the lever for defining therewith a pivotable axis fixed to the axle housing which moves relative to the body upon changes in the loading thereof.

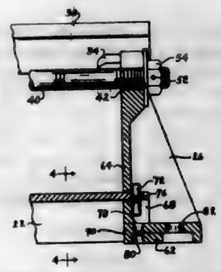
3,442,558
ROD GUIDE
Donald E. Sable, 4413 Windsor Parkway, Dallas, Tex. 75205
Continuation-in-part of application Ser. No. 551,161, May 18, 1966. This application Aug. 16, 1967, Ser. No. 661,005
Int. Cl. F16c 1/26, 29/10; E21b 17/12
U.S. Cl. 308—4 9 Claims

A guide for a sucker rod employed to actuate a pump connected in the tubing of the well whose body is formed



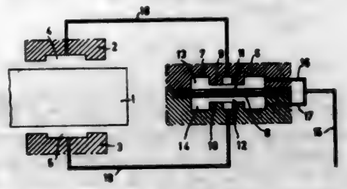
of a resilient substance and adapted to resiliently grip the rod.

3,442,559
TAKE-UP BEARING SUPPORT
Ernest A. Horvath, South Bend, and Leo T. Joyal, Mishawaka, Ind., assignors to The Reliance Electric and Engineering Company, a corporation of Ohio
Filed Mar. 14, 1966, Ser. No. 534,102
Int. Cl. F16c 13/00, 39/00, 35/00
U.S. Cl. 308—15 6 Claims



An adjustable bearing support for conveyors and the like in which an elongated base is connected to two upright end members by wedging the end members against shoulders at opposite ends of the base using a pin and tapered surface. The end members are connected by a rod above the base, which together with the base support a bearing movable longitudinally on the base for making an adjustment in the bearing assembly.

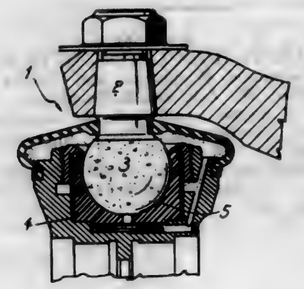
3,442,560
HYDROSTATIC BEARINGS
Jacobus Gijsbert Cornelis De Gast, Emmasingel, Eindhoven, Netherlands, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 27, 1967, Ser. No. 634,374
Claims priority, application Netherlands, June 4, 1966, 6607799
Int. Cl. F16c 1/24, 17/16, 17/18
U.S. Cl. 308—5 8 Claims



A hydrostatic bearing assembly in which a member is supported by at least two bearing members acting on it in opposite directions. A pressurized fluid is supplied to

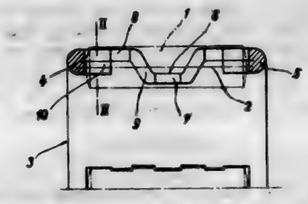
a pressure chamber located in each of the bearing members via a housing which includes a pair of pressure equalizing chambers. The bearing assembly provides a support which substantially restricts deflection of supported member.

3,442,561
ROTARY JOINTS
Edmond J. G. Henry-Biabaud, Paris, France, assignor to Societe Anonyme Andre Citroen, Paris, France, a French society
Filed July 30, 1965, Ser. No. 476,156
Claims priority, application France, Aug. 6, 1964, 984,331
Int. Cl. F16c 9/06, 23/00, 33/00
U.S. Cl. 308—72 1 Claim



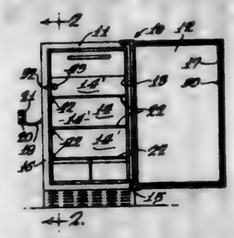
A mechanical rotary joint having a spherical rotary element with a highly polished surface acting within a spherical seating. At least one part of the polished surface has a multitude of small cavities uniformly distributed thereon, the cavities having a width and depth of between one and thirty microns and having a lubricating agent retained therein.

3,442,562
CAGE FOR CYLINDRICAL ROLLERS
Georg Schaeffler, Herzogenaurach, and Anton Teufel, Tubingen, Germany, assignors to Industriwerk Schaeffler OHG, Herzogenaurach, Germany
Filed Jan. 25, 1967, Ser. No. 611,772
Claims priority, application Germany, Feb. 17, 1966, J 30,093
Int. Cl. F16c 33/38
U.S. Cl. 308—217 3 Claims



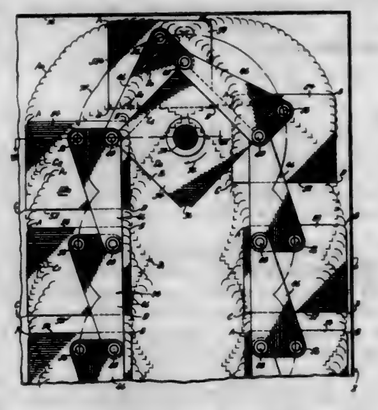
A cage for cylindrical rollers, particularly needle bearings, in which the bars of the cage which connect the two end flanges with one another and which are offset in the vicinity of their center, guide the rollers in the pitch circle, and in which the bar portions which run inside and outside of the pitch circle, retain the rollers in both radial directions.

3,442,563
CABINET STRUCTURE
Francis R. Scroop, Benton Harbor, Mich., assignor to Whirlpool Corporation, a corporation of Delaware
Filed Aug. 22, 1967, Ser. No. 662,466
Int. Cl. A47b 81/00, 77/08; E05c 7/06
U.S. Cl. 312—223 14 Claims



A refrigerator cabinet having a mechanism for preventing sealing closing of the cabinet door in the event that the refrigerator is disconnected from the electrical power supply, or in the event that the shelves are removed from the refrigerator permitting a child to be fully received within the refrigerator to possibly suffocate therein.

3,442,564
POWER OPERATED FILE CABINET
Robert D. Gutting, Topeka, Kans., assignor to Hon Industries, Inc., Muscatine, Iowa, a corporation of Iowa
Filed Dec. 23, 1966, Ser. No. 604,467
Int. Cl. A47f 3/08, 5/00; A47b 77/16
U.S. Cl. 312—268 10 Claims

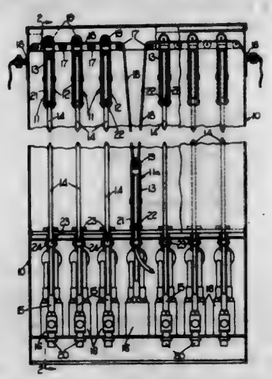


A power driven file cabinet having square sprocket wheels, carrier support chains consisting of rigid links each of an effective length corresponding to the length of the sides of the sprocket wheels, and a series of shelves pivotally suspended on successive links of the chains at pivots directly outward from the pivotal connections of the respective links to adjacent links.

3,442,565
STORAGE APPARATUS
Guy Baron Boyce, Blagdon, England, assignor to Binks-Bullows Limited
Filed July 7, 1967, Ser. No. 651,921
Claims priority, application Great Britain, July 7, 1966, 30,559/66
Int. Cl. A47b 95/00, 53/00; F16l 3/16
U.S. Cl. 312—319 2 Claims

Storage apparatus, especially for elongated articles such as hoses, which includes a housing, a plurality of spaced guides mounted in the housing and a plurality of article-supporting members which are supported by a cord which

is engaged on one side by the spaced guides and on the opposite side by the article-supporting members so that any one of said members can be moved from a stored position adjacent to said guides to a position remote from



the guides in which a loop is formed in the cord between a pair of adjacent guides, all the other article-supporting members then being supported by the cord in positions adjacent to said guides.

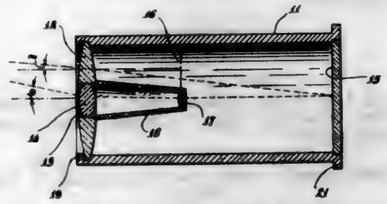
3,442,566
COLOR HOLOGRAPHY
Robert L. Forward, Oxnard, and Alexander D. Jacobson, Sherman Oaks, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Mar. 10, 1966, Ser. No. 533,357
Int. Cl. G02b *27/22*
U.S. Cl. 350—3.5 **2 Claims**



This is a color holographic system featured by a laser that simultaneously emits spatially coherent light of three different colors in a single beam. A portion of this beam of coherent light is reflected from a solid object to a color film as an object beam. Another portion of the beam is reflected from a mirror to the color film as a reference beam. These two reflected beams are recorded on color film as a separate interference fringe pattern for each color with all the colors of the separate interference fringe patterns being centered in the more sensitive spectral response portions of the color film. Consequently when a similar laser beam is directed through the developed color film to reconstruct an image of the object, a high degree of color correlation with the photographed object exists.

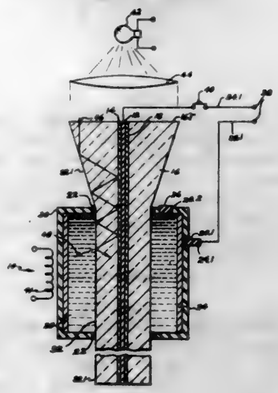
3,442,567
OPTICAL REFLECTOR TARGET
Donald H. Hansen, Williamsville, N.Y., assignor to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York
Filed Mar. 18, 1966, Ser. No. 535,433
Int. Cl. G02b *17/00, 27/30*
U.S. Cl. 350—50 **6 Claims**

An optical target constructed so that a beam of collimated light impinging thereon at one angle is returned at a proportionately different angle. The target is made up of a planar mirror and two positive lenses having different focal lengths. The lenses are positioned relative to each other and the mirror so that the optical path from one lens to the mirror and back to the other lens is equal to the sum of the focal lengths of the two lenses.



The ratio of the angle of impinging beam to the angle of the returned beam is proportional to the ratio of the focal lengths of the two lenses.

3,442,568
LIGHT-MODULATING DEVICE
Walter P. Siegmund, Woodstock, and Charles J. Koester and Clifford W. Ask, South Woodstock, Conn., assignors, by mesne assignments, to American Optical Company, Southbridge, Mass., a corporation of Delaware
Filed Nov. 22, 1965, Ser. No. 509,086
Int. Cl. G02b *5/14*
U.S. Cl. 350—96 **6 Claims**

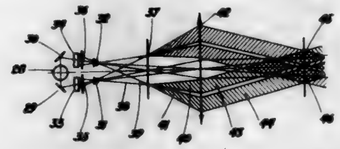


A light modulator having a relatively long and thin glass clad electrical conductor surrounded by a substantial thickness of light-transmitting high refractive index glass, a portion of the length of which is surrounded by a normally low refractive index light-transmitting Kerr effect material. Means is provided for selectively developing an electrical field through the Kerr effect material. Light is normally transmitted by total internal reflection through the high refractive index glass and is modulated by being at least partially diverted into the Kerr effect material when said electrical field is developed.

3,442,569
DEVICES FOR PRODUCING VIRTUAL IMAGES
Maurice Bonnet, Paris, France, assignor to Centre Nationale de la Recherche Scientifique, Paris, France, a corporation of France
Filed Sept. 26, 1963, Ser. No. 311,843
Claims priority, application France, Sept. 29, 1962, 910,818
Int. Cl. G02b *27/24, 27/00, 13/20*
U.S. Cl. 350—137 **11 Claims**

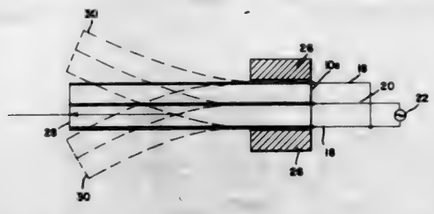
A device for obtaining virtual images of objects such as films comprises a substantially punctual optical source,

an objective, a transparent intermediate optical element acting by refraction and an optical ocular system, wherein said element comprises a glass or plastic plate having a surface formed with parallel straight cylindrical or prismatic grooves for angularly deflecting pencil beams incident to said element and such a plate having a minutely lenticular surface, such as a finely etched or ground



surface, which is covered by a thin layer of liquid, such as a silicone oil, having an index of refraction differing from that of the lenticular plate, so that said beams emerge and pass to said ocular system in a widened pattern of conical beams respectively diverging at an angle of less than 20°.

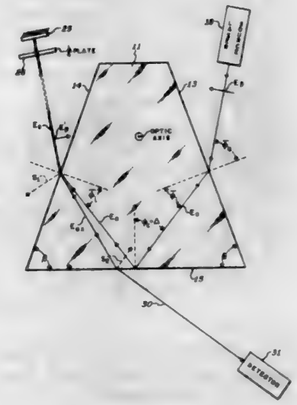
3,442,570
PIEZOELECTRIC LASER BEAM DEFLECTOR
Amos Picker, Carlsbad, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Mar. 2, 1966, Ser. No. 531,184
Int. Cl. G02f *1/34*
U.S. Cl. 350—161 **8 Claims**



1. In a light beam deflection arrangement,
a pair of light beam transmitting piezoelectric crystals arranged in surface abutting relationship,
electrical conducting means on the abutting surfaces and on opposed surfaces of the crystals,
a controllable source of electric potential,
electrical lead means from the source to the respective surfaces,
clamp means to support the crystals in cantilever fashion so that one end of the abutting crystals is free to move,
said potential source being operative to apply an electric field to said surfaces and induce controlled flexure of said one end in direct proportion to the applied field and thereby controllably deflect a light beam being transmitted through the crystals.

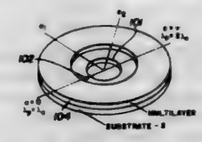
3,442,571
PRISMATIC MEMBER FOR DIFFERENTIALLY CHANGING DIRECTIONS OF LIGHT BEAMS INCIDENT THEREON
Irving Itzkan, Great Neck, N.Y., assignor to Sperry Rand Corporation, a corporation of Delaware
Filed Feb. 8, 1966, Ser. No. 525,871
Int. Cl. G02f *1/26*
U.S. Cl. 350—157 **10 Claims**

1. An optical device for differentially changing the directions of propagation of orthogonal plane polarized light beams comprising,
a transparent prismatic member that exhibits birefringent effects to orthogonal plane polarized light beams, said member having a base surface and first and second oppositely inclined side surfaces that join said base surface to form respective acute corner angles of said prismatic member,



said corner angles and the indices of refraction presented by said member to orthogonal plane polarized light beams being proportioned so that a first plane polarized light beam transmitted through said first side surface is totally internally reflected from said base surface and passes through said second surface polarized in its plane of incidence at its polarization angle and a second orthogonal plane polarized light beam that propagates between said second and base surfaces, and is coincident with said first beam at one of the two last-named surfaces, is refracted by an angle different from that of said first beam.

3,442,572
CIRCULAR VARIABLE FILTER
Rolf F. Illsley, Alfred J. Thelen, and Joseph H. Apfel, Santa Rosa, Calif., assignors to Optical Coating Laboratory, Inc., Santa Rosa, Calif., a corporation of California
Filed Aug. 25, 1964, Ser. No. 391,928
Int. Cl. G02b *5/28;* **C23c** *13/08;* **B41m** *1/12*
U.S. Cl. 350—166 **5 Claims**

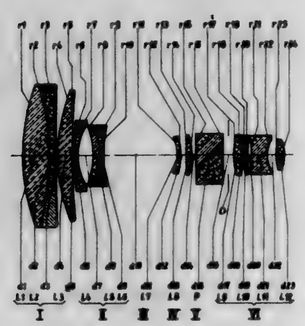


Circular variable filter having a multilayer interference coating with an optical thickness which changes linearly along a circle concentric with the axis of rotation.

3,442,573
VARIFOCAL CINEMATOGRAPHIC OBJECTIVE FOR LARGE-FRAME SIZES AND INCLUDING A FOUR-COMPONENT FORWARD LENS GROUP AND A FOUR-LENS REAR GROUP
Karl Macher, Bad Kreuznach, Germany, assignor to Jos. Schneider & Co., Bad Kreuznach, Germany
Filed Sept. 21, 1965, Ser. No. 488,957
Claims priority, application Germany, Sept. 25, 1964, Sch 35,848
Int. Cl. G02b *1/00, 11/34*
U.S. Cl. 350—176 **2 Claims**

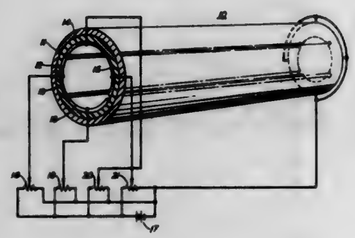
A varifocal optical system for motion-picture cameras designed to provide large-frame sizes, e.g., of 4.22 x 5.69

mm. for 8 mm. film, and having a wide varifocal range. The system includes a forward lens group with a positive



fixed first lens, a movable negative second lens, a movable negative third lens and a positive fourth lens. The rear-lens group has four air-spaced lenses.

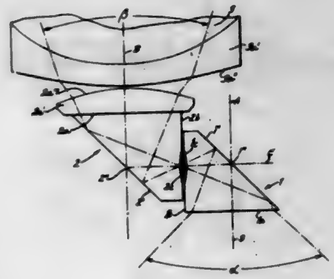
3,442,574
ELECTROMAGNETIC WAVE FOCUSER-DEFLECTOR
Enrique A. J. Marcatili, Rumson, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Sept. 16, 1965, Ser. No. 487,677
Int. Cl. B29d *1/06*; G02b *7/02*; G01j *1/20*
U.S. Cl. 350—179 11 Claims



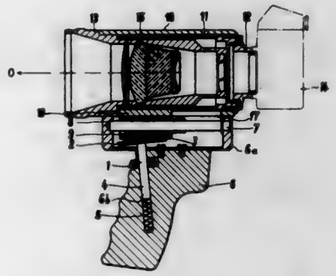
By providing four, symmetrically located and independently adjustable density control elements about the periphery of a gaseous waveguide, an optical beam can be simultanously focused, and deflected along two mutually perpendicular directions. This provides a convenient means for making correction along the wavepath to overcome gravitational effects and lens aberrations. By means of a feedback arrangement, beam displacement corrections can be made automatically.

3,442,575
OPTICAL SCANNING SYSTEM
Seymour Rosin, Massapequa, N.Y., assignor to Bell Aerospace Corporation
Continuation-in-part of application Ser. No. 366,566, May 11, 1964. This application Mar. 4, 1965, Ser. No. 440,219
Int. Cl. G02b *17/04*
U.S. Cl. 350—202 11 Claims

An optical system for scanning terrain and like models and having an unusually large angular field of view. The large field of view is achieved by the combination of an objective, a stationary prism and a rotatable prism, with positive power being introduced between the stationary prism and the objective with compensatory negative power introduced between the prisms in the region of the center point of the limiting chief rays of the system.



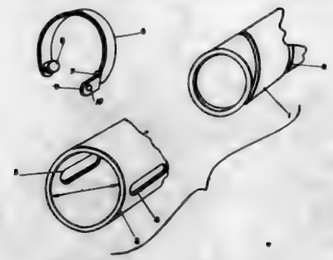
3,442,576
OPTICAL INSTRUMENT WITH MOVABLE LENS HOLDER
Kurt Werner, Munster-Sarmsheim, Germany, assignor to Fa. Jos. Schneider & Co., Bad Kreuznach, Rhineland, Germany, a corporation of Germany
Filed June 6, 1966, Ser. No. 555,560
Claims priority, application Germany, June 10, 1965, Sch 37,204
Int. Cl. G02b *7/10*
U.S. Cl. 350—255 7 Claims



A tubular lens holder and a tubular extension of a camera housing, coaxially nested for relative sliding motion, are provided with normally interengaging coupling elements in the form of a rack and a spirally grooved disk engaging the rack teeth; the disk is mounted on a retractable stem, lodged in a handle rigid with the outer tube, which extends generally perpendicularly to the tube axis and carries a milled knob to permit rotation of the stem as well as disengagement of the disk from the rack upon a longitudinal outward shift of the stem.

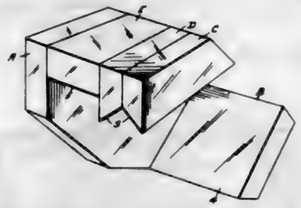
3,442,577
SLIDE PROJECTOR FOCUSING MECHANISM
Ronald James Purvey, Shirley, Solihull, England, assignor to The Rank Organisation Limited, London, England, a British company
Filed Dec. 16, 1966, Ser. No. 602,277
Claims priority, application Great Britain, Dec. 17, 1965, 53,695/65
Int. Cl. G03b *21/00*
U.S. Cl. 350—255 5 Claims

A focusing mechanism including a sleeve, a lens mount slidably movable within the sleeve, and a detent engaging a helical groove in the lens mount. The mechanism also includes a reaction pad which is so dimensioned that it



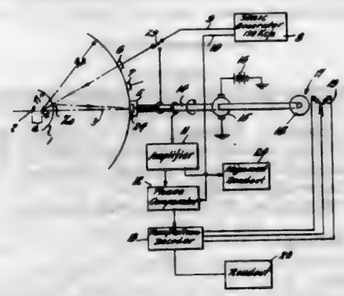
cannot enter the helical groove. Both the detent and the pad are carried by an arcuate spring clip so that there are no resultant side loads on the lens mount.

3,442,578
OPTICAL DEVIATORS
Allister L. Baker, Denville, N.J., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed May 6, 1966, Ser. No. 548,327
Int. Cl. G02b *5/04*
U.S. Cl. 350—286 4 Claims



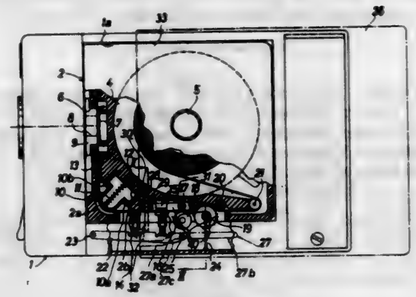
The present optical deviator is made of fused quartz to obtain a very low distortion of the basic components. The reflective surfaces are coated externally such that the light rays do not enter the basic components. Therefore, the light rays are not distorted inside of the material, and the quartz components themselves are not distorted due to temperature changes.

3,442,579
APPARATUS FOR MEASURING AND PLOTTING THE SURFACE CONTOUR OF THE EYE BY THE USE OF SONIC COMPRESSIONAL WAVES
Michael A. Friedberg, 1400 Squirrel Hill Ave., Pittsburgh, Pa. 15217
Filed Nov. 29, 1965, Ser. No. 510,284
Int. Cl. A61b *3/10*
U.S. Cl. 351—6 4 Claims



Sonic compressional waves are projected against the surface of the eye from a point of transmission which is continuously rotated about the optic axis of the eye and one reflected from the eye surface to a point on the optic axis where they are detected. The phase displacement of the detected waves is a function of the distance of the eye surface from a hemispherical reference platform including the focal point and the path of rotation of the transmittal point, and this phase displacement is utilized to establish an analogue signal which is a function of the deviation of the actual eye surface contour from a predetermined symmetrical configuration.

3,442,580
MOTION PICTURE CAMERA OR PROJECTOR FOR FILM WITH SOUND TRACK
Alfred Winkler, Munich, Germany, assignor to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany
Filed Apr. 28, 1966, Ser. No. 546,030
Claims priority, application Germany, May 3, 1965, A 49,084
Int. Cl. G03b *31/02*
U.S. Cl. 352—29 4 Claims

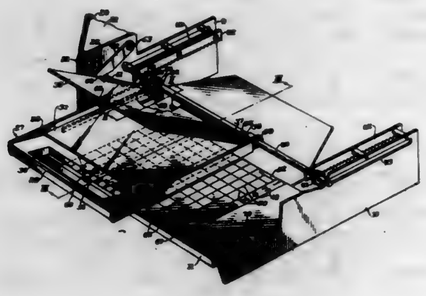


A motion picture camera or projector which comprises a housing whose chamber removably accommodates a film cartridge provided with a film channel including two mutually inclined portions, with a window adjacent to one of the channel portions, and with a cutout adjacent to the other channel portion. The cartridge accommodates coaxial supply and takeup spools and a pressing plate which urges the film against the window. A sound head which is mounted in the housing extends into the cutout of the cartridge and the latter further comprises a detent which engages the film in the channel at a point which is distant from the window when the cartridge is removed from the housing. A disengaging device automatically disengages the detent from the film when the cartridge is properly inserted into and sealed in the chamber.

3,442,581
LOW COST MICROFICHE READER
Louis A. Smitzer, Chicago, and Robert F. Porazinski, Norridge, Ill., assignors to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Nov. 9, 1966, Ser. No. 593,107
Int. Cl. G03b *23/12*
U.S. Cl. 353—27 8 Claims

A flat film viewing apparatus having a microfiche holder frame selectively movable across an optical path from a light source to a viewing screen for projection of the selected images from the film onto the screen. Mounted on the holder frame is a film clamping plate consisting of an upper and a lower transparent plate hinged along one edge. A plate lifting mechanism comprising an arm attached to the upper transparent plate and a hook arm pivotably attached to the housing automatically opens and closes the film clamping plate on the frame for loading and unloading purposes when the holder frame is

moved to its extreme forward position. To facilitate locating the respective microfilm image to be projected,

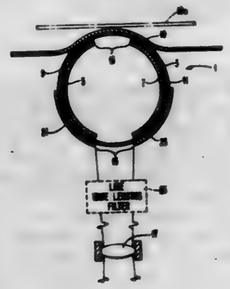


and for retaining the film-carrying frame in selected positions, an indexing system and a manually releasable detent and socket mechanism is provided, respectively.

3,442,582
LAMP ARRANGEMENT FOR DOCUMENT SCANNING AND MODIFIED LAMP

Roy J. Lahr, Penfield, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Dec. 7, 1966, Ser. No. 599,971
Int. Cl. G03b *21/28*
U.S. Cl. 353—29 19 Claims



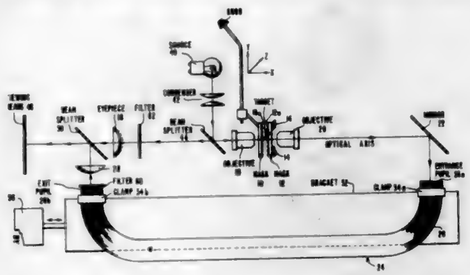
A fluorescent lamp with internal and external shielding, and having an optical path through the lamp where two apertures are left in the shielding. One aperture is positioned very close to a document to be illuminated and viewed, and a lens is positioned to view the document through the other aperture.

3,442,583
MASK ALIGNMENT SYSTEM USING COHERENT FIBER BUNDLE

Hans R. Rottmann, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Dec. 19, 1966, Ser. No. 602,735
Int. Cl. G03b *21/26, 21/28*
U.S. Cl. 353—34 7 Claims

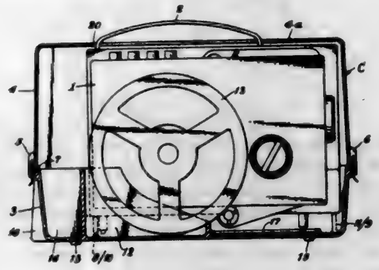
A mask alignment system and technique particularly directed to the alignment of masks used in semiconductor integrated circuit fabrication in order to obtain alignment accuracy better than $\pm 40 \times 10^{-6}$ inches. Two microscopes are provided, one for each of the masks, and a coherent fiber bundle is placed in the optical path of one of the microscopes, thereby enabling the attainment of a proper depth of focus for each mask image and with a high degree of resolution so that the needed accuracy can be obtained.



3,442,584
CARRYING CASE FOR A MOTION PICTURE PROJECTOR

Fritz Krumbein and Dietrich Becker, Stuttgart-Mohringen, and Ulrich Schöttle, Stuttgart, Germany, assignors to Zeiss Ikon Aktiengesellschaft, Stuttgart, Germany, a corporation of Germany

Filed Mar. 9, 1966, Ser. No. 533,027
Claims priority, application Germany, Apr. 1, 1965, Z 9,789
Int. Cl. G03b *21/14*
U.S. Cl. 353—119 4 Claims



A carrying case for a motion picture projector comprising separable lower and upper parts of which the lower part which receives the lower portion of the projector, after the removal of the projector therefrom, may be used as a projection screen when placed vertically on one of its narrow end walls, while the upper part may serve as a raised support for the projector which is adapted to be placed on the upwardly facing top wall of the upper part when the latter with its lower horizontal edge rests on a supporting surface which also supports the vertically positioned lower part.

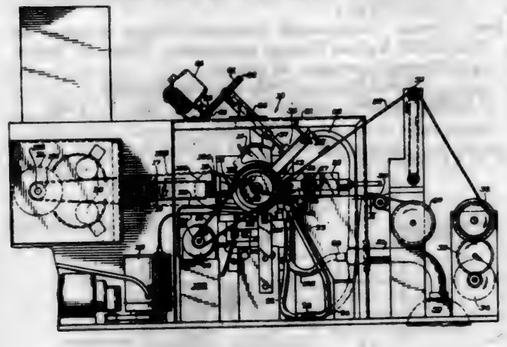
3,442,585
CONTINUOUS ROTARY ELECTROSTATOGRAPHIC APPARATUS

Louis A. Smitzer, Chicago, Len A. Tyler, Evanston, Walter Hines, Roselle, and William E. Bixby, Deerfield, Ill., assignors to Bell & Howell Company, Chicago Ill., a corporation of Illinois

Filed Oct. 23, 1965, Ser. No. 503,654
Int. Cl. G03g *15/04*
U.S. Cl. 355—3 6 Claims

1. Electrostatographic apparatus comprising
a rotatable drum having radial side walls in spaced parallel relationship and
a circumferentially continuous peripheral surface of photoconductive material on said drum,

said drum having a sealing disk on each said radial side wall made of insulator material to prevent

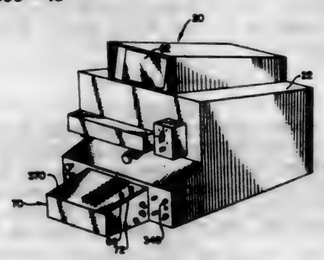


ions from running out to the edges of said peripheral surface.

3,442,586
FILM POSITIONING DEVICE

Stanley F. Coil, Washington Court House, and William R. Horst, Dayton, Ohio, assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

Filed Oct. 14, 1966, Ser. No. 586,746
Int. Cl. G03b *27/70*
U.S. Cl. 355—43 12 Claims



A positioning device including a carrier movable in a plane along x and y coordinates at right angles to each other. The specific x and y coordinates at which the carrier is to be positioned away from a home position are entered on a keyboard. Upon actuation of a positioning key, abutment members are positioned in the path of the carrier, and positioning means move the carrier away from the home position against said abutment members, so as to stop and position the carrier at the x and y coordinates entered upon the keyboard. Automatic means are also provided for incrementally indexing the carrier along successive coordinates in the direction of the x coordinate.

3,442,587
MATCH STEPPING CAMERA AND METHOD FOR MATCHING REGISTRATION AND REDUCTION OF STEPPED PHOTOGRAPHIC IMAGES TO EXISTING PATTERNS ON SEMICONDUCTORS

William C. Croucher, Englewood, and Willis F. Estep and Gilbert H. Ross, Denver, Colo., assignors to Martin-Marietta Corporation, New York, N.Y., a corporation of Maryland

Filed Dec. 6, 1965, Ser. No. 511,691
Int. Cl. G03b *27/44*
U.S. Cl. 355—54 12 Claims

An apparatus and method for making a high resolution photographic plate which is subsequently used in producing a mask used in the vapor deposit process for formulation of multiple circuit patterns in a prearranged array upon an undiced semi-conductor substrate. A common mounting member is provided for mounting a photosensitive plate and a reference member carrying reference indicia. A negative bearing an image of a circuit pattern is supported in spaced relationship to the plate. A microscope is mounted so that its reticle can be aligned with one of the reference indicia on the reference member. This alignment effects the proper alignment between the

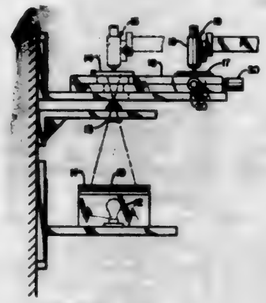
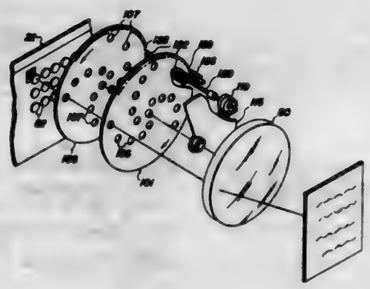


image on the negative and the photosensitive plate. The plate is then exposed to the image to form a first latent image. The common support is then adjusted until the reticle of the microscope is aligned with second reference indicia which simultaneously accurately aligns the image and the plate to form a second latent image on the plate. A plotting mechanism including a pantograph linkage is connected to the common mounting member so that an operator can keep track of the location and number of latent images formed on the plate.

3,442,588
MICROFILM RECORDING APPARATUS

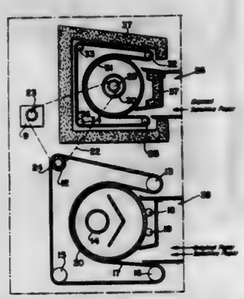
Gino F. Squassoni, Pittsford, Herman A. Hermanson, Fairport, and Alan F. McCarroll and Egon Zurovskis, Rochester, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Dec. 15, 1966, Ser. No. 601,883
Int. Cl. G03b *27/44*
U.S. Cl. 355—54 10 Claims



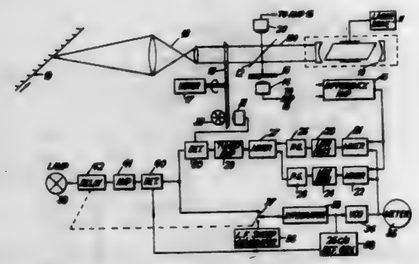
An apparatus for recording a stack of documents onto a light sensitive material which is in the form of a microfilm sheet to produce a microfiche. An optical system collimates light rays of each document recorded onto an array of imaging lenses positioned to focus a full frame image on the microfilm sheet. An aperture mechanism is selectively indexed to admit light rays to the imaging lenses to record in a predetermined pattern.

3,442,589
SENSITIZED PAPER DEVELOPMENT DEVICE
Toshio Ishikawa, Kadoma, and Koji Noda, Osaka, Japan, assignors to Minolta Camera Kabushiki Kaisha, Osaka, Japan, a corporation of Japan
Continuation-in-part of application Ser. No. 399,784, Sept. 28, 1964. This application May 16, 1967, Ser. No. 638,898
Claims priority, application Japan, June 25, 1964, 39/35,973
Int. Cl. G03b 27/02
U.S. Cl. 355—106 5 Claims



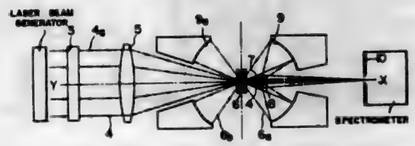
An apparatus for heat development of positive sensitized paper which exposes sensitized paper first to a light source and then to a heat source. An electric curcuit in the device simultaneously controls both the velocity of the paper moving past both sources and the developing temperature.

3,442,590
DOPPLER VELOCITY MEASURING APPARATUS
David Anthony Neish and Stephen Charles Lauder Botcherby, London, England, assignors to Decca Limited, London, England, a British company
Filed Sept. 24, 1965, Ser. No. 489,830
Claims priority, application Great Britain, Sept. 28, 1964, 39,374/64
Int. Cl. G01p 3/36, 3/68
U.S. Cl. 356—28 3 Claims



A Doppler velocity measuring apparatus using a laser beam in which a rotating chopper disc is disposed in the path of the laser beam to a moving object. Light from the laser is mixed with light reflected from the object. The resultant is received by a frequency tracking loop which includes a phase detector operating at the frequency of the modulation provided by the disc. The phase detector controls a voltage controlled oscillator forming part of the loop.

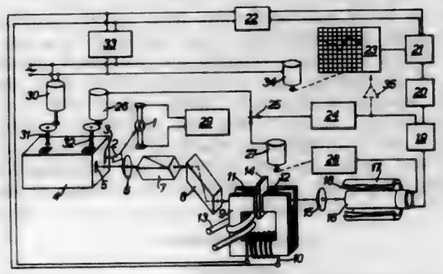
3,442,591
APPARATUS FOR MEASURING THE RAMAN EFFECT OF SAMPLES OF INFINITESIMAL QUANTITIES
Iwao Ogura, Kodaira-shi, Tokyo-to, Japan, assignor to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan
Filed Mar. 3, 1966, Ser. No. 531,499
Claims priority, application Japan, Mar. 6, 1965, 40/12,979
Int. Cl. G01j 3/44
U.S. Cl. 356—75 2 Claims



Apparatus for measuring the Raman effect of samples of infinitesimal quantities in which a laser beam is focussed onto a sample to generate Raman light therefrom, and a reflecting system is positioned both to intercept the Raman light and direct it to a spectrometer and to reflect the laser beam back through the sample to the laser beam generator.

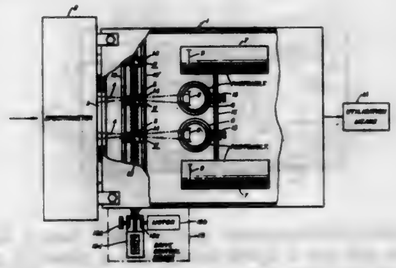
The reflecting system is constituted by two opposed concave mirrors, disposed on opposite sides of the sample and a concave mirror and a convex mirror arranged in that order between the sample and that concave mirror which is located on the side of the sample closer to the spectrometer.

3,442,592
METHOD AND APPARATUS FOR THE MEASUREMENT OF MAGNETIC CIRCULAR DICHROISM
Marc Grosjean, Paris, France, assignor to Roussel—UCLAF, Paris, France, a French body corporate
Filed Aug. 10, 1966, Ser. No. 571,628
Claims priority, application France, Aug. 13, 1965, 28,307
Int. Cl. G01j 3/04
U.S. Cl. 356—80 14 Claims



A method and apparatus for measuring magnetic circular dichroism. A beam from a light source is passed through a monochromator, a polarizer and a quarter-wave plate in order to produce monochromatic light of fixed circular polarization. The beam of fixed circular polarization is then passed through a sample material and through a modulator where it is subjected to an alternating magnetic field oriented parallel to the direction of the beam. The modulated beam is received by a photomultiplier which produces an electrical output proportional to the intensity of the beam. The alternating frequency portion of the signal is detected as representative of the magnetic circular dichroism of the sample substance at that particular frequency of the beam.

3,442,593
POSITIONING APPARATUS FOR WAVELENGTH GATING DEVICES IN SPECTROSCOPIC SYSTEMS
Joseph Marcovecchio, North Plainfield, and Arthur J. Mitteldorf, Scotch Plains, N.J., assignors to Spex Industries, Inc., Metuchen, N.J., a corporation of New Jersey
Filed Dec. 6, 1965, Ser. No. 511,616
Int. Cl. G01j 3/42
U.S. Cl. 356—96 15 Claims

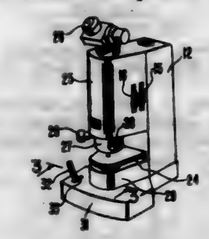


8. In a spectroscopic system having a light-tight polychromator enclosure with an entrance aperture for passing a spectral bundle from a spectrometer into the polychromator enclosure, said enclosure comprising a plurality of elements each having a slit section for gating prescribed wavelengths of said spectral bundle;
first and second guide rods each having a longitudinal axis;
a plurality of carriages for carrying said gating slit elements along said longitudinal axes of said rods, each of said carriages comprising a support device having an upper surface structure supporting an individual one of said elements, a first compartment for containing said first rod and a second compartment for containing said second rod;
transporting means mounted below said carriages for selectively and exclusively moving any one of a selected one of said carriages along said longitudinal axes of said first and second rods;
and means located outside of said polychromator enclosure for operating said transporting means to move a selected one of said carriages along said longitudinal axis of said rods.

9. The invention set forth in claim 8 wherein each of said carriages further comprises
a spring clamp member,
a threaded fastener fastening said clamp member to said support device whereby frictional forces are generated between said first rod and said clamp member and between said first rod and said first compartment as well as between said second rod and said clamp member and between said second rod and said second compartment.

3,442,594
MULTIPLE BEAM INTERFEROMETER
Charles D. Minard, Palo Alto, and Arthur B. Francis, Los Altos Hills, Calif., assignors to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Aug. 11, 1966, Ser. No. 571,811
Int. Cl. G01b 9/02
U.S. Cl. 356—109 11 Claims

A multiple beam interferometer having a spring-loaded platen for maintaining the specimen in contact with an optical flat under constant pressure. A lever is provided for withdrawing the platen from the flat for insertion or removal of the specimen and for releasing the platen which then moves the specimen into contact with the flat. A velocity brake controls the speed at which the platen



approaches the optical flat. A second brake provides enough friction to hold the platen in a position removed from the optical flat until the lever is moved to permit the platen to move the specimen into contact with the flat.

3,442,595
MULTIPLE PEN HOLDER
Donald N. Dumas, 3702 Trafalgar St., New Orleans, La. 70119
Filed Jan. 12, 1968, Ser. No. 697,495
Int. Cl. B43k 27/04, 27/08, 31/00
U.S. Cl. 401—35 7 Claims



A holder mounting a plurality of pens for simultaneous use. The holder includes a pair of clamp plates positionable on opposite sides of the pens. Each clamp plate has vertically elongated, spaced slots corresponding to the number of pens. Screw elements carried by each pen have threaded end portions projecting into corresponding slots in each clamp plate. Nuts threaded onto the threaded end portions of the screw elements fix the clamp plates to the pens in clamping relation. Each pen can be raised or lowered relative to another, by loosening the nuts and moving the pen relative to the vertical slots in each clamp plate, and then retightening the nuts. In this manner, the distance between the points of each pen can be varied.

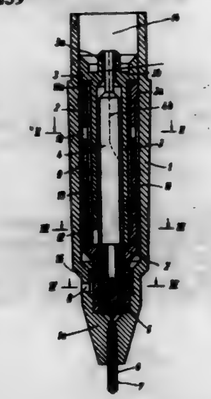
3,442,596
MECHANICAL PENCIL OF THE PUSH-OUT TYPE
Osamu Tsukahara, Tokyo, Japan, assignor to Dainihon Bunge Kabu Shikigaisha, also known as The Japan Stationery Co., Ltd., Tokyo, Japan, a corporation of Japan
Filed Mar. 15, 1966, Ser. No. 534,303
Claims priority, application Japan, June 29, 1965, 40/52,645
Int. Cl. B43k 21/22
U.S. Cl. 401—84 2 Claims



In a mechanical pencil of the push-out type, a lead retraction prevention member is provided which continu-

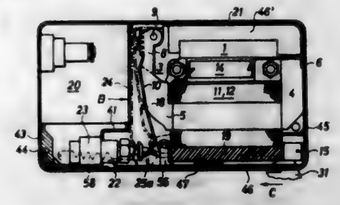
ously supports the lead from its point of feed to the open end of the pencil.

3,442,597
FOUNTAIN PEN
Heinrich Hebborn, 2 Am Romerbad, and Walter Anweiler, 9 Haydnstrasse, both of Heidelberg, Germany
Filed Aug. 11, 1966, Ser. No. 571,802
Claims priority, application Germany, Aug. 12, 1965, H 56,843; Jan. 19, 1966, H 58,276
Int. Cl. B43k 1/10, 1/06, 5/16
U.S. Cl. 401—259 9 Claims



A fountain pen for a cartridge ink supply includes two annular capillary chambers surrounding the ink supply conduit, these two chambers providing communication between the ink supply and atmosphere through openings disposed at successive alternate ends of the respective passages thereby preventing leakage of ink.

3,442,598
GAS LIGHTER WITH ELECTRIC SPARK IGNITION
Richard Haisa, 7061 Baltmannsweiler, near Esslingen, Germany
Filed Dec. 29, 1967, Ser. No. 694,485
Claims priority, application Germany, Dec. 31, 1966, H 61,450
Int. Cl. F23q 3/01
U.S. Cl. 431—255 16 Claims



A small electromagnetic pocket lighter having an induction coil and a lighter casing with a pivotable cover which by its pivoting movement operates the high-voltage ignition means and in its closed position fits closely around these means and carries elements for actuating the same. For making the lighter as small as possible, the induction coil is enclosed by a prefabricated insulating jacket which also serves as a support of other essential parts of the lighter.

CHEMICAL

3,442,599
ANTHRAQUINONE DYES FOR DYEING LIVE HUMAN HAIR AND KERATINIC FIBERS
Gregoire Kalopissis, Paris, Jack Bertrand, Tremblay-les-Gonesses, and Andree Bugnat, born Ormancey, Boulogne-sur-Seine, France, assignors to Societe Anonyme dite: L'Oreal, Paris, France
No Drawing. Filed Jan. 18, 1965, Ser. No. 426,366
Claims priority, application France, Jan. 27, 1964, 961,661
Int. Cl. A61k 7/12
U.S. Cl. 8—10.1 12 Claims

This invention is directed to dyeing compositions containing 1,4-diamino-5-substituted aminoanthraquinones for dyeing live human hair and keratinic fibers at ambient temperatures.

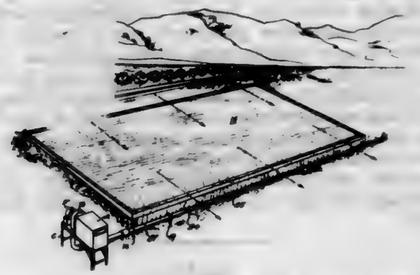
3,442,600
DYEING AND PRINTING FIBERS OF NATURAL AND SYNTHETIC POLYAMIDES
Manfred Daeuble, Frankenthal, Pfalz, and Klaus Dieck, Hans Heinrich, Heinz-Guenther Witsch, and Dietmar Theilig, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen am Rhine, Germany
No Drawing. Filed Mar. 10, 1966, Ser. No. 533,243
Claims priority, application Germany, Mar. 18, 1965, B 81,037
Int. Cl. D06p 5/02, 3/24, 1/68
U.S. Cl. 8—54 8 Claims

1. A process for dyeing and printing fibers of natural or synthetic polyamides by application of an aqueous solution which contains (a) at least one anionic dye and (b), in 1000 parts by weight, 5 to 60 parts by weight of at least one anion-active dyeing assistant to the fibers at a temperature which is lower than the absorption temperature of all the dyes present, said anion-active dyeing assistant being a water-soluble salt of a sulfuric acid hemiester of an aliphatic alcohol having ten to twenty carbon atoms, of a sulfuric acid hemiester of an adduct of an alkylphenol having six to twelve carbon atoms in the alkyl radical to a 1 to 5 molar amount of ethylene oxide, of an alkyl or alkylaryl sulfonic acid with ten to twenty carbon atoms or of N-acyltaurines having 10 to 20 carbon atoms in the acyl radical, and finishing off the dyeing or print by steaming with or without treatment with a hot aqueous acid liquor, wherein the dye solution also contains in each each 1000 parts by weight: (c) 5 to 30 parts by weight of at least one adduct of 2 to 8 moles of ethylene oxide to 1 mole of an aliphatic alcohol having six to eighteen carbon atoms or of 2 to 6 moles of ethylene oxide to 1 mole of an alkylphenol having six to fifteen carbon atoms in the alkyl radical; and (d) 5 to 40 parts by weight of at least one monophenyl ether or mononaphthyl ether of ethylene glycol or diethylene glycol which may bear on the aromatic nucleus a halogen atom, a hydroxyl group, a phenyl group, an alkyl group having up to five carbon atoms or an alkoxy group having up to five carbon atoms.

3,442,601
PROCESS FOR PRINTING TEXTILE MATERIALS OF NATURAL OR REGENERATED CELLULOSE WITH REACTIVE DYESTUFFS
Horst Homuth, Ludwigsburg, Erich Feess, Frankfurt am Main, and Wolfram Schiddo, Kelkheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed Apr. 8, 1966, Ser. No. 541,129
Claims priority, application Germany, Apr. 17, 1965, F 45,848
Int. Cl. D06p 1/02
U.S. Cl. 8—62 1 Claim

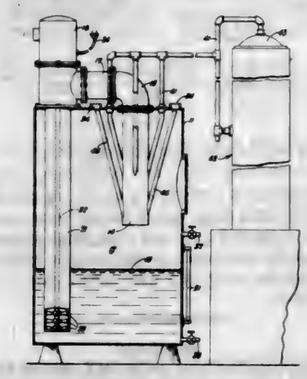
Reactive dyestuffs fixed fast on natural and regenerated cellulose textile materials by printing same, drying, padding the print in an aqueous alkaline medium, and subsequently exposing the printed textile material to a passage of air at a temperature of 10° to 25° C.

3,442,602
METHOD AND MECHANISM FOR DEODORIZING POLLUTED ATMOSPHERIC AIR
Charles C. Diehl, 904 Ruth St., Belmont, Calif. 95526
Filed July 9, 1964, Ser. No. 381,442
Int. Cl. A61b 9/04
U.S. Cl. 21—53 5 Claims



A method and apparatus for deodorizing a mass of polluted, malodorous, wind-borne atmospheric air emanating from an industrial installation, which method comprises injecting transversely into the stream of polluted air a plurality of high velocity jets of deodorant fluid, said injection taking place on the downward side and close to said industrial installation.

3,442,603
METHOD AND APPARATUS FOR PURIFYING GASES
Anthony M. Lazaros, 20 Monroe St., San Francisco, Calif. 94108
Filed Oct. 13, 1965, Ser. No. 495,510
Int. Cl. B01d 53/34
U.S. Cl. 23—2 9 Claims

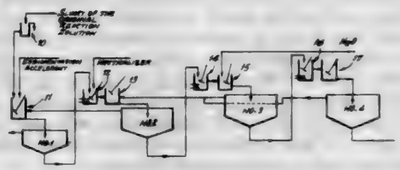


1. A method of decontaminating exhaust gases comprising the steps of continuously passing a decontaminating liquid through an elongated conduit in filling relation thereto while discharging such liquid into a closed chamber for free fall from the conduit, drawing exhaust gases to be decontaminated into said liquid in said conduit by Venturi action of the flowing liquid, whereby particles in said gases are entrained in said liquid and said gases become decontaminated, continually venting the decontaminated gases to the atomsphere, and establishing a suction in the chamber adjacent the place of said venting by Venturi action from the moving liquid in the conduit.

3,442,604
STABILIZED PHOSPHATE AND DENTIFRICE COMPOSITIONS AND PROCESS FOR PRODUCING SAME
Raymond Anthony Smith, Walsall, and John Thomas Dixon, Smethwick, England, assignors to Albright & Wilson (Mfg.) Limited, Oldbury, Warwickshire, England, a British company
No Drawing. Filed Apr. 25, 1967, Ser. No. 633,431
Claims priority, application Great Britain, May 18, 1966, 22,202/66; Aug. 2, 1966, 34,624/66
Int. Cl. C01b 25/32
U.S. Cl. 23—108 10 Claims

Phosphate salts of metal of group II of the periodic table, especially alkaline-earth metal salts such as dicalcium phosphate, are stabilized against hydrolysis by the incorporation therein of a phosphonic acid of the general formula Z—$PO(OM)_2$ wherein Z is a $(MO)_2OP{\cdot}CRX{\cdot}$ or $R_1R_2N{\cdot}CR_3R_4{\cdot}$ wherein R is an alkyl group containing up to 11 carbon atoms and X is an OH or NH_2 group; R_1, R_2, R_3 and R_4 are each hydrogen or alkyl groups and may be the same or different, or R_1 and/or R_2 may be $—CR_3R_4{\cdot}PO(OH)_2$ or alkyl ether groups; and M is a hydrogen.

3,442,605
CONTINUOUS COUNTER-CURRENT WASHING SYSTEM BY THICKENER METHOD
Matajiro Osaka, Izumi-gun, Toyama-ken, Hidetaka Uoda, Shinminato-shi, Shigeo Horii, and Minoru Okuda, Toyama-shi, Japan, assignors to Fuji Kagaku Kogyo Kabushiki Kaisha, Toyama-ken, Japan, a company of Japan
Filed July 16, 1965, Ser. No. 472,605
Int. Cl. C01b 33/22, 33/26
U.S. Cl. 23—110 3 Claims



Materials of the group consisting of magnesium aluminosilicates, magnesium trisilicate and aluminum silicates are purified by adjusting the pH of the reactant mixture therefor in colloidal suspension form to respective values of 6.5 to 10, 7.5 to 9.5 and 5.0 to 7.0, adding caustic starch to the suspension as a precipitation promoting agent to precipitate a sludge containing the respective silicate, subjecting the sludge to counter current washing and drying the sludge.

3,442,606
REMOVAL OF FLUORINE FROM ALUMINA BY STEAM
Kizhakke Govind Hrishikesan, Little Rock, Ark., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Feb. 7, 1967, Ser. No. 614,420
Int. Cl. C01f 7/00; B01d 15/06
U.S. Cl. 23—142 4 Claims

The fluorine content of alumina, particularly ceramic grade alumina, is reduced to as little as 20 parts per million by calcining alumina hydrate in the presence of steam at a temperature above about 2200° F., preferably at about 2500° F. in a rotary kiln.

3,442,607

ANTIMONY TETROXIDE PRODUCTION

Harry Ladenheim, Philadelphia, and Martin H. Ziv, Springfield, Pa., assignors to Air Products and Chemicals, Inc., Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Apr. 13, 1966, Ser. No. 542,215
Int. Cl. C01b 27/00
U.S. Cl. 23—144 9 Claims

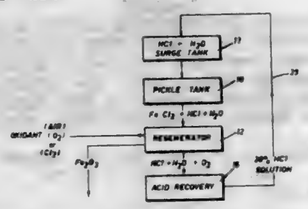
1. A method of producing pure antimony tetroxide comprising, reacting antimony trioxide with nitric acid of at least 45 weight percent concentration and in stoichiometric excess of the amount required for conversion of the animony trioxide to animony tetroxide for a time period of at least four hours at a temperature of at least 100° C. to obtain conversion of the antimony trioxide to antimony tetroxide, and thereafter separating and recovering substantially pure antimony tetroxide.

3,442,608

REGENERATION OF WASTE PICKLE LIQUORS

Ramon Leonard Addinall, Stoney Creek, Ontario, and Robert J. Milbourne, Burlington, Ontario, Canada, assignors to The Steel Company of Canada, Limited, Hamilton, Ontario, Canada, a company of Canada

Continuation-in-part of application Ser. No. 408,988, Nov. 4, 1964. This application May 6, 1968, Ser. No. 726,970
Int. Cl. C01b 9/02
U.S. Cl. 23—154 13 Claims



A process for the regeneration of hydrochloric acid solutions containing metal chlorides wherein the acid solutions are fed at a controlled rate onto a hot surface in an oxidizing atmosphere within an externally heated reaction chamber for vaporization of the liquid constituents of the solution, deposition of hydrated metal chlorides, oxidation and dehydration of said metal chlorides, and hydrolysis of the oxidized metal chlorides by reaction with steam produced in situ.

3,442,609

PROCESS OF PURIFYING PHOSPORIC ACID

John N. Carothers and Rudolph J. Hurka, Jr., both of 1629 Lady Marion Lane NE., Atlanta, Ga. 30309

No Drawing. Continuation-in-part of application Ser. No. 269,808, Apr. 1, 1963. This application Feb. 9, 1965, Ser. No. 431,457
Int. Cl. C01b 25/22
U.S. Cl. 23—165 9 Claims

1. In a process of removing the impurities Al, Si, F, and $SO_4^=$ from wet-process phosphoric acid in which the mole ratios of said impurities are adjusted to approximately the following:

Al:Si:F:$SO_4^=$:Ca
1:0.8–1:12–16:1.5–2:4–8

the steps which comprise,

(a) adding a sodium salt selected from the group consisting of sodium carbonate and a sodium salt of orthophosphoric acid to wet-process acid in an amount to react with and precipitate sufficient Si as Na_2SiF_6 so that the Si in the acid from which the said impurities are being removed shall be at said mole ratio with Al,

(b) separating the Na_2SiF_6 from the acid, and

(c) adding a sodium salt of hydrofluoric acid to the acid being treated in an amount so that the F in the acid is at said mole ratio with Al.

3,442,610

PRODUCTION OF PHOSPHORIC ACIDS

William Roy Mustian, Jr., Lakeland, Fla., and James Austin, Maidenhead, England, assignors to Occidental Research & Engineering Limited, London, England, a British company

Filed Nov. 9, 1965, Ser. No. 507,013
Int. Cl. C01b 25/18
U.S. Cl. 23—165 1 Claim

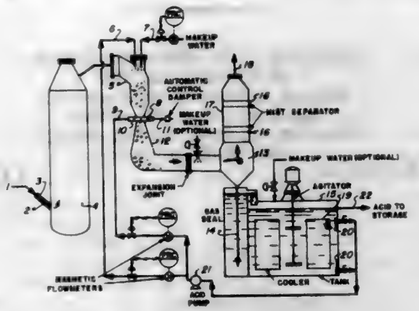
Process comprising digesting phosphate rock with substantially sulfate-free phosphoric acid to convert the calcium values to soluble mono-calcium phosphate, separating the liquid, adding sulfuric acid to the liquid to convert monocalcium phosphate to calcium sulfate and phosphoric acid and causing calcium sulfate to crystallize, filtering the liquid to separate the calcium sulfate from the phosphoric acid, treating at least part of the filtered phosphoric acid to produce substantially sulfate-free phosphoric acid, and utilizing such acid for the digestion of further phosphate rock.

3,442,611

PROCESS FOR THE PRODUCTION OF HIGHLY CONCENTRATED PHOSPHORIC ACID

Hilland Y. Allgood, Florence, and Fred E. Lancaster, Jr., Killen, Ala., assignors to Tennessee Valley Authority, a corporation of the United States

Continuation-in-part of application Ser. No. 361,917, Apr. 22, 1964. This application Mar. 8, 1968, Ser. No. 722,511
Int. Cl. C01b 25/20; F02m 29/04
U.S. Cl. 23—165 5 Claims



A process is described for cooling phosphorus combustion gases, hydrating P_2O_5, and coalescing and separating highly concentrated phosphoric acids. A novel gas cooling-hydration-coalescing vessel having sprays to minimize solids deposition and a throat dampered to permit solids passage and effective acid coalescence is utilized; screens in an acid cooler to retain and permit solids dissolution are also shown.

3,442,612

PROCESS FOR MANUFACTURE OF HYDRAZINE AND ALKYL SUBSTITUTED HYDRAZINES

Ludwig Konrad Huber, King of Prussia, and Luke Ralph Ocone, Wyndmoor, Pa., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Feb. 9, 1966, Ser. No. 526,042
Int. Cl. C07c 109/02; C01b 21/16
U.S. Cl. 23—190 3 Claims

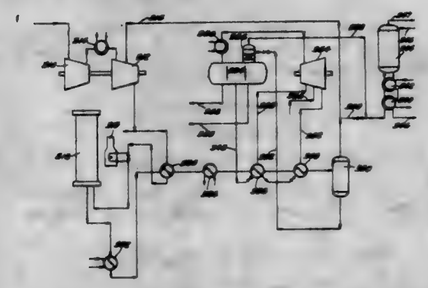
The preparation of hydrazine and lower alkyl substituted hydrazines by reaction of chlorourea and its lower alkyl derivatives with an alkaline metal hydroxide at temperatures between about 0° and 50° C. and in the presence of less than about 50% by weight of the mixture of water, and thereafter isolating the hydrazine product by distillation.

3,442,613

HYDROCARBON REFORMING FOR PRODUCTION OF A SYNTHESIS GAS FROM WHICH AMMONIA CAN BE PREPARED

Bernard J. Grotz, Jr., Arcadia, Calif., assignor to C. F. Braun & Company, Alhambra, Calif., a corporation of California

Filed Oct. 22, 1965, Ser. No. 501,260
Int. Cl. C01b 2/30, 2/14
U.S. Cl. 23—199 7 Claims



The present invention relates to a process for reforming hydrocarbons to obtain a synthesis gas containing substantially stoichiometric amounts of hydrogen and nitrogen wherein effluent from a primary reforming operation containing relatively large amounts of unconverted hydrocarbon is reacted with an amount of air sufficient to remove all but residual hydrocarbon, which amount will provide a substantial stoichiometric excess of nitrogen, and subsequently cooling the resulting effluent to a temperature and pressure sufficient to remove excess nitrogen and residual contaminants so as to obtain a more economically produced synthesis gas.

3,442,614

ELIMINATION OF HALOAMINES IN SODIUM BROMIDE BRINES AND OTHER BROMIDE-CONTAINING SOLUTIONS IN BROMINE RECOVERY SYSTEMS

Charles D. Frazee, Springfield Township, Hamilton County, and Henry R. Greeb, Cincinnati, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

Filed June 30, 1967, Ser. No. 650,467
Int. Cl. C01b 7/10
U.S. Cl. 23—216 7 Claims

A halogen acid, an aqueous solution of a halogen acid, or a halogen acid gas is added to a sodium bromide brine or other bromide-containing solution containing amino nitrogen, when the brine or solution is being processed to recover bromine, to prevent the formation of explosive haloamines.

3,442,615

METHOD OF MAKING SYNTHETIC DIAMOND CRYSTALS

Masao Wakatsuki and Toshio Aoki, Yokohama-shi, and Hiroaki Hayashi, Kawasaki-shi, Japan, assignors to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan

Filed Nov. 7, 1966, Ser. No. 592,365
Claims priority, application Japan, Nov. 20, 1965, 40/71,166
Int. Cl. C01b 31/06
U.S. Cl. 23—209.1 8 Claims

A method of synthetically making diamonds by subjecting a carbonaceous material, together with at least two metals, one selected from the group consisting of titanium, zirconium and hafnium and the other metal selected from the group consisting of copper, silver and gold, to a pressure of at least 50,000 atmospheres and a temperature of at least 1,200° C.

3,442,616

METHOD OF MAKING SYNTHETIC DIAMOND CRYSTALS

Masao Wakatsuki and Toshi Aoki, Yokohama-shi, and Shinichiro Takasu and Nobuyuki Wakamatsu, Tokyo, Japan, assignors to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan

Filed Nov. 7, 1966, Ser. No. 592,366
Claims priority, application Japan, Nov. 13, 1965, 40/69,478
Int. Cl. C01b 31/00
U.S. Cl. 23—209.1 8 Claims

Synthetic diamonds are prepared by subjecting carbonaceous material to a pressure of at least 50,000 atm. and a temperature of at least 1,200° C. in the presence of a combination of metals which serves as a catalyst, i.e., at least one of the metals vanadium, tungsten or molybdenum combined with at least one of the metals copper, silver or gold.

3,442,617

METHOD FOR DEPOSITING PYROLYTIC GRAPHITE

Michael Turkat, New York, and William A. Robba, Shoreham, N.Y., assignors to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

Continuation-in-part of application Ser. No. 345,487, Feb. 17, 1964. This application June 28, 1967, Ser. No. 649,690
Int. Cl. C01b 31/00
U.S. Cl. 23—209.1 2 Claims

A deposition method for making pyrolytic graphite whereby there are achieved unusually thick deposits in complex shapes, and rates of deposition greatly in excess of those heretofore attainable. The method involves high-temperature oxidation or halogenation of a hydrocarbon with concurrent thermal reduction. Preferred conditions utilize acetylene as the hydrocarbon, temperatures of 1900° C. or higher and furnace pressures of 1 to 6 mm. Hg absolute, and result in deposition rates of 17 to 60 mils per hour.

3,442,618

METHOD FOR PRODUCING HYDROGEN FROM HYDROGEN-CONTAINING FEEDSTOCKS

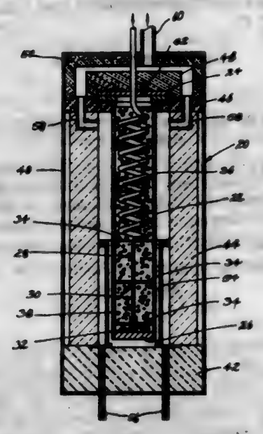
Richard A. Sederquist, Newington, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Aug. 4, 1965, Ser. No. 480,528
Int. Cl. C01b 1/18
U.S. Cl. 23—212 12 Claims

There is disclosed a method for producing hydrogen from hydrogen-containing carbonaceous feedstocks at relatively low water-to-carbon molar ratios. The heated stream of feedstock and water is passed through a bed of dehydrogenation catalyst which is heated to provide a pronounced thermal incline from the inlet end to the outlet end, the latter having a temperature of about 370 to 650° centigrade. The thermal incline is selected to increase progressively the amount of feedstock reacted with increasing temperature along the thermal incline for essentially complete conversion of the feedstock and to avoid carbon forming reactions.

The catalyst thus converts essentially all of the feedstock to methane, hydrogen and carbon oxides in the product stream. The product stream is then passed

through an additional bed of dehydrogenation catalyst maintained at a temperature of about 700 to 900° centigrade to effect conversion of the methane to carbon oxide products and hydrogen.



3,442,619

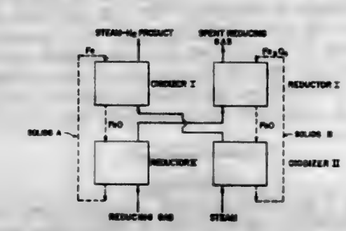
PRODUCTION OF HYDROGEN VIA THE STEAM-IRON PROCESS UTILIZING DUAL SOLIDS RECYCLE

Jack Huebler, Deerfield, James L. Johnson, Oak Park, Frank C. Schora, Jr., Palatine, and Paul B. Tarman, Elmhurst, Ill., assignors to Consolidation Coal Company, Pittsburgh, Pa., a corporation of Delaware

Continuation-in-part of application Ser. No. 477,512, Aug. 5, 1965. This application Mar. 27, 1968, Ser. No. 716,569

Int. Cl. C01b *1/08*

U.S. Cl. 23—214 13 Claims



An improved process for making hydrogen by the steam-iron reaction in which a dual solids system is used to effect the oxidation of Fe to Fe_3O_4 in two oxidation steps, namely Fe to FeO and FeO to Fe_3O_4, and also the reduction of the resulting oxides in two separate steps.

3,442,620

PRODUCTION OF HYDROGEN VIA THE STEAM-IRON PROCESS

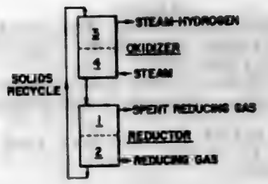
Jack Huebler, Deerfield, James L. Johnson, Oak Park, Frank C. Schora, Jr., Palatine, and Paul B. Tarman, Elmhurst, Ill., assignors to Consolidation Coal Company, Pittsburgh, Pa., a corporation of Delaware

Continuation-in-part of application Ser. No. 477,511, Aug. 5, 1965. This application Apr. 18, 1968, Ser. No. 722,389

Int. Cl. C01b *1/08*

U.S. Cl. 23—214 10 Claims

A process for making hydrogen by the steam-iron reaction utilizing countercurrent gas-solids contact, wherein oxidation of Fe to Fe_3O_4 is conducted in two zones, one principally for the Fe to FeO reaction and the other principally for the FeO to Fe_3O_4 reaction; and the reduction of the Fe_3O_4 to Fe is also conducted in two zones for the same reactions in the reverse direction.



3,442,621

PHOSPHORUS PRODUCTION

John A. Hinkebein, Manchester, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Filed Oct. 7, 1965, Ser. No. 493,816

Int. Cl. C01b *25/02*

U.S. Cl. 23—223 4 Claims

The phosphorus content of a phosphorus and water type sludge is reduced by treating the sluge with chromic acid and coalescing the phosphorus in the presence of hydrochloric acid or sulfuric acid.

3,442,622

REFINING OF SILICON

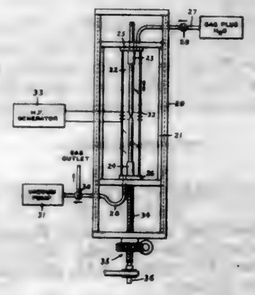
Robert Monnier and Philippe Grandjean, Geneva, Switzerland, assignors to The General Trustee Company, Inc., Geneva, Switzerland

Continuation-in-part of application Ser. No. 478,719, Aug. 10, 1965. This application May 8, 1968, Ser. No. 727,655

Claims priority, application Switzerland, Sept. 15, 1964, 11,990/64

Int. Cl. C01b *33/02*

U.S. Cl. 23—223.5 5 Claims



A process of refining silicon which involves alternatively subjecting molten silicon to treatment with a wet atmosphere of an inert gas and subjecting molten silicon to treatment in vacuum and repeating these treatments for a total of at least about fourteen times in order to remove essentially completely elements of the third and fifth columns of the periodic table.

3,442,623

METHOD OF DETERMINING THE FAT CONTENT OF MILK AND RELATED PRODUCTS

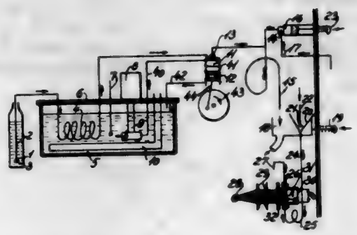
Poul E. Aegidius, Hillerod, Denmark, assignor to A/S N. Foss Electric, Hillerod, Denmark

Continuation-in-part of application Ser. No. 301,548, Aug. 12, 1963. This application Sept. 7, 1967, Ser. No. 685,989

Claims priority, application Denmark, Aug. 14, 1962, 3,562/62

Int. Cl. G01n *33/06*

U.S. Cl. 23—231 15 Claims



A method for colorimetrically determining the fat content of milk by first adding a protein chelating agent to a milk sample and then homogenizing the sample at a constant pressure. The homogenized sample is placed in a cuvette of a colorimeter, the distance between the cuvette and the photoelectric cell being such that a curve representing the transmission of light through the cuvette as a function of the homogenizing pressure shows a distinct minimum at the homogenizing pressure. The light transmission reading may be compared with the curve for samples of known fat content.

3,442,624

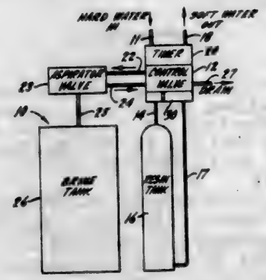
WATER CONDITIONING SYSTEM

Benjamin H. Kryzer and James E. Hiers, St. Paul, Minn., assignors, by mesne assignments, to Union Tank Car Company, Chicago, Ill., a corporation of Delaware

Filed Dec. 31, 1964, Ser. No. 422,725

Int. Cl. B01d *11/04*

U.S. Cl. 23—272 5 Claims



A tank dissolver provided with a perforate tray to support a solute body with solvent. Solvent underlies the body. A flexible hose below the tray is fixed at one end with a free opposed end. The tray is provided with a recess into which the free end is received so that it can be elevated above the level of the tray.

3,442,625

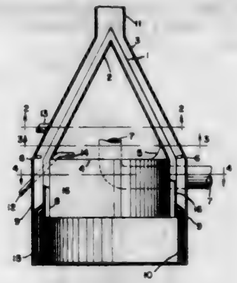
APPARATUS FOR PURIFYING FUEL OIL

Edward M. Knapp, 951 N. Livingston St., Arlington, Va. 22205, and Stephen J. Nesbitt, 1111 Massachusetts Ave. NW., Washington, D.C. 20005

Filed Mar. 9, 1967, Ser. No. 621,836

Int. Cl. B01j *1/00*; C10g *29/00*

U.S. Cl. 23—284 1 Claim



This invention pertains to the processing of oils not suitable in their present state for combustion in accordance with proposed government regulations for the control of air pollution, the processing to consist of removing certain adverse constituents prior to combustion, this in order to permit the unrestricted use of these oils as fuels in the future.

3,442,626

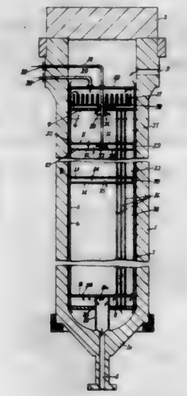
AMMONIA CONVERTER

Robert Y. Browne, Louisville, Ky., assignor to Girdler Corporation, Louisville, Ky., a corporation of Ohio

Filed Jan. 8, 1965, Ser. No. 424,238

Int. Cl. C01c *1/04*

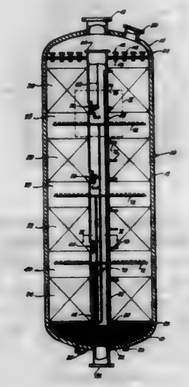
U.S. Cl. 23—288 5 Claims



A converter for the syntheses of ammonia and the like comprising an elongated casing having an inlet means at the top, an outlet means at the bottom and an internal sleeve spaced from the interior surfaces of the casing and extending through the greater part of its length. The sleeve is closed at the top by a sleeve closure means and is provided at the bottom with means communicating with the casing outlet. The sleeve is divided into a first chamber housing a start up heater, two catalyst beds and a bed of inert, gas-pervious material. Heat exchange tubes extend from the bottom of the sleeve to the chamber

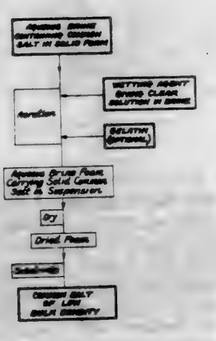
containing the start up heater and means are provided for introducing feed gas directly into the start up heater chamber and to a point between the two catalyst beds.

3,442,627
CATALYST UNLOADING AND TEMPERATURE CONTROL APPARATUS
Herbert F. Wilkinson, Fullerton, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California
Filed June 14, 1965, Ser. No. 463,604
Int. Cl. B01j 9/10
U.S. Cl. 23—289 12 Claims



Apparatus for effecting catalytic conversions comprising a cylindrical vessel, and an axial center pipe therein having closeable side wall openings for unloading catalyst, and serving also as a catalyst supporting means and as a pathway for fluid quench lines.

3,442,628
LOW BULK DENSITY SALT USING CATIONIC SURFACE-ACTIVE AGENTS
James Saunders and Stewart Ernest Crow, Edinburgh, Scotland, assignors to Cerebos Foods Limited, London, England, a British company
Filed Apr. 14, 1966, Ser. No. 542,453
Claims priority, application Great Britain, Apr. 22, 1965, 17,054/65
Int. Cl. B01t 17/06, 17/02
U.S. Cl. 23—300 11 Claims



Common salt of low bulk density is prepared by foaming brine containing common salt in suspension and a wetting agent soluble therein to give a clear solution of reduced surface tension, drying the foam and then subdividing it into particles. The wetting agent at least partly stabilises the foam and gelatin may also be added to the brine to assist in stabilising it.

3,442,629
PHOSPHONITRILIC POLYMERS
Daniel J. Jaszka, Tonawanda, N.Y., assignor to Hooker Chemicals Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Original application Mar. 2, 1964, Ser. No. 348,877. Divided and this application Jan. 3, 1967, Ser. No. 660,845
Int. Cl. C01b 21/54
U.S. Cl. 23—357 4 Claims

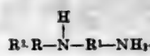
A polymer, useful as construction, gasketing and covering materials in machines and articles subjected to high temperatures and humidities, characterized by high hydrolytic stability and heat resistance which is the heat polymerized product of a cyclotriphosphazatriene of the formula,



wherein A is selected from the group consisting of chlorine and phenoxy; and, Y is selected from the group consisting of $—NH_2$, $—N=PCl_3$, $—N=P(C_6H_5O)_3$ and $—N=P(C_6H_5)_3$ and A is phenoxy when Y is $—NH_2$.

3,442,630
GASOLINE CONTAINING DIAMINE SALT OF A BRANCHED CHAIN CARBOXYLIC ACID
Weldon G. Annable, Crystal Lake, and Frederick L. Mueller, Arlington Heights, Ill., assignors, by mesne assignments, to Union Oil Company of California, Los Angeles, Calif., a corporation of California
No Drawing. Filed Apr. 23, 1962, Ser. No. 189,315
Int. Cl. C10l 1/22
U.S. Cl. 44—66 14 Claims

1. A gasoline composition consisting essentially of hydrocarbons boiling in the gasoline boiling range containing a small amount, sufficient to inhibit carburetor ice formation, of a diamine salt of the formula



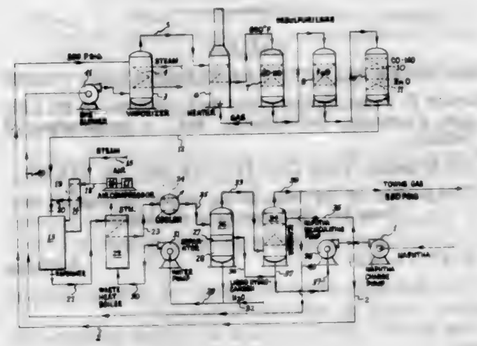
where R is a C_{12}–C_{30} hydrocarbon radical, R^1 is a C_2–C_{20} divalent hydrocarbon radical, and R^2 is a C_4–C_{30} branched chain carboxylic acid.

3,442,631
JET ENGINE DEPOSIT MODIFICATION
Martin E. Gluckstein, Detroit, Mich., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed Sept. 28, 1967, Ser. No. 671,213
Int. Cl. C10l 1/28, 1/12
U.S. Cl. 44—68 6 Claims

A method of modifying manganese containing deposits formed on the surfaces of jet engines from burning fuel containing organomanganese compound as a smoke reducer is described. The deposits are modified by adding a silicone to the organomanganese containing fuel. The manganese containing deposit is so modified by the silicone additive that its cohesive and adhesive tendencies are reduced.

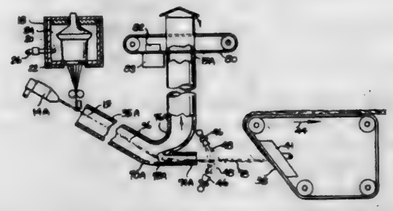
Cyclopentadienyl manganese tricarbonyl compounds are useful organomanganese compounds; methyl polysiloxanes having a viscosity at 25° C. of from about 0.6 to about 100,000 centistokes are useful silicones.

3,442,632
PROCESSES OF PRODUCING FUEL GASES BY REFORMING LIQUID HYDROCARBONS
Bertrand J. Mayland, Jeffersontown, and Charles S. Brandon, Louisville, Ky., assignors to Girdler Corporation, Louisville, Ky., a corporation of Ohio
Filed Oct. 26, 1964, Ser. No. 406,418
Int. Cl. C10k 3/02; C10g 35/04
U.S. Cl. 48—215 8 Claims



A method of converting naphtha and related liquid hydrocarbons to gaseous fuel consisting essentially of hydrogen, carbon dioxide, carbon monoxide and sufficient methane and like gaseous hydrocarbons to provide a B.t.u. content high enough to render the gaseous fuel suitable for industrial and household use. The naphtha and related liquid hydrocarbons are vaporized and reformed by passing them in a reformer furnace first through a catalyst bed of high activity, for a time insufficient to produce complete reformation, and then through a catalysis bed of lesser activity, for a longer length of time to form a gas containing a substantial quantity of methane and a quantity of hydrocarbons of large molecular size consisting of condensed naphthas and aromatic compounds, without substantial quantities of intermediate hydrocarbons. Thereafter, the hydrocarbons of large molecular size are condensed and removed from the gaseous fuel product.

3,442,633
METHOD AND APPARATUS FOR CONVEYING AND FOR TREATING GLASS FIBERS
Walter Merton Perry, 76 Locust Hill Road, Darien, Conn. 06820
Continuation-in-part of application Ser. No. 608,942, Jan. 12, 1967, which is a continuation of application Ser. No. 335,012, Jan. 2, 1964. This application Dec. 29, 1967, Ser. No. 701,522
Int. Cl. C03b 37/02; B29c 23/00
U.S. Cl. 65—3 13 Claims



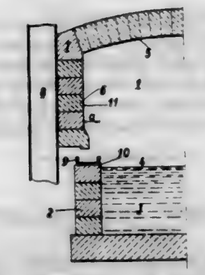
Method of inhibiting thermally activated changes in thermally sensitive materials when applied to mineral fibers entrained in a hot gaseous medium comprising separating a portion of the hot gases without disrupting the entrained fibers, and apparatus for effecting the separation.

3,442,634
METHOD OF MANUFACTURE OF GLASS-SEALED SEMICONDUCTOR DEVICE
Kaichiro Katori and Shinichi Kamiyama, Tokyo, Japan, assignors to Fujitsu Limited, Kawasaki, Japan, a corporation of Japan
Filed Oct. 16, 1964, Ser. No. 404,455
Claims priority, application Japan, Oct. 17, 1963, 38/55,552
Int. Cl. C03b 23/20
U.S. Cl. 65—42 3 Claims



The open end portion of a glass housing for a semiconductor device is heated to soften such open end while the electrode assembly of the device is maintained spaced a small distance from the surface of the semiconductor body of the device. The open end portion of the glass housing is then heated additionally to seal such open end around a glass bead through which a lead wire of the electrode assembly passes and the electrode assembly is moved into electrical contact with the surface of the semiconductor body during the completion of such sealing.

3,442,635
GLASS FURNACE WALL ARRANGEMENT
Gustave Javaux, Brussels, Belgium, assignor to Glaverbel S.A., Brussels, Belgium
Filed Jan. 21, 1966, Ser. No. 522,218
Claims priority, application Luxembourg, Feb. 24, 1965, 48,073
Int. Cl. C03b 5/20, 5/04
U.S. Cl. 65—168 7 Claims



An arrangement for protecting the upper bricks of the walls of a glass melting tank from damage due to corrosive products formed on upper furnace walls disposed above the tank and in communication with the atmosphere above the molten glass, the arrangement being formed by spacing the lower edge of the upper walls

above the upper bricks of the tank so that corrosive products forming on the upper walls will undergo free fall before reaching the upper bricks, and by disposing removable collecting element on top of the upper bricks for catching the corrosive products and keeping them out of contact with the brick, the element being removed and replaced when it becomes filled.

3,442,636

APPARATUS FOR THE MANUFACTURE OF SHEET GLASS UTILIZING GAS-PERMEABLE VERTICAL DAMPERS

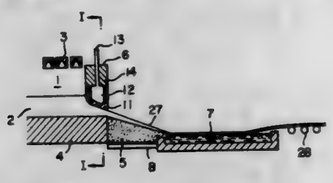
Hideo Kita, Amagasaki-shi, and Kunihiko Ito, Nishinomiya-shi, Japan, assignors to Nippon Sheet Glass Co., Ltd., Osaka, Japan

Filed Aug. 13, 1965, Ser. No. 479,519

Claims priority, application Japan, Aug. 22, 1964, 39/47,655

Int. Cl. C03b *18/02*

U.S. Cl. 65—182 2 Claims



An apparatus for use in the production of sheet glass in which the molten glass flows through a horizontal elongated slit onto a molten metal bath. The slit comprises a plurality of closely adjacent vertical movable damper members having the portion thereof adjacent to the slit and extending upward away from the slit a short distance of a gas-permeable material.

3,442,637

GRANULATION OF SEWAGE SLUDGE

John W. Hudson, Atlanta, and Gerald D. Ferguson, Decatur, Ga., assignors, by mesne assignments, to USS Agri-Chemicals, Inc., Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed July 21, 1965, Ser. No. 473,852

Int. Cl. C05f *13/00, 7/00*; C05c *3/00*

U.S. Cl. 71—12 10 Claims

Fertilizer ingredients including sewage and bran fibers are mixed with nitrogen solution, ammonia and steam, and the blended mixture granulated to form hot granules. The granules while hot and wet are mixed with cottonseed meal and starch whereby the oil-rich particles of the meal coat the granules to provide an attrition-resistant fertilizer.

3,442,638

(2-METHOXYETHYL) MERCURI ACETATE AS A HERBICIDE

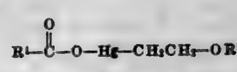
John C. Wollensak, Royal Oak, David W. Zatzat, Pleasant Ridge, and Kenneth M. Christenson, Detroit, Mich., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Apr. 28, 1966, Ser. No. 545,865

Int. Cl. A01m *9/38, 5/00*

U.S. Cl. 71—97 3 Claims

Killing of deciduous plants by a method which comprises contacting the plants with a composition containing, as an active ingredient, organomercury compounds having the formula



wherein R^1 is hydrogen or an alkyl radical having up to 12 carbon atoms, and R^2 is an alkyl radical having up to 12 carbon atoms.

3,442,639

PROCESS OF SELECTIVELY ELIMINATING WEEDS

Quentin F. Soper, Indianapolis, Ind., assignor to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed Dec. 22, 1965, Ser. No. 515,760

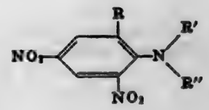
The portion of the term of the patent subsequent to June 21, 1983, has been disclaimed

Int. Cl. A01n *9/20*; C07c *87/52*

U.S. Cl. 71—121 5 Claims

This invention relates to a group of novel 2,4-dinitroanilines useful as selective herbicides.

The novel 2,4-dinitroanilines are of the following formula:



wherein R is trifluoromethyl, or halo having a molecular weight less than 81; R′ is hydrogen, C_2–C_4 alkyl, allyl, chloroallyl, crotyl, or methallyl; and R″ is C_1–C_7 alkyl, allyl, chloroallyl, crotyl, or methallyl, the sum of the carbon atoms in R′ and R″ being greater than 3 and less than 9.

3,442,640

METHODS OF DESTROYING WEEDS WITH SUBSTITUTED TETRALINS

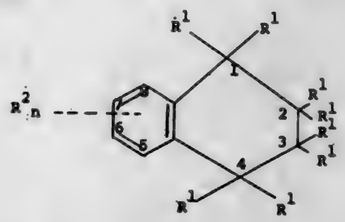
Thomas F. Wood, Wayne, N.J., and Nancy E. Achuff, Oreland, Pa., assignors, by direct and mesne assignments, to Givaudan Corporation, Clifton, N.J., a corporation of New Jersey

No Drawing. Filed Nov. 22, 1966, Ser. No. 596,066

Int. Cl. A01n *9/20*

U.S. Cl. 71—124 6 Claims

The use as herbicides is disclosed of compounds having the formula:



wherein R^1 is selected from the group consisting of hydrogen and alkyl radicals having from 1 to 5 total carbon atoms with the proviso that at least 2 of the R^1 radicals must be hydrogen; R^2 is selected from the group consisting of hydroxy, nitro, the alkoxymethyl radical and alkyl and alkoxy radicals having from 1 to 5 total carbon atoms and *n* is an integer of 1 to 3; with the proviso that when R^2 is nitro, there must be 2 such groups with the nitro groups meta to each other, R^2 may also be an alkyl group, and both R^1's in the 4 position must then be hydrogen.

3,442,641

METALLIC BRAZING MIXTURE

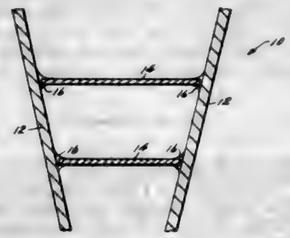
George F. Albers, West Chester, Ohio, assignor to General Electric Company, a corporation of New York

Filed Mar. 4, 1965, Ser. No. 437,041

Int. Cl. C22b *53/00*

U.S. Cl. 75—.5 3 Claims

A brazing mixture for use across a relatively wide gap in joining members based on the element titanium consists essentially of two powdered metallic materials. One material is powdered titanium. The other material is a powdered metallic material which acts as a liquid phase



binder and preferably is silver or silver with a small amount of aluminum.

3,442,642

PREPARATION OF PLUTONIUM

William J. Ramsey, James O. Jepson, and David H. Wood, Livermore, Calif., assignors to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed May 10, 1968, Ser. No. 728,369

Int. Cl. C22b *61/04*

U.S. Cl. 75—84.1 5 Claims

Plutonium is prepared by reacting dicesium plutonium hexachloride (Cs_2PuCl_6) with lithium.

3,442,643

RECOVERY OF ELECTROPLATE UTILIZING MOLTEN LEAD

Ernest B. Ackerman, 1537 N. Marion, Denver, Colo. 80218

No Drawing. Filed Dec. 8, 1965, Ser. No. 512,519

Int. Cl. C22b *11/04*

U.S. Cl. 75—63 1 Claim

A process of recovering a precious metal which is electroplated onto a base metal is describing comprising (1) contacting the article from which the electroplate is to be removed with molten lead at a temperature above the melting point of the precious metal for a time sufficient to melt the precious metal; (2) adding zinc which is a better solvent for the precious metal than lead to the admixture; (3) removing the zinc containing the precious metal dissolved therein from the lead; and (4) recovering the precious metal from the zinc.

3,442,644

FERRO-ALLOYS CONTAINING NIOBIUM AND TITANIUM

Fritz Stadler, Büderich Dusseldorf, and Rudolf Fichte, Nurenberg, Germany, assignors to Gesellschaft fur Elektrometallurgie mbH, Dusseldorf, Germany

No Drawing. Filed Jan. 20, 1967, Ser. No. 610,583

Claims priority, application Germany, Jan. 26, 1966, G 45,821

Int. Cl. C22c *39/04, 39/54*

U.S. Cl. 75—124 3 Claims

The loss by oxidation of niobium and titanium in ferro-alloys containing such alloying elements simply, when used in steel-making, is inhibited if a ferro-alloy is used containing both titanium and niobium, together with a small proportion of aluminium, silicon and carbon.

3,442,645

ELECTROPHOTOGRAPHIC METHOD

Roger G. Olden, Trenton, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed June 12, 1964, Ser. No. 374,747

Int. Cl. G03g *13/14*

U.S. Cl. 96—1.4 6 Claims

A method of transferring an unfused, visible image of electroscopic toner particles from a record to a transfer sheet comprises the steps of (a) charging a dielectric sheet with a uniform electrostatic charge, (b) disposing the record in contact with the transfer sheet with the visible image against the transfer sheet, (c) disposing both the record and the transfer sheet on the charged dielectric sheet, and (d) applying pressure between the record and the transfer sheet. The charge on the dielectric sheet should be of a polarity to effect a transfer of the electroscopic toner particles from the record to the transfer sheet. The apparatus comprises a rotatable dielectric belt disposed between charging means and developing means for conveying both transfer sheets and a charge to the developing means.

3,442,646

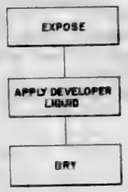
FORMATION OF LIGHT SCATTERING IMAGES IN LAYERS COMPRISING ORGANIC PHOTOCHROMIC MATERIALS

Alan B. Amidon, Penfield, and Carl Brynko, West Webster, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Oct. 1, 1965, Ser. No. 492,024

Int. Cl. G03c *5/04, 5/40*

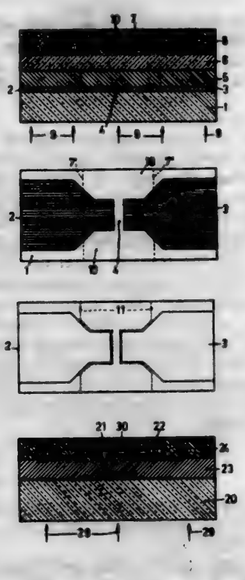
U.S. Cl. 96—27 11 Claims



Images are formed by exposing an imaging member comprising an organic photochromic material in an imaging layer to a pattern of actinic electromagnetic radiation to convert at least a portion of the material from one photochromic state to another to form a latent image and developing the imaging layer with a developing liquid which selectively wets the imaging layer in conformance with the latent image, the developing liquid containing sufficient solvent to dissolve at least a portion of the imaging layer underlying the wetted areas and a material which forms an incompatible solution with at least a por-

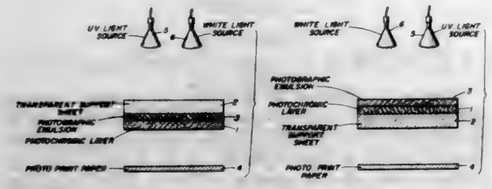
tion of the dissolved portion of the imaging layer upon removal of the solvent.

3,442,647
METHOD OF MANUFACTURING SEMICONDUCTOR DEVICES AND SEMICONDUCTOR DEVICES MANUFACTURED BY SUCH METHODS
Hendrik Anne Klasens, Emmasingel, Eindhoven, Netherlands, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed June 1, 1964, Ser. No. 371,386
Claims priority, application Netherlands, June 20, 1963, 294,370
Int. Cl. G03c *5/00*
U.S. Cl. 96—36.2 9 Claims



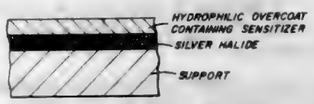
Improvements in or relating to methods of manufacturing semiconductor devices and semiconductor devices manufactured by such methods.

3,442,648
PHOTOGRAPHIC DODGING METHOD
Raymond John Dunsford Smith, Bethel, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
Filed June 16, 1965, Ser. No. 464,412
Int. Cl. G03c *5/06, 1/76*
U.S. Cl. 96—44 4 Claims



A method of dodging photographic film using an article of manufacture which is a photographic film comprising, in permanent integral laminated arrangement, a substantially transparent support sheet, a photochromic layer and a photographic emulsion layer in direct contact with said photochromic layer.

3,442,649
SPEED STABILIZED VACUUM DEPOSITED SILVER HALIDE
Arthur A. Rasch, Jean E. Jones, and Wilbur C. Hodges, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Dec. 3, 1964, Ser. No. 415,596
Int. Cl. G03c *1/28*
U.S. Cl. 96—67 7 Claims



Photographic elements utilizing a vacuum-deposited silver halide layer as the light-sensitive component are stabilized against speed changes during storage by positioning a hydrophilic layer contiguous to the silver halide layer. Such a hydrophilic layer can contain either chemical or spectral photographic sensitizers or combinations thereof.

3,442,650
DIAZONIUM COMPOUNDS AND DIAZOTYPE MATERIALS CONTAINING THEM
Andreas Joseph Johannes Hendrickx and Bernardus Hubertus Huibers, Venlo, Netherlands, assignors to Chemische Fabriek L. Van Der Grinten N.V., Venlo, Netherlands, a Dutch corporation
No Drawing. Filed Mar. 10, 1966, Ser. No. 533,257
Claims priority, application Netherlands, Mar. 12, 1965, 6503184
Int. Cl. G03c *1/54*; C07c *113/00*
U.S. Cl. 96—91 10 Claims

Highly light-sensitive fast-developing diazotype materials which give strong images with little or no background offshades or staining are obtained by providing and utilizing in the light-sensitive layers new para-(tertiary) amino-2-halo-3-(non-substituted or alkyl- or halo-) phenoxy benzene diazonium compounds in which one of the tertiary amino substituents is alkyl, branched alkyl or aralkyl, and the other is alkyl, branched alkyl, cycloalkyl or aralkyl. Particularly suitable for one-component diazotype layers are 4-dialkylamino-3-(chloro- or bromo-) phenoxy-2-chlorobenzene diazonium compounds in which the alkyl groups contain at most four C atoms; materials made with these develop rapidly with weakly acid buffered phloroglucinol solutions, yielding black images on bright white or foggy gray backgrounds.

3,442,651
DIAZONIUM COMPOUNDS AND DIAZOTYPE MATERIALS CONTAINING THEM
Andreas Joseph Johannes Hendrickx and Bernardus Hubertus Huibers, Venlo, Netherlands, assignors to Chemische Fabriek L. Van Der Grinten N.V., Venlo, Netherlands, a Dutch corporation
No Drawing. Filed Mar. 10, 1966, Ser. No. 533,388
Claims priority, application Netherlands, Mar. 12, 1965, 6503183
Int. Cl. G03c *1/52*
U.S. Cl. 96—91 10 Claims

Highly light-sensitive diazotype materials which are developable rapidly with weakly acid buffered phloroglucinol solutions to give images without off-shades in their backgrounds are obtained by the utilization of new para-(tertiary) amino-2-halo-3-(alkoxy, branched alkoxy, alkenyl-oxy or aralkoxy) benzene diazonium compounds in which one of the tertiary amino substituents is alkyl, branched alkyl or aralkyl and the other is cycloalkyl or aralkyl. Typical of the new compounds is 4-N-methyl-N-benzyl-amino - 3 - methoxy - 2 - chloro-benzene diazonium chloride, zinc chloride double salt.

3,442,652
DIAZONIUM COMPOUNDS AND DIAZOTYPE MATERIAL
Adrianus Marie Petrus Hectors, Bernardus Hubertus Huibers, and Carel Jacobus Knoester, Venlo, Netherlands, assignors to Chemische Fabriek L. Van Der Grinten N.V., Venlo, Netherlands, a corporation of Dutch Law
No Drawing. Filed Mar. 18, 1966, Ser. No. 535,316
Claims priority, application Netherlands, Mar. 24, 1965, 6503730
Int. Cl. G03c *1/58*; C07c *113/00*
U.S. Cl. 96—91 13 Claims

Diazotype material having high light-sensitivity and which couples with usual azo coupling components to form strong images having non-stained backgrounds and good keeping qualities is obtained by providing and utilizing in the light-sensitive layer a new para-(tertiary) amino-2-(alkyl or branched alkyl) thio-3-(alkyl, branched alkyl, alkenyl, cycloalkyl, benzyl or phenyl) oxy-benzene diazonium compound in which one of the tertiary amino substituents is alkyl, branched alkyl or benzyl and the other is alkyl, branched alkyl, cycloalkyl or benzyl. Particularly suitable for one-component diazotype layers are compounds having in the ortho position an alkylthio group containing at most three C atoms, in the meta position a non-branched alkoxy group containing at most four C atoms, and in the para position a N-alkyl-N-cyclohexyl-amino group wherein the N-alkyl group contains at most three C atoms.

3,442,653
SENSITIZED SILVER HALIDE SYSTEMS WITH ACTIVATED NONLABILE SELENIUM COMPOUNDS
Joseph S. Dunn, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Continuation-in-part of application Ser. No. 468,972, July 1, 1965. This application Mar. 29, 1968, Ser. No. 717,396
Int. Cl. G03c *1/50, 1/10*
U.S. Cl. 96—108 15 Claims

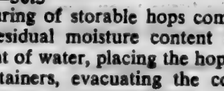
Sensitizing photographic systems such as a silver halide emulsion with a noble metal and labile selenium formed in situ by activating a non-labile selenium compound. Specific activation methods include the use of reducing agents.

3,442,654
GELATIN COATING COMPOSITION CONTAINING PURIFIED POLYOXYALKYLENE GLYCOL ETHER
Fred S. Eiseman, Jr., Maplewood, and Leslie M. Schenck, Mountainside, N.J., and E. Scudder Mackey, Binghamton, N.Y., assignors to GAF Corporation, a corporation of Delaware
No Drawing. Filed Dec. 11, 1964, Ser. No. 417,786
Int. Cl. G03c *1/34*; C09d *3/04*; C07c *41/12*
U.S. Cl. 96—109 21 Claims

A gelatino-silver halide coating composition having reduced fogging tendencies and the process for making the composition which involves incorporation therein, as a coating aid, of small proportions of a polyoxyalkylene glycol ether pretreated to reduce its fogging tendency by admixture with about 1 to 10 times its weight of water to form a homogeneous solution, heating to convert it into a two-phase system, and separating the organic phase from the aqueous phase.

3,442,655
POLYMERIC CHLOROACYLAMIDES AS GELATIN HARDENERS
Herbert Blank, Wixhausen, Darmstadt, Germany, assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Aug. 10, 1965, Ser. No. 478,734
Claims priority, application Germany, Dec. 3, 1964, A 47,768
Int. Cl. G03c *1/30*
U.S. Cl. 96—111 8 Claims

A process for hardening gelatin-containing layers characterized in that there is present at least one non-diffusing, polymeric chloroacylamide containing a recurring intralinear group of the formula



wherein R_1 is H or alkyl, e.g., methyl, and Z is a

—CO—CHR_2—

or —CO—NH— group where R_2 is a phenylene nucleus or 1–6 methylene groups.

3,442,656
METHOD OF SEPARATING PROTEIN INTO A FOOD CONCENTRATE AND CHEMICAL SEPARATOR THEREFOR
Dennis A. Meadors, Rte. 2, Alma, Ark. 72921
Filed Oct. 20, 1965, Ser. No. 498,425
Int. Cl. A23j *1/14*; C12d *13/06*
U.S. Cl. 99—17 6 Claims

The invention is a method and apparatus of processing raw protein materials into edible food. Enzymes are added to the prior fermented raw materials inside a porous inner portion of a processing tank with agitating means therein, and agitation is carried on. Nutrient collecting liquid is circulated around the porous inner portion, and the nutrients collected therein. The resulting nutrient containing liquor is oxidized, and passed into porous tubes in food collecting containers. Nutrients are passed through the tube wall and into the containers, and the resulting lean liquor is recycled to the process.

3,442,657
PRESERVING HOPS BY DRYING AND MAINTAINING IN AN INERT ATMOSPHERE
Fritz Bonnet, Munich, Germany, and Robert Gustav Fromm, London, England, assignors to Joachim Fromm, Leopold Mayer-Baas GmbH, Munich-Pasing, Germany
No Drawing. Filed Mar. 24, 1965, Ser. No. 442,486
Claims priority, application Germany, July 3, 1964, B 77,525
Int. Cl. C12c *3/04, 3/02*
U.S. Cl. 99—50.5 5 Claims

Manufacturing of storable hops comprising drying the hops to a residual moisture content of not more than 5% by weight of water, placing the hops into hermetically sealable containers, evacuating the containers down to a residual oxygen content of less than 3.0% by volume, filling the containers with an inert gas and sealing them hermetically.

3,442,658
METHOD OF PROCESSING VEGETABLE FOOD PRODUCT OF CHIP FORM
George K. Okumura, 3151 S. Elm Ave., Fresno, Calif. 93706, and Jack E. Wilkinson, 2411 Divisadero, Fresno, Calif. 93701
No Drawing. Filed Apr. 5, 1965, Ser. No. 445,776
Int. Cl. A23l *1/10, 1/00*
U.S. Cl. 99—83 6 Claims

Preparation of a crisp, crunchy protein containing food product by adding a curd derived from sprouted soy

beans to gluten flour to form a dough followed by shaping and deep-fat frying of the shaped product.

3,442,659

BREAD IMPROVING AGENTS

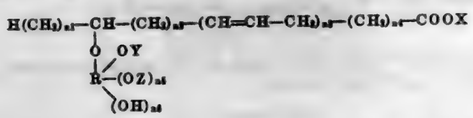
Robert J. Baccarlon, Park Forest, and Thomas W. Findley, La Grange, Ill., assignors to Swift & Company, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Aug. 12, 1966, Ser. No. 571,971

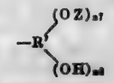
Int. Cl. A21d *13/08, 13/00*

U.S. Cl. 99—91 13 Claims

1. A method for the production of improved yeast leavened baked flour products which comprises: incorporating into the dough an effective amount of glycosides of hydroxy fatty acids of the formula:



wherein n_1 and n_2 are integers from 0 to 16; n_3 is an integer from 0 to 3; when n_3 is an integer other than 0 then n_4 is an integer from 0 to 6; when n_3 is 0 then n_4 is 0; and $n_1+n_2+3n_3+n_4$=an integer from 10 to 18; n_5 is an integer from 0 to 1; n_6 is an integer from 1 to 4; R is a glycoside containing 5 to 6 carbon atoms; X is selected from the group consisting of hydrogen, sodium, calcium, potassium and magnesium; Z is selected from the group consisting of hydrogen and acetyl radicals; and Y is selected from the group consisting of hydrogen and



wherein R' is a glycoside containing 5 to 6 carbon atoms; n_7 is an integer from 0 to 1; and n_8 is an integer from 1 to 4.

3,442,660

INACTIVATION OF ENZYMES IN MEAT

Joseph L. Shank, Matteson, Ill., assignor to Swift & Company, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Sept. 28, 1965, Ser. No. 491,010

Int. Cl. A23l *3/34*

U.S. Cl. 99—107 9 Claims

Meat tissue previously treated with a proteolytic enzyme is processed to inactivate the enzyme within the meat by exposing the tissue to an atmosphere of carbon dioxide or oxygen at elevated pressures and for substantial periods of time.

3,442,661

PRESERVING FISH WITH AMMONIA

Fern W. Mitchell, Washington, D.C., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Jan. 16, 1967, Ser. No. 609,337

Int. Cl. A23b *3/12*

U.S. Cl. 99—160 3 Claims

A method of preserving fish by treatment with ammonia. An amount of ammonia equal to or greater than 0.1% by weight of the fish is sprayed over the fish, and the fish stored successfully for periods up to 2 weeks without refrigeration.

3,442,662

FOOD PACKAGE CONTAINING SIMULATED BACON-TYPE FOOD PRODUCTS

Radcliffe Franklin Robinson, Highland Park, N.J., assignor of Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

Continuation of application Ser. No. 283,451, May 27, 1963. This application June 22, 1965, Ser. No. 472,383

Int. Cl. B65b *25/06*

U.S. Cl. 99—171 5 Claims

Hermetically sealed heatable food package containing simulated bacon, prepared from molecularly-oriented man-made fibers of natural vegetable protein and having a moisture content of from 5% to 9%, the dimensions of the package being such as to permit ready insertion into a slot of a bread toaster.

3,442,663

METHOD OF TREATING A SAUSAGE CASING WITH A RELEASE COATING AND PRODUCT RESULTING THEREFROM

Albin F. Turbak, Danville, Ill., assignor to Tee-Pak, Inc., Chicago, Ill., a corporation of Illinois

No Drawing. Filed Jan. 24, 1966, Ser. No. 522,375

Int. Cl. A22c *13/00*

U.S. Cl. 99—176 5 Claims

A process for treating artificial sausage casings to improve peelability of the casing from a sausage processed therein consists of applying to the inner surface of the sausage casing a coating of 0.0001–1.0% of a polymerized methyl hydrogen siloxane in the form of a solution consisting of the siloxane dissolved in a vegetable oil to provide a tightly adherent coating bonded to the casing.

3,442,664

TREATING COMPOSITION, METHOD OF TREATING AND TREATED SURFACES

Richard F. Heine, White Bear Lake, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed Apr. 26, 1966, Ser. No. 545,294

Int. Cl. C09k *3/18*; C09d *5/20*

U.S. Cl. 106—2 10 Claims

An aircraft windshield treating composition containing a low molecular weight liquid polymeric fluorine containing hydrolytically stable organo-siloxane which when applied to an aircraft windshield provides a durable transparent water-repellent film on the windshield.

3,442,665

PROCESS FOR PREPARING SAND CORES USING CO_2 CURED SILICATE BINDERS

Arno Müller, Reisholzstrasse 18, Hilden, Rhineland, Germany, and Günter Wagner, Kruppstrasse 8, Dusseldorf, Germany

No Drawing. Filed June 13, 1966, Ser. No. 556,895

Int. Cl. B28b *7/34*

U.S. Cl. 106—38.35 11 Claims

The moisture resistance of sand cores prepared by mixing sand with water-soluble silicates (e.g., sodium silicate) and curing the silicate is improved by adding to the sand mix prior to curing minor amount sufficient to impart moisture resistance to the core (e.g., from 0.0003 to 0.5 weight percent based on sand) of an alkali metal alkyl or aryl siliconate.

3,442,666

SOLID SOLUTION CEMENT

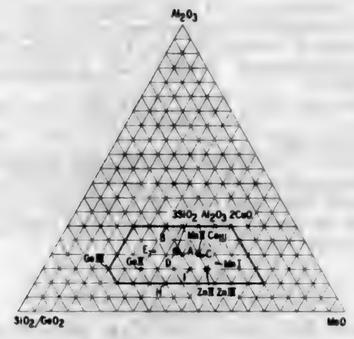
Aurel I. Berghezan, Brussels, Belgium, assignor to Union Carbide Corporation, a corporation of New York

Filed Nov. 29, 1963, Ser. No. 326,819

The portion of the term of the patent subsequent to Dec. 27, 1983, has been disclaimed

Int. Cl. C04b *35/14*

U.S. Cl. 106—39 5 Claims



A solid solution, at least ternary, is composed of SiO_2 or GeO_2 or both; Al_2O_3 and an oxide of at least one metal selected from the group consisting of Cu, Ag, Co, Mn, Zn, Ni and Fe in proportions represented by the formula $3SiO_2/GeO_2 \cdot Al_2O_3 \cdot 2MeO$.

3,442,667

POLYCRYSTALLINE OXIDE BODIES

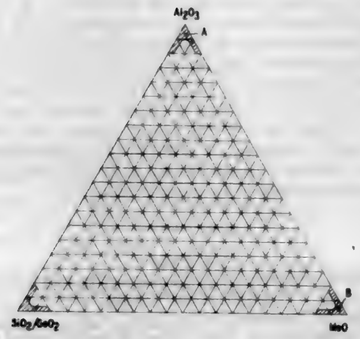
Aurel I. Berghezan, Brussels, Belgium, assignor to Union Carbide Corporation, a corporation of New York

Filed Nov. 29, 1963, Ser. No. 327,139

The portion of the term of the patent subsequent to Dec. 27, 1983, has been disclaimed

Int. Cl. C04b *35/10, 35/14*

U.S. Cl. 106—39 2 Claims



Two polycrystalline oxide bodies formed from respective ternary melts of Al_2O_3—SiO_2—CaO and Al_2O_3—SiO_2—CuO, the grains being ternary solid solutions containing at least 90% Al_2O_3 and 90% CuO, respectively, and at the grain boundaries a thin bonding layer which is the lower melting reaction product of the oxides in the ternary melt.

3,442,668

METHOD OF MANUFACTURING CERAMICS

Michael J. Fenerty, Flint, and Arthur V. Somers, Flushing, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

No Drawing. Filed Aug. 16, 1965, Ser. No. 480,108

Int. Cl. C04b *33/32, 33/02*

U.S. Cl. 106—39 15 Claims

A process for manufacturing ceramics is disclosed. The process consists of the steps of dry grinding in a ball mill a particulate ceramic batch in admixture with a small, but effective amount of organic material having sufficient deflocculant ability to prevent packing in the ball mill and sufficient binding ability to afford green strength for a compacted ceramic article. The dry milled material thus obtained is mixed with water and subsequently spray dried. The ceramic particulate is then compacted and sintered to yield the desired article.

3,442,669

GRAPHITE BEARING HIGH MgO MORTAR

Carl E. Osterholtz, Bethlehem, Pa., assignor to Bethlehem Steel Corporation, a corporation of Delaware

No Drawing. Filed Aug. 16, 1966, Ser. No. 572,673

Int. Cl. C04b *35/52, 35/20*

U.S. Cl. 106—56 6 Claims

This invention is directed to a basic refractory mortar containing not less than 75% magnesia and 5% to 20% graphite which is not less than 60% carbon for use in forming a seal between the snorkel and throat section in a vacuum vessel. All the particles of the mix will pass a 35 mesh screen while 75% of the magnesia particles will pass a 200 mesh screen and 90% of the graphite particles will pass 65 mesh screen. The mortar will remain plastic at elevated temperatures.

3,442,670

CARBON COMPOSITION AND PROCESS

Joseph R. Parsons, Park Forest, Ill., assignor to Chicago Fire Brick Company, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Feb. 14, 1967, Ser. No. 615,890

Int. Cl. C04b *35/52, 25/02*; B22b *1/22*

U.S. Cl. 106—56 5 Claims

Particles of carbon mixed with bonding amounts of pitch, and hydraulic cement. This composition is mixed with water and poured or vibrated into a mold. The carbon-concrete is allowed to set and the shaped product is dried. The final carbon bonding takes place by carbonization of the pitch when the product is used as a refractory under service condition.

3,442,671

COATING COMPOSITION AND PROCESS

Grey F. Rolland, Norristown, and John J. Seipel, Ambler, Pa., assignors to Benjamin Foster Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Apr. 29, 1966, Ser. No. 546,173

Int. Cl. C09d *1/04*

U.S. Cl. 106—84 11 Claims

A water resistant, incombustible inorganic coating composition for use as a protective coating for insulative surfaces, the composition containing a water soluble alkali metal silicate, mica, magnesium aluminum silicates, alkaline soluble salts of both an alkylenediaminepolyalkanoic acid and a hydroxyalkyl derivative thereof, water and, optionally, a filler and a polyalkanolamine.

3,442,672
DIMENSIONALLY STABILIZED CONCRETE AND MORTAR
Leo Kampf, 37—67 48th St., Sunnyside, N.Y. 11104
Filed Aug. 19, 1965, Ser. No. 480,950
Int. Cl. C04b 31/18, 7/32
U.S. Cl. 106—87 2 Claims
A method of making, and a material of, concrete having introduced therein aluminum flake powder in a concentration of 0.005 to 0.010 percent by weight.

3,442,673
MINERAL GRINDING AIDS
Frank G. Serafin, Peabody, Mass., assignor to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut
No Drawing. Filed June 2, 1966, Ser. No. 554,699
Int. Cl. C04b 11/14, 7/54
U.S. Cl. 106—90 8 Claims
Portland cement and minerals are ground with a grinding aid having the formula R—O—X wherein R is alkyl of 1 to 20 carbon atoms, phenyl or naphthyl and X is a metal above hydrogen in the electromotive series.

3,442,674
AQUEOUS ALKALI METAL HYDROXIDE INSOLUBLE CELLULOSE ETHER MEMBRANE
Howard E. Hoyt and Helmuth L. Pfinger, Huntingdon Valley, Pa., assignors to The Borden Company, New York, N.Y., a corporation of New Jersey
No Drawing. Filed Apr. 6, 1965, Ser. No. 446,071
Int. Cl. C08b 21/26; H01m 3/02
U.S. Cl. 106—197 6 Claims
This invention relates to a membrane that is insoluble in an aqueous alkali metal hydroxide medium, said membrane comprising a resin which is a water-soluble C_2–C_4 hydroxyalkyl cellulose ether polymer and an insolubilizing agent for controlled water sorption, a dialytic and electrodialytic membrane and is particularly useful as a separator between electrodes or plates in an alkaline storage battery and will be described in connection therewith.

3,442,675
COATING COMPOSITIONS COMPRISING CIS-1,4-POLYBUTADIENE AND NATURAL DRYING OIL
Klaus Gorke, Hullern, Richard Hilpert, Wiesbaden, and Bernhard Schleimer and Walter Dittman, Marl, Germany, assignors to Chemische Werke Huls Aktiengesellschaft, Marl, Germany, a corporation of Germany
No Drawing. Continuation-in-part of application Ser. No. 358,609, Apr. 9, 1964. This application June 26, 1967, Ser. No. 648,999
Claims priority, application Germany, Apr. 20, 1963, C 29,706; Oct. 5, 1963, C 31,059
Int. Cl. C09d 3/24
U.S. Cl. 106—227 8 Claims
A coating composition having excellent air drying properties comprises a film-forming and binding component consisting largely of 1,4-cis-polybutadiene having a viscosity of from 30 to 30,000 centipoises at 20° C. The coating composition having the foregoing base also contains one or more conventional additives and conventional solvent. It can contain also a minor amount of another coating composition binder ingredient.

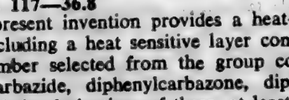
3,442,676
METHOD OF PREPARING A STABLE WAX DISPERSION USING β-1,4 GLUCAN
Alan M. Belfort, Devon, Pa., assignor to FMC Corporation, Philadelphia, Pa., a corporation of Delaware
No Drawing. Filed Dec. 29, 1965, Ser. No. 517,476
Int. Cl. C08h 9/06, 9/08, 9/00
U.S. Cl. 106—271 10 Claims
A method of preparing a stable oil-in-water type wax dispersion wherein a normally solid wax in a fluid state is mixed together with an aqueous dispersion of finely-divided, water-insoluble particles comprising β-1,4 glucan or its derivatives, at least about 1% of the particles having a size no greater than about one micron and a length to diameter ratio greater than one, and solidifying said wax material to obtain a stable dispersion: and stable wax dispersions of the type prepared by said method, are disclosed herein.

3,442,677
CHEMICALLY TREATED CLAYS
John Wesly Balentine, Borger, Tex., and Joseph Iannicelli and James B. Whitley, Macon, Ga., assignors to J. M. Huber Corporation, Locust, N.J., a corporation of New Jersey
No Drawing. Filed May 2, 1966, Ser. No. 546,558
Int. Cl. C04b 33/12
U.S. Cl. 106—288 1 Claim
A method of improving the brightness of kaolin clays by adding organic agents, such as oxalic acid and acid solutions of oxalic acid salts, to a water-clay slurry and subjecting the treated slurry to high speed shearing at an elevated temperature is disclosed.

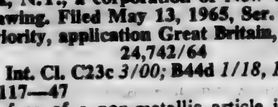
3,442,678
METHOD FOR TREATING RAW PIGMENTARY TITANIUM DIOXIDE
Joseph Ross, Barberton, Ohio, assignor to PPG Industries, Inc., Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed Aug. 31, 1965, Ser. No. 484,094
Int. Cl. C09c 1/36; C01g 23/08
U.S. Cl. 106—300 6 Claims
The preparation of pigmentary metal oxide, e.g., titanium dioxide, by vapor phase oxidation of metal halide, e.g., titanium tetrahalide, is discussed. Raw pigment, i.e., that has had its chemical composition unaltered, is digested in the presence of a soluble fluorine compound in order to improve the pigmentary properties of the pigment.

3,442,679
SULFONATED CARBON BLACKS
Donald Rivin, Framingham, Mass., Jerome Aron, Providence, R.I., and Leighton B. Richards, Cambridge, Mass., assignors to Cabot Corporation, Boston, Mass., a corporation of Delaware
No Drawing. Filed June 27, 1966, Ser. No. 560,904
Int. Cl. C09c 1/44
U.S. Cl. 106—307 8 Claims
A process is provided for the production of tar-free, substantially nonoxidized sulfonated carbon black. Broadly, said process comprises the contacting of carbon black with fuming sulfuric acid at a temperature below the decomposition temperature of the reactants. The sulfur trioxide forming part of the fuming sulfuric acid reacts with the carbon black thereby sulfonating same. Conveniently, the sulfonation reaction is terminated by quenching the reaction mixture with cold water or by neutralization of the reaction mixture with a basic salt.

3,442,680
PRESSURE-SENSITIVE TRANSFER ELEMENTS AND PROCESSES
Douglas A. Newman, Glen Cove, N.Y., assignor to Columbia Ribbon and Carbon Manufacturing Co., Inc., Glen Cove, N.Y., a corporation of New York
Filed Mar. 16, 1967, Ser. No. 623,647
Int. Cl. B41c 1/06
U.S. Cl. 117—36.4 10 Claims
Process for producing a novel pressure-sensitive transfer element such as a carbon paper or business machine ribbon which comprises the steps of applying a liquid ink composition to a foamed film foundation or to a plastic intermediate layer on a foamed film foundation, and solidifying the ink composition to cause it to bond to the irregular surface of the foundation or to the irregular surface of the undercoating which conforms to the surface of the foundation, to form a pressure-sensitive transfer element.



3,442,681
TRANSFER ELEMENTS AND METHOD OF MAKING SAME
Douglas A. Newman, Glen Cove, and Allan T. Schlotzhauer, Locust Valley, N.Y., assignors to Columbia Ribbon and Carbon Manufacturing Co., Inc., Glen Cove, N.Y., a corporation of New York
Filed July 20, 1967, Ser. No. 654,882
Int. Cl. B41c 1/06
U.S. Cl. 117—36.4 10 Claims

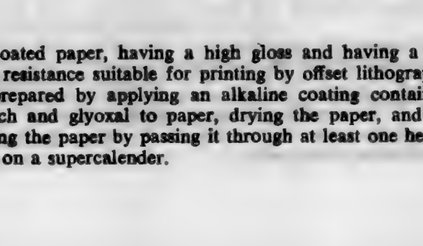


In the manufacture of pressure-sensitive transfer elements of the squeeze-out type, the step of rendering such transfer elements cleaner to the touch and resistant to producing typewriter roller marks on the copy sheet which comprises treating the ink-releasing surface of such transfer elements with a layer of a dilute solution of a resin containing a solid particulate heat-activatable blowing agent, and thereafter applying heat to activate the blowing agent and render said layer porous.

3,442,682
HEAT-SENSITIVE COPY-SHEET
Kaneo Fukawa, Moriguchi-shi, Osaka-fu, Japan, assignor to General Co., Ltd., Osaka-shi, Japan, a corporation of Japan
No Drawing. Filed July 7, 1965, Ser. No. 470,212
Claims priority, application Japan, July 17, 1964, 39/40,150; June 18, 1965, 40/36,016
Int. Cl. B41m 5/22
U.S. Cl. 117—36.8 3 Claims
The present invention provides a heat-sensitive copy-sheet including a heat sensitive layer containing at least one member selected from the group consisting of diphenylcarbazide, diphenylcarbazone, diphenylthiocarbazide, and the derivatives of these, at least one metal salt of an organic acid, at least one white pigment and at least one heat melting material melting in the range from about 60° to 130° C. and miscible at the molten state with the color-developing components and the color-developed compound produced therefrom, and in which an inhibitor of unusual color development may be added, if necessary.

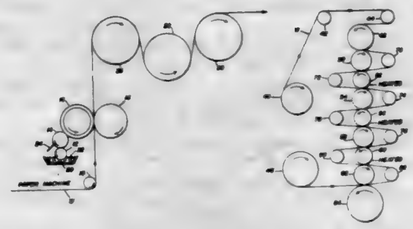
3,442,683
PRODUCTION OF METALLIC COATINGS UPON THE SURFACES OF OTHER MATERIALS
Jean P. Lenoble, Southampton, John Addy, Chandlers Ford, and Bruce P. Piggin, Winchester, England, assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
No Drawing. Filed May 13, 1965, Ser. No. 455,650
Claims priority, application Great Britain, June 15, 1964, 24,742/64
Int. Cl. C23c 3/00; B44d 1/18, 1/092
U.S. Cl. 117—47 2 Claims
The surface of a non-metallic article is metallized by contacting that surface with a solution containing both a solvent liquid capable of attacking and eating away the surface and a seeding metal compound to condition the surface; and, contacting the conditioned surface with a solution of a metal salt to cause the chemical deposition of the metal from the salt solution onto the conditioned surface.

3,442,684
BENT BLADE CLAY COATING
Samuel R. Woodham, Arecibo, Puerto Rico, and Eugene F. Bradley, Mobile, and John D. Collins, Daphne, Ala., assignors to International Paper Company, New York, N.Y., a corporation of New York
Filed Nov. 27, 1963, Ser. No. 326,510
Int. Cl. B44d 1/44; B05c 11/04
U.S. Cl. 117—64 4 Claims



Method and apparatus for forming an improved clay coating on a paper substrate. The clay coating is applied with a doctor blade, specifically a bend portion of such doctor blade.

3,442,685
PREPARATION OF COATED PAPER HAVING HIGH GLOSS AND HIGH WET RUB RESISTANCE
John D. Lohnas, La Vale, Raymond D. Bourdeau, Lonaconing, and Kanwal K. Kalia, Westernport, Md., assignors to West Virginia Pulp and Paper Company, New York, N.Y., a corporation of Delaware
Filed Mar. 7, 1967, Ser. No. 621,250
Int. Cl. B44d 1/46; D21h 1/10
U.S. Cl. 117—65.2 4 Claims



Coated paper, having a high gloss and having a wet rub resistance suitable for printing by offset lithography, is prepared by applying an alkaline coating containing starch and glyoxal to paper, drying the paper, and finishing the paper by passing it through at least one heated nip on a supercalender.

3,442,686
LOW PERMEABILITY TRANSPARENT PACKAGING FILMS

John Willard Jones, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Mar. 13, 1964, Ser. No. 351,680
Int. Cl. B44d *1/14*; C09d *3/66*
U.S. Cl. 117—70 9 Claims



A composite film structure suitable as a packaging film consisting of (1) a flexible, transparent organic base sheet, e.g., polyethylene terephthalate film, having (2) a transparent, heat-sealable top coating of a film-forming organic polymer, e.g., polyethylene; and (3) an intermediate flexible, transparent gas and liquid barrier, glassy coating of an inorganic material such as a silicon oxide, said intermediate coating having a thickness within the range of from 0.02 to 2 microns.

3,442,687
VAPOR-IMPERMEABLE COATED POLYOLEFIN SUBSTRATES

Lamont Hagan, Guilford, Conn., assignor to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

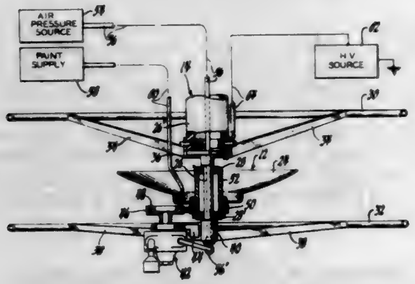
No Drawing. Filed Dec. 8, 1965, Ser. No. 512,550
Int. Cl. B44d *1/22*
U.S. Cl. 117—72 5 Claims

Polyolefin articles having an improved vapor-impermeable vinylidene chloride interpolymer coating are produced by a process comprising applying a solution of a vinylidene chloride to a polyolefin substrate to which has been applied an intermediate coating of an ethylene-vinyl acetate copolymer.

3,442,688
ELECTROSTATIC SPRAY COATING METHOD AND APPARATUS THEREFOR

William S. Pettigrew, Pleasant Ridge, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Nov. 13, 1964, Ser. No. 411,040
Int. Cl. B05b *15/04*
U.S. Cl. 117—93.4 13 Claims



A centrifugal paint atomizing device is surrounded by a shielding device and voltage is applied to the assembly in such a manner that the electrical field intensity at the edge of the atomizing device is sufficient to effect charging of the paint but insufficient to effect electrostatic atomization of the paint.

3,442,689
METHOD OF PLASTICIZING RUBBER FILMS

Robert M. Nelson, Arlington, Gordon E. Gott, Wayland, and John J. Lynch, Arlington, Mass., assignors to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut

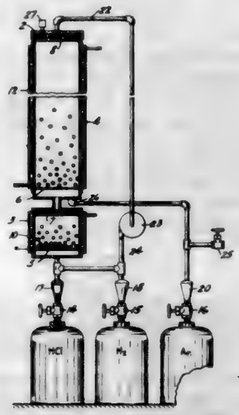
No Drawing. Filed Sept. 27, 1965, Ser. No. 490,696
Int. Cl. B05b *13/06*; B05c *3/04, 3/05*
U.S. Cl. 117—94 13 Claims

Inflatable rubber articles (e.g., neoprene meteorological balloons) are post-plasticized by tumbling the article in its uninflated state in the presence of a predetermined amount of plasticizer (e.g., ethylene glycol monobutyl ether oleate solution) until substantially all of the plasticizer has been absorbed.

3,442,690
COATING SOLID PARTICLES WITH REFRACTORY METALS

John S. Peake, North Oaks, and Robert P. Arens, St. Paul, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed May 13, 1964, Ser. No. 367,253
Int. Cl. C23c *13/02*
U.S. Cl. 117—100 3 Claims



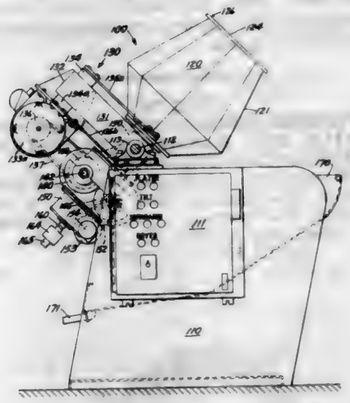
Process for coating materials with refractory metals in which volatile refractory metal halides are formed in a heated reaction chamber by the action of a gas mixture consisting of hydrogen and a hydrogen halide on the metal, the reaction mixture is passed into a heated coating chamber in which a fluidized bed of particles is coated by reduction of the refractory metal halide to the corresponding metal, and the hydrogen and hydrogen halide gases effluent from the coating chamber are directly recirculated to the reaction chamber. The process avoids the necessity for handling refractory metal halides and is very economical of materials.

3,442,691
SURFACE TREATING OF ARTICLES BY ROTATING AND RECIPROCATING THE TREATMENT CONTAINER

John W. Pearson, Mendota Heights, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Continuation of application Ser. No. 312,220, Sept. 27, 1963. This application Jan. 23, 1968, Ser. No. 701,014
Int. Cl. B05c *3/08, 3/04*; B01f *9/02*
U.S. Cl. 117—109 3 Claims

Mechanical plating operations are carried out in a container which is simultaneously slowly rotated and rapidly axially reciprocated. The container may be mounted at one end of a cantilevered leaf spring, a single motor simultaneously rotating the shaft and driving eccentric weights which sinusoidally deflect the spring. The plated parts, liquid, impact media, and other contents of



the barrel may be discharged into one end of an operatively connected open-ended separating or post-treating drum, which tumbles the parts when rotated in one direction and discharges them from the other end when rotated in the opposite direction.

3,442,692
METHOD OF CONDITIONING FABRICS

Conrad J. Gaiser, 6909 Seaside Walk, Long Beach, Calif. 90803

Filed Aug. 13, 1965, Ser. No. 479,590
Int. Cl. B44d *1/46*
U.S. Cl. 117—120 8 Claims

Fabrics are conditioned by commingling the same in a laundry dryer by tumbling them together with a flexible substrate carrying a softening or other modifying agent whereby the agent is transferred to the fabrics.

3,442,693
METHOD FOR MAKING AN INSULATOR

Robert F. Rea, Bloomfield Hills, Mich., assignor to Champion Spark Plug Company, Toledo, Ohio, a corporation of Delaware

Filed Apr. 15, 1966, Ser. No. 542,928
Int. Cl. H01t *13/52, 13/38*
U.S. Cl. 117—123 6 Claims

1. In a method for producing an electrically insulating ceramic body for a spark plug igniter assembly, which method includes the steps of forming a high alumina, spark plug ceramic batch material vitrifiable upon firing to about Cone 31 into a required shape, including a gap surface along which a spark travels when the insulating body is in use as a part of an igniter assembly, and firing the shape to vitrification, the improvement of adding a hydrophobic material in an amount in the order of two percent by weight to said batch material, firing the shape at an elevated temperature in the order of 1500° F. for approximately three minutes, impregnating the fired shape with an aqueous solution comprising about 0.58 gram per milliliter of platinum, drying the shape, and reimpregnating and drying the shape repeatedly until the desired concentration of platinum is achieved, prior to the firing of the shape to vitrification.

3,442,694
PROCESS FOR SOFTENING FABRIC AND PRODUCT THEREOF

Arnold Maurice Sookne, Silver Spring, Md., and Julian Berch, Washington, D.C., assignors, by mesne assignments, to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Apr. 28, 1965, Ser. No. 451,623
Int. Cl. C03c *25/00*
U.S. Cl. 117—126 3 Claims

A process for softening nylon or fiber glass which comprises applying to said material a coating of 0.05 to 5% by weight of the material of an emulsion of oxidized homopolymers and copolymers of ethylene, having a density in the range of 0.935 to 1.05 g./cc. and a carboxyl content of 0.2 to 2.0 milliequivalents/g.

3,442,695
COMPOUNDS AS TEXTILE SOFTENERS

Lyle F. Elmquist, North St. Paul, Minn., assignor to General Mills, Inc., a corporation of Delaware

No Drawing. Original application July 16, 1964, Ser. No. 383,256, now Patent No. 3,377,382, dated Apr. 9, 1968. Divided and this application Oct. 13, 1967, Ser. No. 675,066
Int. Cl. B32b *33/00*; C07c *83/00*; C10m *7/30*
U.S. Cl. 117—139.5 6 Claims

Softened textile materials and the process of softening textiles which involves the application thereto of quaternary ammonium compounds in which two substituents on the nitrogen are derived from the residual fatty acid monomer left after polymerization of higher fatty acids and the remaining two substituents are lower alkyl groups.

3,442,696
WATER RESISTANT LEATHERS AND FUR SKINS

Hans Markert and Rudi Heyden, Dusseldorf, Germany, assignors to Böhme Chemie Gesellschaft mit beschrankter Haftung, Dusseldorf-Benrath, Germany, a corporation of Germany

No Drawing. Filed Aug. 18, 1965, Ser. No. 480,768
Claims priority, application Germany, Oct. 10, 1964, B 78,869
Int. Cl. C14c *9/00*
U.S. Cl. 117—141 4 Claims

A method and compositions for rendering furs and leather water resistant and to the said leather and furs so treated where the water-proofing agent is a condensation product of ethylene oxide and a highly branched alcohol of 12 to 20 carbon atoms.

3,442,697
ADHERENT CELLULOSE FILM COMPRISING NEGATIVELY CHARGED ALDEHYDE

William P. Kane, Bon Air, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 28, 1965, Ser. No. 517,117
Int. Cl. B44d *1/14, 1/20*; C08d *13/16*
U.S. Cl. 117—145 14 Claims

Positively charged regenerated cellulose film characterized by improved adhesion comprising cationic additive and negatively charged aldehyde polymer and process for its preparation.

3,442,698
CELLULOSIC WEBS TREATED WITH A DERIVATIVE OF AN ALKYL VINYL ETHER/MALEIC ANHYDRIDE INTERPOLYMER

Dale R. Dill and Donald N. Van Eenam, St. Louis, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Feb. 4, 1966, Ser. No. 525,113
Int. Cl. C08c *17/16*
U.S. Cl. 117—155 8 Claims

Cellulosic webs treated with a water dispersible de-

rivative of an alkyl vinyl ether/maleic anhydride interpolymer.

3,442,699

ELECTRIC SIGNAL RECORDING BLANK

Harold R. Dalton, 931 Rydal Road, Jenkintown, Pa. 19046

Filed Aug. 16, 1965, Ser. No. 479,904
Int. Cl. B44d *1/18, 1/14;* H01b *1/04*
U.S. Cl. 117—201 25 Claims



An improved multilayer recording blank is made by the inclusion of a masking layer. This layer contains dispersed throughout finely divided particles of a ferroelectric or ferromagnetic material. A nonconducting pigment may be included. A second layer, below the masking layer is an electrically conducting layer composed of a continuous sheet or film having dispersed therein an electrically conductive material such as carbon. Clearer and sharper recordings result especially when a facsimile system uses a plurality of styli.

3,442,700

METHOD FOR THE DEPOSITION OF SILICA FILMS

Satoshi Yoshioka, Nishinomiya-shi, and Shigetoshi Takayanagi, Kyoto-shi, Japan, assignors to Matsushita Electronics Corporation, Osaka, Japan, a Corporation of Japan

Filed Dec. 23, 1966, Ser. No. 604,277
Claims priority, application Japan, Dec. 27, 1965, 41/138
Int. Cl. C23c *13/04*
U.S. Cl. 117—201 4 Claims

Deposition of a silica film on the surface of semiconductor substrates.

The film is dense and pure, and suitable for use as a passitivating film in the semiconductor devices such as transistors, diodes and integrated circuit.

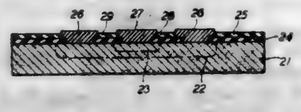
Silicon fluoride (conc. 0.0005–0.1%) accompanied by a carrier gas and steam is passed on the surface of the semiconductor at a temperature above 650° C., said steam being 20–1000 times the silicon fluoride. Preferable carrier gas is nitrogen, argon, helium, neon, oxygen, carbon dioxide.

3,442,701

METHOD OF FABRICATING SEMICONDUCTOR CONTACTS

Martin P. Lepselter, New Providence, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed May 19, 1965, Ser. No. 457,056
Int. Cl. B44d *1/18;* C23c *15/00*
U.S. Cl. 117—212 5 Claims



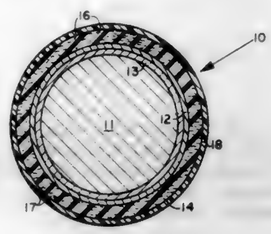
A method of fabricating electrodes on a semiconductor device in order to avoid the unsatisfactory technique of chemical etching. A silicon oxide mask is deposited on the surface of a semiconductor body, the mask conforming to the desired electrode geometry. A first layer of refractory metal from the group consisting of titanium, zirconium, vanadium and hafnium is deposited over the masked and unmasked portions of the semiconductor body and a second layer of platinum, nickel or gold is deposited over the first metal layer. Portions of the second metal are removed by a back-sputtering technique to conform to the electrode geometry defined by the silicon oxide mask. Then, the refractory metal is converted to an insulating oxide by low temperature heat treatment when exposed to oxygen.

3,442,702

HIGH-TEMPERATURE MAGNET WIRE AND APPARATUS AND ENAMEL COMPOSITION FOR THE INSULATION THEREOF

Wesley W. Pendleton, Muskegon, Mich., and George W. Ostrander, New Lebanon, Ohio, assignors to Anaconda Wire and Cable Company, a corporation of Delaware

Filed Aug. 4, 1965, Ser. No. 477,248
Int. Cl. H01b *1/02;* B44d *1/42*
U.S. Cl. 117—217 7 Claims



Electrical insulation for use at high temperatures is made up of a matrix of glass fused with 10–30 parts of its weight of ceramic particles; the composition of the glass being, in parts by weight: SiO_2, 32–96; BaO, 25–35; K_2O 10–13; Na_2O, 4–6; Li_2O, 1–3; ZnO, 6–10; CaF_2, 1–4; CaO, 0–1.2; NiO, 0–1.2.

3,442,703

PLURAL COATED ELECTRICAL CONDUCTOR

Arthur B. Naselow, Philadelphia, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 6, 1965, Ser. No. 511,972
Int. Cl. B44d *1/18, 1/28, 1/42*
U.S. Cl. 117—218 6 Claims

An article coated with multiple resin layers with (A) at least one coating layer consisting essentially of a cured polyamide-imide, and (B) at least one coating layer consisting essentially of a polyimide formed by curing a condensation product of a dianhydride of pyromellitic acid and oxydianiline.

3,442,704

PROCESS FOR REMOVING STARCH FROM SORGHUM JUICES

Burns A. Smith, Weslaco, Tex., assignor to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Nov. 4, 1966, Ser. No. 592,685
Int. Cl. C13d *3/00;* B01d *21/01*
U.S. Cl. 127—50 1 Claim

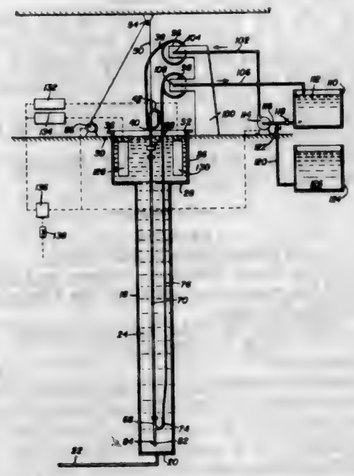
1. The process for removing starch granules from raw sorghum juice which process consists in its entirety of the following steps all carried out at a temperature not exceeding 60° C.: (1) adjusting the juice density, within the range 12°–15° Brix; (2) adjusting the juice to a pH of about from 7.5–7.7 with a member selected from the group consisting of magnesium hydroxide, calcium hydroxide and mixtures thereof to produce a floc in the juice; (3) incorporating into the juice a flocculating additive in the amount of from 3 to 5 parts per million; and (4) separating the floc from the clarified juice to produce a sorghum juice substantially free from starch granules.

3,442,705

METHOD FOR CLEANING FLEXIBLE HOSES AND PIPES

Robert T. Wheatley, P.O. Box 1017, Las Cruces, N. Mex. 88001

Filed Feb. 16, 1966, Ser. No. 527,809
Int. Cl. B08b *3/08, 3/10*
U.S. Cl. 134—1 3 Claims



A method of cleaning the interior surface of a flexible metal hose or the like in which the hose is immersed in a liquid bath with the liquid circulating through the hose, subjecting the liquid bath to an ultrasonic wave field and sequentially moving portions of the hose through the wave field. After cleaning, the hose is flushed without exposing the interior surfaces to a contaminating environment and while the hose is immersed in the liquid bath, it is oriented vertically.

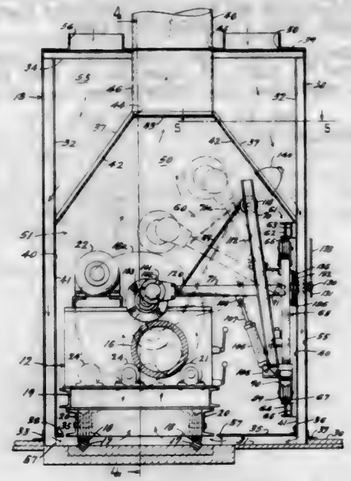
3,442,706

METHOD AND APPARATUS FOR COOLING AND CLEANING A CENTRIFUGAL CASTING

William A. Derrick, Sandusky, Ohio, assignor to Sandusky Foundry & Machine Company, Sandusky, Ohio, a corporation of Ohio

Filed Dec. 10, 1965, Ser. No. 512,887
Int. Cl. B08b *5/04, 15/02;* B22d *45/00*
U.S. Cl. 134—6 6 Claims

A method and apparatus for cooling and cleaning a centrifugal casting. The hot casting is placed on a support and is moved into an enclosed walled chamber. The casting is slowly rotated and a cooling media, for example ambient air, is introduced through a passageway defined by a double wall into a lower portion of the chamber. An arm, having a rotary brush at its outer end, is reciprocally mounted along one longitudinal wall of the chamber and is effective to clean the exterior periphery of the casting. Waste particles and the heat transfer air are discharged from the upper part of the chamber.

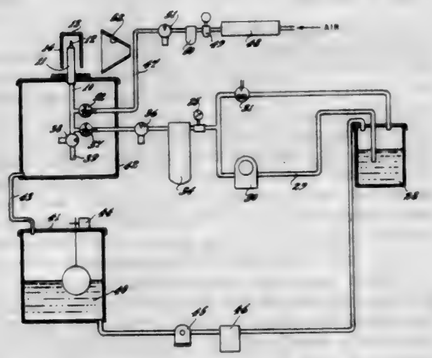


3,442,707

APPARATUS AND PROCESS FOR CLEANING COLLAPSIBLE TUBES

Henry S. Dzedzej, Wallingford, Pa., assignor to A. H. Wirz, Inc., Chester, Pa., a corporation of Pennsylvania

Filed July 21, 1965, Ser. No. 473,598
Int. Cl. B08b *9/00*
U.S. Cl. 134—24 3 Claims



A process and device for cleaning the interior of a collapsible tube having a cap attached at one end in which the tube is supported on a mandrel having a shoulder adjoining a shoulder in the tube and having one or preferably a plurality of orifices through the shoulder, the mandrel having a shank which has a close clearance to create a flow of solvent parallel to the size of the tube.

3,442,708

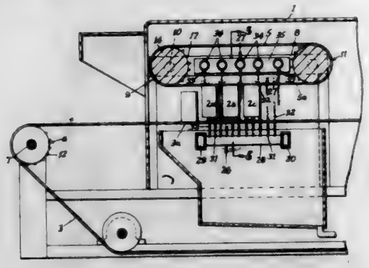
HANDLING AND CLEANING FRAGILE CONTAINERS

Harley E. Huddle, Cincinnati, Ohio, assignor to Cincinnati Cleaning and Finishing Machinery Company, Cincinnati, Ohio, a corporation of Ohio

Original application Jan. 7, 1965, Ser. No. 424,020, now Patent No. 3,291,143, dated Dec. 13, 1966. Divided and this application Aug. 30, 1966, Ser. No. 565,354

Int. Cl. B08b 11/02; B67c 1/04

U.S. Cl. 134—32 7 Claims



The method of cleaning and conveying open top fragile containers, the containers being advanced in inverted position and lifted into contact with a traveling conveyor overlying the containers by means of a series of sprays directed upwardly from beneath the advancing containers, the containers being maintained in contact with the overlying conveyor solely by means of the sprays.

3,442,709

LAYER-BUILT ALKALINE CELL

Yoshio Hayase, Tokyo, Japan, assignor to Fuji Denki Kagaku Kabushiki Kaisha, Tokyo, Japan

Filed Sept. 13, 1966, Ser. No. 579,081

Claims priority, application Japan, Oct. 13, 1965, 40/62,415

Int. Cl. H01m 35/04, 23/04

U.S. Cl. 136—6 15 Claims

1. A layer-built alkaline cell comprising, in combination, plural cell units arranged in contiguous stacked relation in electrical connection with terminals of corresponding polarity facing in the same direction; each cell unit comprising an electrically conductive metal casing portion forming one cell unit terminal, an electrically conductive metal cap portion forming the other cell unit terminal, a pair of electrodes and an electrolyte encased within the assembled metal cap and casing portions, and a packing ring of dielectric material interposed and under pressure between peripheral portions of said metal casing and cap portions and electrically isolating said metal cell unit portions from each other, said packing ring, upon a predetermined increase in the pressure of gas evolved within the associated cell unit, providing for slight separation of one of said metal cell unit portions from said ring for venting of such gas with substantial restriction of any leakage of electrolyte from within the associated cell unit; a respective electrolyte absorbing member peripherally embracing at least one metal cell unit portion of each cell unit; and electrolyte-proof casing means peripherally embracing and encasing the stacked cell units and restraining outward longitudinal movement of the outwardly facing metal portions of the two end cell units while providing venting of gas from the interior of said casing means.

3,442,710

METHOD OF IMPREGNATING POROUS NICKEL ELECTRODES WITH ACTIVE MATERIAL

Claude J. Menard, St. Paul, Minn., assignor to Gould-National Batteries, Inc., a corporation of Delaware

Filed Oct. 16, 1964, Ser. No. 404,308

Int. Cl. H01m 43/04

U.S. Cl. 136—29 11 Claims

1. A method of impregnating porous nickel electrodes with positive active material which comprises:

(a) impregnating the electrode matrices with nickel nitrate solution having a specific gravity of approximately 1.78–1.80 at a temperature within the range 70° C.–100° C. by soaking them in said solution for from two to six minutes;

(b) draining the excess nickel nitrate solution from the electrode matrices;

(c) decomposing the nitrate remaining in the pores of the matrices under a vacuum between 40 and 70 centimeters of mercury, at temperatures of from 150° C. to 300° C., for a period of time from about 15 minutes to about 35 minutes;

(d) soaking the matrices containing the decomposed nitrate in a second solution comprising warm hydroxide selected from the group consisting of KOH and NaOH at a temperature within the range 70° C.–100° C. for a period of 15 minutes;

(e) separating the electrodes resulting from step (d) from said second solution, and

(f) washing the electrodes in hot deionized water at temperature not exceeding 100° C.

3,442,711

HYDRAZINE FUEL CELL

Wolf Vielstich, Bonn, Germany, assignor to Federal Republic of Germany, represented by the Minister of Defense, Bonn, Germany

Filed June 22, 1964, Ser. No. 378,484

Int. Cl. H01m 27/00

U.S. Cl. 136—86 15 Claims

1. A fuel cell comprising, in combination, a housing; an alkaline electrolyte located in said housing and having hydrazine distributed therethrough; a fuel electrode consisting essentially of a coherent continuous body formed of at least one metal of group VIII of the periodic system and being free of metals of groups II and III of the periodic system in contact with said electrolyte; and a metal-free carbon electrode spaced from said fuel electrode and in contact with said electrolyte.

3,442,712

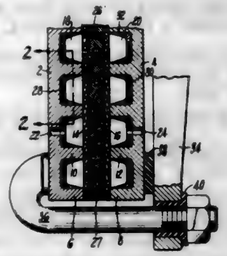
FUEL CELL WITH ABSORBENT MEANS FOR REMOVING OR SUPPLYING ELECTROLYTE

Frank Roberts, Jr., Manchester, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed July 13, 1966, Ser. No. 564,984

Int. Cl. H01m 27/12

U.S. Cl. 136—86 6 Claims



1. A fuel cell having opposed electrodes, an electrolyte matrix positioned between the electrodes, plates cooperating with the electrodes to form gas spaces on the sides of the electrodes opposite to the electrolyte matrix, and an absorbent lining on the inside of at least one of the cover plates and spaced from at least one of the electrodes over the greater part of its area and in contact with said one electrode over a lesser part of its area, said lining having a capillary potential that is below that of the electrolyte matrix and said one electrode.

3,442,713

COMBINED ELECTROLYTE-ELECTRODE FOR FUEL CELLS AND METHOD OF FABRICATION

Helmut Tannenberger, Geneva, and Herbert Schachner, Grand-Lancy, Geneva, Switzerland, assignors to Compagnie Francaise de Raffinage, Paris, France

No Drawing. Filed July 14, 1966, Ser. No. 565,084

Claims priority, application Switzerland, June 10, 1966, 8,456/66

Int. Cl. H01m 27/02

U.S. Cl. 136—86 12 Claims

1. A combination solid electrolyte-electrode structure for forming the electrolyte and one electrode in a fuel cell of the character described comprising a thin and substantially gas-tight and non-porous layer of solid inorganic electrolyte material, a thin porous and rough layer of substantially the same solid electrolyte material integrally formed on one surface of said non-porous layer, and a metallic electrode layer over the surface of said porous and rough layer and extending substantially continuously over the outer surface and down into the pores thereof, the thickness of said metal layer being substantially no greater than about half the diameter of said pores for providing an essentially rough and porous metal-covered surface having increased specific effective surface area of the interface between said porous electrolyte layer and said metal layer.

5. A method for producing combination solid electrolyte-electrode structures for forming the electrolyte and one electrode in fuel cells of the character described comprising in combination the steps of forming a substantially non-porous thin layer of solid inorganic electrolyte material in the shape of said structure, forming on one surface of said non-porous layer a thin porous and rough layer of substantially the same solid electrolyte material, uniting and integrating said porous and non-porous layers into a self-sustaining solid electrolyte structure for said fuel cells, depositing on and over the surface of said porous and rough layer a metal electrode layer extending substantially continuously over said surface and into the pores thereof, the thickness of said metal layer being substantially no greater than about half the diameter of said pores.

3,442,714

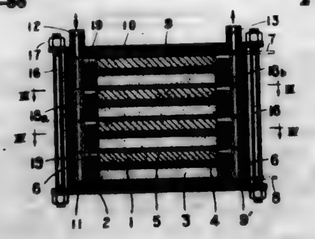
FUEL CELLS

Shiro Matsuno, Takatsuki, Osaka Prefecture, Japan, assignor to Yuasa Battery Company Limited, Takatsuki, Japan, a corporation of Japan

Continuation of application Ser. No. 215,029, Aug. 6, 1962. This application Feb. 27, 1968, Ser. No. 708,726

Int. Cl. H01m 27/04

U.S. Cl. 136—86 2 Claims



A fuel cell comprising a hollow tube containing within the tube a plurality of individual cells connected in series. Each cell comprises two electrodes, and each of the electrodes comprises a mass of unbonded discrete granules. The electrodes are separated from each other by a gas impervious separator, and the electrodes of adjacent cells are separated from each other by a gas impervious member across the tubular frame which are electrically conductive. Passageways are provided through the frame to supply oxidizing and fuel gases to the respective electrodes.

3,442,715

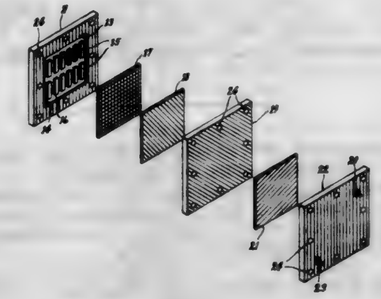
METHOD OF MAKING DIFFUSION MEMBRANE ELECTRODES FROM VISCO ELASTIC DOUGH

Wung Dai Yee, Framingham, and Max C. Deibert, Needham Heights, Mass., assignors to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

Filed Mar. 1, 1965, Ser. No. 435,827

Int. Cl. H01m 27/06

U.S. Cl. 136—122 16 Claims



1. In the method for making a diffusion membrane electrode which is a continuous network of interconnected polymer particles coated with electrode materials, which method comprises the steps of:

(1) forming a homogeneous viscoelastic dough by mixing a particulate material comprising at least about 20% by volume of a conductive carbon electrode material with a polymeric binder and a liquid dispersion medium in proportions including about the maximum liquids:solids ratio producing a rubbery viscoelastic dough,

(2) spreading the dough into a viscoelastic membrane of electrode thickness without substantially changing the liquid content of said dough, and

(3) heating said membrane to cure it;

the improvement wherein said liquid dispersing medium includes an organic liquid medium in an amount equivalent to at least about 50% by weight of said liquid dispersing medium.

3,442,716

ALKALINE CELL

Ichiro Muraki, Hamamatsu-shi, Takashi Tsuchida, Kosai-cho, Kenichi Shinoda, Toyohashi-shi, and Shoji Maruyama, Kosai-cho, Japan, assignors to Fuji Denki Kagaku Kabushiki Kaisha, Tokyo, Japan, a corporate body of Japan

Filed Sept. 5, 1967, Ser. No. 665,513

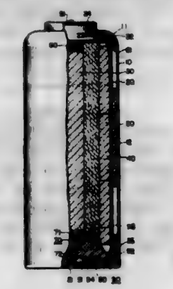
Claims priority, application Japan, Oct. 31, 1966, 41/100,808

Int. Cl. H01m 1/02

U.S. Cl. 136—133 8 Claims

An alkaline dry cell free from electrolyte creepage and leakage is constructed having an anode metal case and a cathode metal case. The cathode case has an opening facing the bottom of the anode case and holds active cell materials in place. A cathode cap with a venting structure

is fitted over the top surface of the cathode case. The cell has a first insulating sealing member as a top closure. An insulating liquid absorbing member prevents seepage of any electrolyte from between the cathode case and



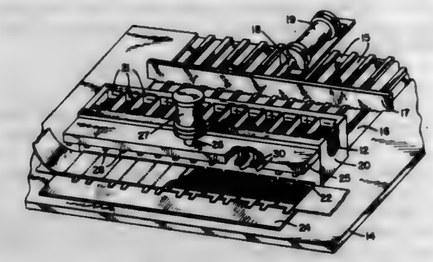
the anode case. The anode has a current collector, a pointed portion of which perforates through a second bottom insulating sealing member and is electrically connected with the anode case.

3,442,717

PROCESS FOR ENVELOPING BATTERY ELECTRODE PLATES IN SEPARATORS

Lutz Horn, Hagen, Westphalia, Fritz Philipp, Hagen-Haspe, Westphalia, and Heinz Haake, Rummenohl, Westphalia, Germany, assignors to Varta Aktiengesellschaft, Hagen, Westphalia, Germany

Filed Oct. 1, 1965, Ser. No. 492,171
Claims priority, application Germany, Oct. 2, 1964, V 26,890
Int. Cl. H01m 3/04
U.S. Cl. 136—176 4 Claims



The flat negative and positive plates for a battery are assembled by enclosing them between two strips of suitable separator material and then fusing the material together between adjacent plates so that the plates are contained in pockets formed by the separator strips.

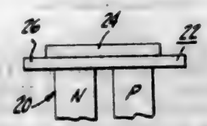
3,442,718

THERMOELECTRIC DEVICE HAVING A GRAPHITE MEMBER BETWEEN THERMOELEMENT AND REFRACTORY HOT STRAP

Andrew G. F. Dingwall, Cedar Grove, and Dale K. Wilde, Brookside, N.J., assignors to Radio Corporation of America, a corporation of Delaware

Filed Oct. 23, 1965, Ser. No. 502,945
Int. Cl. H01v 1/30
U.S. Cl. 136—205 12 Claims

1. A thermoelectric device comprising a pair of semiconductor material thermoelements of opposite type conductivity, and a hot strap joining said thermoelements, said hot strap comprising a refractory member of a material other than graphite and said thermoelement semiconductor materials, said refractory member having a high thermal and electrical conductivity, and at least one member of graphite, said refractory member and said graphite member being bonded to one another, and said graphite member being bonded to one of said thermoelements and being disposed between said one thermoelement and said refractory member.



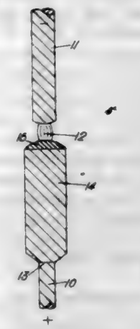
12. A thermoelectric device comprising thermoelements of a silicon-germanium alloy, and a hot strap comprising, in the order named, a graphite member including silicon, a layer of a eutectic of titanium, and a tungsten member, and said graphite member being bonded to said thermoelements.

3,442,719

METHOD OF GROWING A CRYSTAL OR CRYSTALLINE LAYER BY MEANS OF A DIRECT CURRENT ARC DISCHARGE

John R. Drabble, Exeter, Devon, and Anthony William Palmer, Bristol, England, assignors to National Research Development Corporation, London, England, a British corporation
Continuation-in-part of application Ser. No. 492,728, Oct. 4, 1965. This application May 24, 1968, Ser. No. 731,826

Claims priority, application Great Britain, May 26, 1967, 24,721/67
Int. Cl. H01l 7/00
U.S. Cl. 148—1.6 17 Claims



A method of growing a crystal of a given material is described wherein the crystal forms part of one electrode of a given polarity of a direct current arc discharge, while the other electrode of opposite polarity is formed at least in part of the said material and is consumable to transfer the material to the first-mentioned electrode.

3,442,720

METHOD OF FORMING Ti-MODIFIED SILICIDE COATINGS ON Cb-BASE SUBSTRATES AND RESULTING ARTICLES

Elihu F. Bradley, West Hartford, Conn., and Edwin S. Bartlett, Worthington, and Horace R. Ogden and Robert I. Jaffee, Columbus, Ohio, assignors, by direct and mesne assignments, to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Oct. 23, 1965, Ser. No. 506,144
Int. Cl. C23f 7/00; C22c 27/00
U.S. Cl. 148—6.3 26 Claims

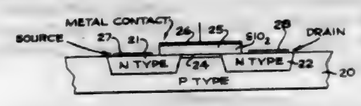
Oxidation resistant articles are provided comprising a Cb-base alloy substrate having superimposed thereon a surface coating zone consisting essentially of columbium silicide modified by 7–35% by weight of the coating of a metal modifier selected from the group consisting of Ti, and Ti in combination with at least one of V and Cr. A pack cementation process is preferably employed for depositing the silicide coating.

3,442,721

SEMICONDUCTING DEVICE

James O. McCaldin, Los Angeles, and Alois E. Widmer, Canoga Park, Calif., assignors to North American Rockwell Corporation

Original application Oct. 26, 1964, Ser. No. 406,449, now Patent No. 3,328,210, dated June 27, 1967. Divided and this application July 18, 1966, Ser. No. 574,855
Int. Cl. H01l 3/12, 7/54, 11/00
U.S. Cl. 148—33 2 Claims



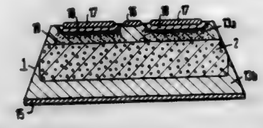
This invention relates to a product having a thin film of dielectric material such as silicon oxide overlying a substrate of semiconducting material where the dielectric layer contains ions implanted by bombardment. These ions induce a space charge in the underlying semiconductor and induce conduction electrons in the crystal to congregate near the dielectric layer and form a space charge.

3,442,722

METHOD OF MAKING A pnpn THYRISTOR

Rudolf Bäuerlein, Erlangen, and Kurt Raithel, Uttenreuth, Germany, assignors to Siemens Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany

Filed Oct. 21, 1965, Ser. No. 500,393
Claims priority, application Germany, Dec. 16, 1964, S 94,642
Int. Cl. H01l 11/10, 7/54
U.S. Cl. 148—178 4 Claims



Described is a method of producing pnpn thyristors. This method comprises indiffusing, into a middle p-conducting region serving as a p-base, recombination material up to the innermost pn-junction, and forming recombination centers in the inner n-conducting region, serving as an n-base, by corpuscular radiation, with particle energies greater than ½ mev. and a radiation dosage between 1 and 1000 μa. sec./cm.^{2}.

3,442,723

METHOD OF MAKING A SEMICONDUCTOR JUNCTION BY DIFFUSION

Kinji Wakamiya, Higashimurayama-shi, Tokyo, Japan, assignor to Sony Corporation, Tokyo, Japan, a corporation of Japan

Filed Dec. 27, 1965, Ser. No. 516,520
Claims priority, application Japan, Dec. 30, 1964, 39/56
Int. Cl. H01l 7/44
U.S. Cl. 148—186 4 Claims

Preparation of transistor for high voltage switching circuits wherein an impurity is diffused into a wafer of one conductivity type to convert its surface into the opposite conductivity type, the wafer is cut to expose an area of the original conductivity, a second impurity is diffused through the exposed area to form a high impurity concentration layer, and another impurity of the opposite conductivity type is diffused into predetermined, discrete areas of the high impurity concentration layer.



3,442,724

SEMI-CONDUCTOR ELEMENTS WITH DISTURBED CRYSTALLINE SURFACE STRUCTURE IN A JUNCTION AREA

Roswitha Glück, Burstadt, Edgar Lutz, Feucht, and Horst Riess and Klaus Weinmann, Lampertheim, Germany, assignors to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company

Filed July 6, 1966, Ser. No. 563,170
Claims priority, application Germany, July 10, 1965, B 82,778
Int. Cl. H01l 11/06
U.S. Cl. 148—187 3 Claims

In a method of making a semi-conductor element regions of different conductivity (pn) are first established in the body of the element. The entire surface of one face of the body is then abrasion lapped to create a disturbed zone, this surface is then masked, a portion of the mask is removed to expose a portion of the disturbed zone underneath, and a doping substance is then diffused into this portion of the disturbed zone to form bordering zones of opposing semi-conductivity type or zones of like conductivity type but of different conductance. The junctions thus established by the bordering zones are protected by the mask.

3,442,725

PHOSPHORUS DIFFUSION SYSTEM

Tommie R. Huffman, Tempe, and Gary G. Ehlenberger and Robert A. McDonald, Phoenix, Ariz., assignors to Motorola Inc., Franklin Park, Ill., a corporation of Illinois

Filed May 5, 1966, Ser. No. 548,013
Int. Cl. H01l 7/44
U.S. Cl. 148—189 3 Claims

A monocrystalline semiconductor element is doped with a phosphorus-comprising impurity by a method which includes the steps of forming a gas mixture of the dopant and a diluent gas, then metering at least a portion of the mixture into a mainstream of diluent gas, and then contacting the semiconductor element with the resulting gas mixture at a diffusion temperature. The diffusion of phosphorus is terminated while the conductivity of the diffused region is less than about 1.2×10^3 (ohm-centimeters)$^{-1}$.

3,442,726

PARTICULATE NITRONIUM PERCHLORATE COATED WITH A COMPLEX PYRIDINE SALT

Thomas P. Rudy, Saratoga, and Toshio William Nakagawa, San Jose, Calif., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

No Drawing. Filed Sept. 27, 1963, Ser. No. 311,957
Int. Cl. C06b 15/02, 19/02
U.S. Cl. 149—7 2 Claims

1. Particulate matter comprised of a core of nitronium perchlorate coated with a surface layer of a complex pyridine salt, said complex pyridine salt formed from nitronium perchlorate and a component selected from the

group consisting of pyridine and oxidation-resistant pyridine derivatives.

3,442,727
EMULSIFIED NITRIC ACID BLASTING COMPOSITION AND METHOD OF PREPARING SAME
James R. Thornton, Tamaqua, Pa., assignor to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware
No Drawing. Filed Aug. 3, 1967, Ser. No. 658,021
Int. Cl. C06b *1/04*
U.S. Cl. 149—46 15 Claims

An emulsified nitric acid blasting composition is prepared with an aqueous nitric acid solution forming a water phase of the emulsion, a carbonaceous fuel forming an oil phase of the emulsion, and said phases emulsified by mono-or di-esters of phosphoric acid or salts thereof. The new blasting composition is found to have improved stability and explosive performance characteristics.

3,442,728
GELLED NITRIC ACID BLASTING AGENT
Robert Alan Simpson, San Mateo, Calif., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Continuation-in-part of application Ser. No. 592,750, Nov. 8, 1966. This application Dec. 29, 1967, Ser. No. 694,384
Int. Cl. C06b *1/04*
U.S. Cl. 149—56 10 Claims

Blasting composition comprising nitric acid, a gelling agent and a nitric acid-miscible, soluble or reactive organic fuel comprising a nitroaromatic compound. The composition can contain as an additional fuel a nitric acid miscible, soluble or reactive nitroparaffin compound. The composition can also contain additional materials such as oxidizers, density modifiers, or cross-linking agents.

3,442,729
AQUEOUS INORGANIC OXIDIZER SALT EXPLOSIVES AND ACRYLAMIDE POLYMERS AS THICKENER THEREFOR
Herbert G. Knight, Jr., Flanders, N.J., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Dec. 28, 1967, Ser. No. 694,097
Int. Cl. C06b *1/04*
U.S. Cl. 149—60 12 Claims

Pourable inorganic oxidizer salt explosives of the aqueous slurry type containing a novel thickener component which imparts improved stability and high water resistance to the slurry suspension while retaining pourability over prolonged periods.

3,442,730
PREFORMED FLOOR SURFACE ARTICLE AND METHOD OF APPLYING SAME
Donald Albert Dietz, Frostburg, Md., assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Sept. 13, 1965, Ser. No. 487,069
Int. Cl. B32b *19/04*
U.S. Cl. 156—71 9 Claims

6. A method of applying floor surface articles comprising providing a floor surface article comprising a body portion, one surface of which constitutes the wearing surface, an opposite surface constituting the back side thereof, and a coating on said opposite surface comprising at least 70% of a polymer which has been produced by the polymerization of a compound, at least 50% of which was derived from the monomeric structure

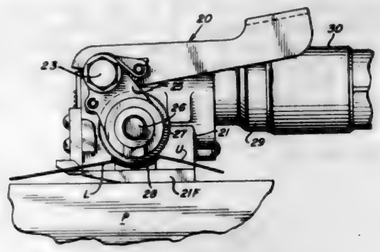
$$CH_2{=}C(R_1){-}X{-}R_2$$

wherein X is an ester linkage, R_1 is selected from the group consisting of hydrogen and methyl group, and R_2 is an alkyl radical up to 8 carbons in length, solubilizing said coating by contacting it with a solvent for said coating at a solvent concentration sufficient to actinate said coating and applying said floor surface article to a subsurface while said coating is still solubilized.

3,442,731
METHOD OF RELEASABLY ADHERING SPONGE BACKED CARPET TO FLOOR SURFACES AND ADHESIVE USED THEREFOR
John F. Anderson, Akron, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
No Drawing. Filed Sept. 27, 1965, Ser. No. 490,633
Int. Cl. B32b *27/40*; C09j *3/12*
U.S. Cl. 156—71 3 Claims

Sponge backed carpet and carpeting is releasably adhered to a variety of floor surfaces by a particular synthetic latex adhesive based on copolymer of 2-ethylhexyl acrylate and N-tertiary-butylacrylamide.

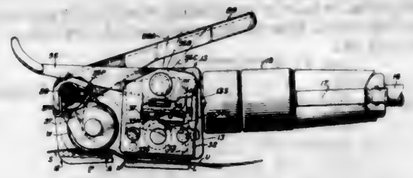
3,442,732
FRICTION-FUSION STRAP SEALING
Lee A. Stensaker, Streamwood, and Seymour E. Heymann and Hobart P. Young, Winnetka, and Ilmar J. Vilcins, Northbrook, Ill., assignors to Signode Corporation, a corporation of Delaware
Filed Aug. 13, 1965, Ser. No. 479,446
Int. Cl. B65b *13/32*; B32b *31/20*
U.S. Cl. 156—73 28 Claims



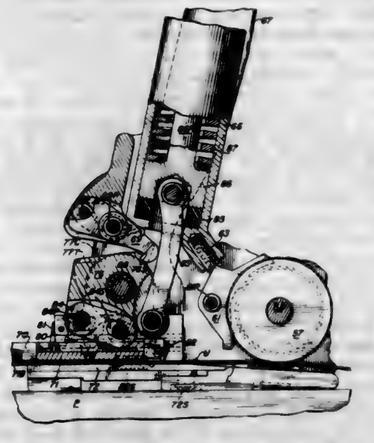
A method for providing a ligature about an article into a tensioned loop having overlapping end portions. The end portions of the ligature are first compressed and then moved multidirectionally relative to one another to effect interface melting between the overlapping end portions. The joint is finally formed by maintaining the interface regions in fusing contact until solidification is effected. Apparatus for producing the friction-fused joint by multidirectional movement is also disclosed.

3,442,733
COMBINATION STRAP TENSIONING AND SEALING TOOL
Ilmar J. Vilcins, Northbrook, Ill., assignor to Signode Corporation, a corporation of Delaware
Filed Feb. 2, 1966, Ser. No. 524,429
Int. Cl. B32b *31/20*
U.S. Cl. 156—73 25 Claims

A method and apparatus for providing a ligature about an article including providing a length of thermoplastic strap having a tensioned loop and overlapping end portions. The end portions of the length of strap are first compressed and then moved multidirectionally relative to one another to effect interface melting between the overlapping end portions. A common drive means is provided for operating both the loop tensioning mechanism and the strap moving mechanism, and the drive means is controlled such that during actuation of the loop tensioning mechanism it is not possible to operate the strap moving mechanism, while during actuation of the strap moving mechanism it is not possible to operate the loop tensioning mechanism. The joint is completed by maintaining the interface regions in fusing contact until solidification is effected.



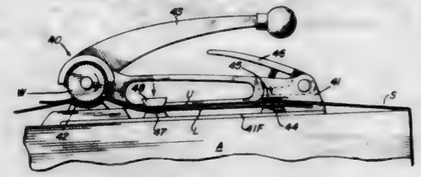
3,442,734
COMBINATION STRAP TENSIONING AND SEALING TOOL
Arvid I. Ericson, Fort Lauderdale, Fla., assignor to Signode Corporation, a corporation of Delaware
Filed Feb. 2, 1966, Ser. No. 524,431
Int. Cl. B32b *31/00*; B65b *13/32, 51/10*
U.S. Cl. 156—73 25 Claims



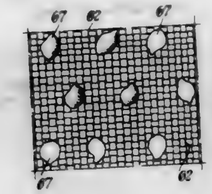
A method and apparatus for providing a ligature about an article including providing a length of thermoplastic strap having a tensioned loop and overlapping end portions. The end portions of the length of strap are first compressed and then a tension free end portion of the strap is moved unidirectionally relative to the other strap end portion to effect interface melting between the overlapping end portions. The joint is finally formed by maintaining the interface regions in fusing contact until solidification is effected.

3,442,735
FRICTION-FUSION STRAP SEALING
Lee A. Stensaker, Streamwood, Ill., assignor to Signode Corporation, a corporation of Delaware
Continuation-in-part of application Ser. No. 472,587, July 16, 1965. This application Feb. 2, 1966, Ser. No. 524,432
Int. Cl. B32b *31/20*; B30b *3/02*; B65b *13/32*
U.S. Cl. 156—73 10 Claims

A method and apparatus for providing a ligature about an article including providing a length of thermoplastic strap having a tensioned loop and overlapping end portions. The end portions of the length of strap are first compressed and then moved relative to one another to effect interface melting between the overlapping end portions. The joint is finally formed by maintaining the interface regions in fusing contact until solidification is effected.



3,442,736
PROCESS FOR LAMINATING THERMOPLASTIC PARTICLES TO A SURFACE
John Duns, Welwyn Garden City, England, assignor to Smith & Nephew Plastics Limited, Hull, England, a British company
Filed Aug. 12, 1965, Ser. No. 479,270
Claims priority, application Great Britain, Aug. 17, 1964, 33,543/64
Int. Cl. B29c *27/12*; B32b *5/10*
U.S. Cl. 156—85 11 Claims



A method of producing a laminate article by placing one or two backing sheets in surface to surface relationship with an openwork thermoplastic net structure comprising a multiplicity of substantially uniformly spaced thick portions interconnected by thinner strand-like portions, pressing said backing sheet and net structure against each other with sufficient force to establish solid contact between said backing sheet and said thick portions of the net structure, and applying heat to cause fusion of said thick portions of the net structure with said backing sheet and at least partial disruption of said thinner portions of the thermoplastic net structure.

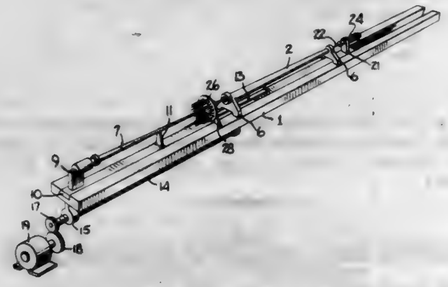
3,442,737
BONDING POLY(BUTENE-1)
Thomas G. Reed, Jr., La Porte, and Robert E. Hinkson, Houston, Tex., assignors to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware
No Drawing. Filed Dec. 16, 1963, Ser. No. 330,543
Int. Cl. B65h *69/02*; C09j *5/06, 5/02*
U.S. Cl. 156—158 4 Claims

A method for bonding poly(butene-1) surfaces wherein the surfaces are contacted with tetrachloroethylene at a temperature of from about 80° C. to about 120° C. for at least 5 seconds, and thereafter fitting the treated surfaces together.

3,442,738
METHOD AND APPARATUS FOR MAKING FIBER GLASS SHAFTS

Arthur L. Scott and Stephen W. Trewhella, Columbia, S.C., assignors to Columbia Products Company, Columbia, S.C., a corporation of South Carolina

Filed Feb. 26, 1965, Ser. No. 435,473
Int. Cl. B65h *81/00*
U.S. Cl. 156—161 10 Claims

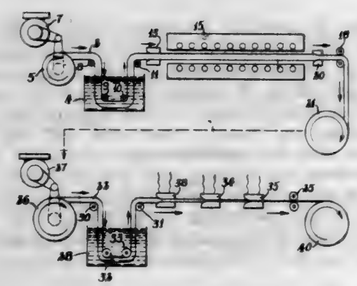


A glass fiber shaft of high modulus of elasticity ranging from 6.2 to 8.3×10^6 p.s.i. is obtained by confining the glass fibers and bonding resin between a tapered mandrel and tapered mold cavity. The mandrel is moved longitudinally into the cavity to exert a large compressive force on the fibers and resin to eliminate any voids and to fully adhere the fibers to each other. The fiber content is maintained between 70% to 90% of the total volume of the shaft.

3,442,739
FIBROUS WICK

Paul C. Johnson, Janesville, Wis., assignor to The Parker Pen Company, a corporation of Wisconsin

Filed June 2, 1965, Ser. No. 460,631
Int. Cl. D02j *1/00, 11/00*
U.S. Cl. 156—180 10 Claims

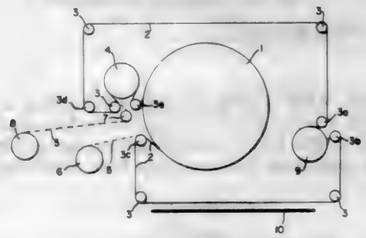


Fibrous wicking for pen points having a porous core surrounded by a nonporous peripheral layer, is produced by bonding together nylon fibers of a continuous filament parallelized yarn bundle at randomly spaced junctures along their lengths with an epoxy resin and thereafter sizing the bundle of intermittently bonded fibers at a temperature sufficient to melt only the outermost nylon fibers which are thereby amalgamated with an epoxy matrix throughout their entire length to form nonporous sheath which is bonded at randomly spaced intervals to outermost fibers of the porous core.

3,442,740
PROCESS FOR PRODUCING A BONDED NON-WOVEN SHEET

John Cyrenius David, Richmond, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Continuation-in-part of application Ser. No. 358,694, Apr. 10, 1964. This application Apr. 12, 1965, Ser. No. 448,582
Int. Cl. B32b *27/12, 31/20*
U.S. Cl. 156—181 5 Claims



1. Process for producing a bonded nonwoven sheet from a film-fibril sheet which is a random deposit of yarn-like strand material having a surface area greater than 2 $m.^2/g.$ and comprising a three-dimensional integral plexus of crystalline, oriented, polymeric, film-fibril elements, said elements being coextensively aligned with the strand axis and having an average film thickness of less than 4 microns and an average electron diffraction orientation angle of less than 90°, said film-fibril sheet having a density greater than 1.9 $lbs./ft.^3$; said process comprising subjecting said film-fibril sheet in a heating zone to light compression, not substantially in excess of about 1 $lb./in.^2$, between two surfaces thereby preventing shrinkage, the first surface being a hard heat-conducting material and being maintained throughout the treatment at a temperature substantially equal to or greater than the upper limit of the melting range of the film-fibril elements, the second surface being a flexible poor heat conductor, the film-fibril sheet being exposed long enough to allow the face thereof exposed to the hard heat conducting material to reach a temperature within 7° C. of the upper limit of the melting range of the film-fibril elements but not substantially above said upper limit, and to allow the second face of the sheet to reach a temperature 0.8 to 10° C. lower than the first face of the sheet, finally directly passing the sheet while under light restraining compression through a cooling zone wherein the temperature of the film-fibril sheet throughout its thickness is reduced to a temperature less than that at which the sheet distorts or shrinks when unrestrained.

3,442,741
METHOD FOR MAKING SATELLITE STRUCTURE

Herbert H. Specht, Dayton, Ohio, assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware

Filed Oct. 3, 1962, Ser. No. 228,134
Int. Cl. B32b *31/12*; C09j *5/06*
U.S. Cl. 156—229 4 Claims



The invention is a method of making a body of predetermined configuration capable of being collapsed into a minimum geometric space by external means but also capable of reassuming the predetermined configuration

when such external means are removed. The method comprises laminating special polyethylene and polyester sheets together with a thermosetting resinous adhesive and with metal foil and preshaping the assembly under conditions of heat and pressure that cause the adhesive to set with certain parts under tension and others under compression, with the assembly thereafter seeking to maintain an equilibrium in said predetermined configuration.

3,442,742
PROCESSES FOR APPLYING PRINTING TO METAL SUBSTRATES

Donald E. Jorgensen, 4730 Center Ave., Oakland, Pittsburgh, Pa. 15213

Filed Apr. 26, 1963, Ser. No. 276,051
Int. Cl. B29c *27/14*; B44d *1/09*
U.S. Cl. 156—244 4 Claims

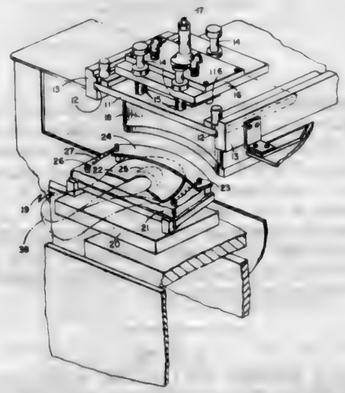


In the present invention, printing or other marking is applied to a metal substrate by an indirect printing process using a flexible film of suitable material which is applied to the metal substrate rather than direct printing on the metal substrate. In the present invention, by applying the printing first to a flexible film and then securing the film to the sheet metal rolls which are fabricated in the containers, it is possible to increase the rate of speed of the printing and to effect a much more reliable printing operation.

3,442,743
BOX TOE FORMING MACHINE

George Schultz, Newton, and Michael Mieczslaw Dziki, Dorchester, Mass., assignors to Industrial Shoe Machinery Corporation, Roxbury, Mass., a corporation of Massachusetts

Filed May 16, 1966, Ser. No. 550,316
Int. Cl. B29c *27/18*
U.S. Cl. 156—245 3 Claims



A method and machine are described for providing stiffening for a selected portion of an otherwise flexible material, as for example, a box toe for a shoe. A thermoplastic wafer is molded in the desired size and shape and then partially cooled so that its exposed surface remains tacky and while in this condition is pressed against the flexible material.

3,442,744
FORM WRAPPED WITH CELLULOSE ACETATE STRIP MATERIAL AND METHOD OF WRAPPING SAID MATERIAL

Robert M. Teter, Jr., John W. Addleburg, and Benjamin P. Rouse, Jr., all of P.O. Box 511, Kingsport, Tenn. 37662, and Charles D. Snead, 1000 Connecticut Ave. NW., Washington, D.C. 20036

No Drawing. Filed Dec. 11, 1967, Ser. No. 689,306
Int. Cl. B32b *23/20*; B65h *81/00*
U.S. Cl. 161—269 10 Claims

Extruded tape made of cellulose acetate of low acetyl content and commercial viscosity range crazes badly when sprayed with a solvent while under tension. This crazing can be reduced or eliminated during solvent bonding of such tape under tension by adding water to the solvent mixture comprising, for example, a mixture of an ethylene glycol monomethyl ether and methyl ethyl ketone.

3,442,745
ADHESIVE BONDING

Ival O. Salyer, Dayton, and David Gerald Glasgow, Centerville, Ohio, assignors, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission

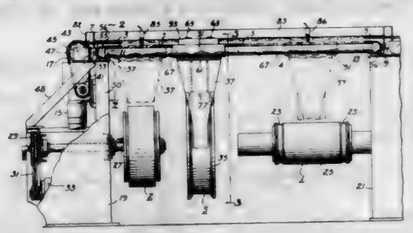
No Drawing. Filed July 30, 1965, Ser. No. 476,171
Int. Cl. C09j *3/00*
U.S. Cl. 156—332 10 Claims

Method of adhesively bonding with an ethylene/acrylic acid copolymer having 50–95% by weight ethylene; likewise with powdered metal and metal oxide fillers.

3,442,746
ANNULUS POSITIONING DEVICE

Martin N. Robertson, Akron, Ohio, assignor to The General Tire & Rubber Company, a corporation of Ohio

Filed Dec. 6, 1965, Ser. No. 511,762
Int. Cl. B29h *17/22, 17/02*
U.S. Cl. 156—396 11 Claims



In a tire building machine in which an annular transfer ring is used to transfer tire components, for example, the tread and breaker assembly, from one tire building operation or drum to another, means are provided to insure accurate positioning of the transfer ring with respect to the building operation. This positioning means comprises a piston and cylinder mechanism engaged with the transfer ring and adapted to make incremental adjustments in the positioning of the transfer ring with respect to the tire building drum or other equipment used in the operation.

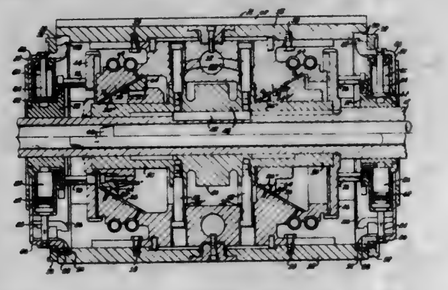
3,442,747
COLLAPSIBLE TIRE BUILDING DRUM

Wilhelm Brey, Cuyahoga Falls, Ohio, assignor to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

Continuation-in-part of application Ser. No. 275,891, Apr. 26, 1963, now Patent No. 3,237,199. This application Dec. 22, 1965, Ser. No. 515,550
The portion of the term of the patent subsequent to Feb. 22, 1983, has been disclaimed
Int. Cl. B29h *17/16*
U.S. Cl. 156—417 3 Claims

1. A collapsible tire building drum comprising, a plurality of segment assemblies arranged to form a continu-

ous tire building surface, a shaft spaced within said segment assemblies adapted for rotating said drum, cam means attached to and adapted for axial movement relative to said shaft, cam follower means disposed between said cam means and said segment assemblies for collapsing and expanding the latter upon axial movement of said cam means relative to said shaft, said cam means



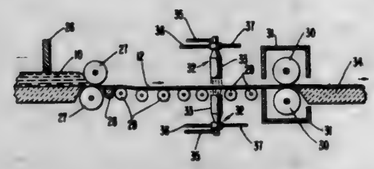
including a plurality of recessed cam slots and a plurality of upstanding cam surfaces alternately disposed intermediate said recessed cam slots for moving certain of said segment assemblies radially in advance of other of said segment assemblies upon collapsing of the drum, and for moving said other of said segment assemblies radially in advance of said first mentioned segment assemblies upon expanding of the drum.

3,442,748

METHOD FOR SURFACE WORKING GLASS

Guy D'Huart, Versailles, France, assignor to Compagnie de Saint-Gobain, Neuilly-sur-Seine, France

Filed July 13, 1965, Ser. No. 471,643
Claims priority, application France, July 20, 1964, 982,267
Int. Cl. B32b *17/06, 5/16*
U.S. Cl. 161—1 **10 Claims**



A fine powder is made to adhere to the face of a hot, newly formed glass sheet and the sheet is calendered. The sheet is useful to give diffused light and is more readily ground and polished than ordinary sheet. The powder may be applied by drawing the sheet through it, by blowing it upon the sheet in a flame, and blowing it upon the sheet in a stream of air accompanied by an electrostatic discharge.

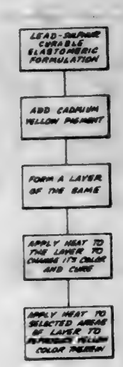
3,442,749

THERMAL COLOR CHANGE MARKING OF ELASTOMERS

Fred L. Ward, Bellevue, and Edwin A. Thompson, Seattle, Wash., and Harold D. Ritchie, Huntsville, Ala., assignors to The Boeing Company, Seattle, Wash., a corporation of Delaware

Continuation-in-part of application Ser. No. 232,120, Oct. 22, 1962. This application Aug. 6, 1965, Ser. No. 477,944
Int. Cl. B44f *5/00*
U.S. Cl. 161—33 **9 Claims**

A marked elastomer is disclosed together with a method for producing it. In the method, heat is applied locally to a selected area or areas of a surface of an elastomeric article which has lead sulfide and cadmium yellow pigment therein, and a dark olive green color, to change the color of such area or areas to the yellow of the pigment, while the olive green color of the remainder of the surface is maintained, to provide a dark contrasting background for the yellow colored area or areas thereon. In a typical example, the article is formed



by heat curing a layer of cadmium yellow pigmented lead sulphur curable elastomer having at least a partial curing capacity, and a curing system for the same therein including a basic lead salt in excess of its curing capacity and a thermally decomposable compound at the temperatures of cure which produces sulfide ion on decomposition.

3,442,750

REINFORCED SHEET MATERIAL

De Witt Gifford Wilcox, Tallmadge, Ohio, assignor to The Cleveland Fabricating Company, Inc., Cleveland, Ohio, a corporation of Ohio

Filed Aug. 7, 1964, Ser. No. 388,218
Int. Cl. B32b *15/20, 29/00, 33/00*
U.S. Cl. 161—57 **6 Claims**



A reinforcing sheet material and method of making the same, having a supporting element and a web-like reinforcing element. The reinforcing element including a first set of spaced strands and a second set of spaced strands disposed in overlying angled relationship with respect to the strands of the first set and an adhesive material disposed on the strands of one of the sets for bonding the strands of both of the sets together at their points of cross-over and for bonding the web-like reinforcing element to the supporting element.

3,442,751

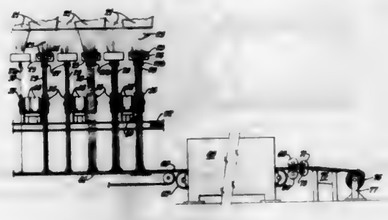
FIBROUS BODIES INCLUDING STRANDS AND METHODS OF PRODUCING SUCH BODIES

Roland E. Langlois, Newark, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware

Filed Dec. 5, 1963, Ser. No. 328,237
Int. Cl. B32b *17/02, 31/30*
U.S. Cl. 161—72 **11 Claims**

Fibrous bodies including laterally looped and interengaging strands of continuous glass filaments, the filaments being generally of uniform size but differing in number

in different strands as in the strands of one layer compared to the strands in another layer, and methods of producing such fibrous bodies by gathering filaments



from a forming source in substantially different numbers into strands and projecting the strands in close array and interengaging loops upon a receiving surface.

3,442,752

ADHESIVELY BONDED METAL SURFACES AND METHOD OF MAKING SAME

Stanley Robert Sandler, Springfield, Florence Ray Berg, Philadelphia, and George Kitazawa, Yardley, Pa., assignors to The Borden Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed Aug. 18, 1965, Ser. No. 480,805
Int. Cl. B32b *15/20, 15/08, 27/38*
U.S. Cl. 161—186 **8 Claims**

This invention relates to the method of making adhesively bonded surfaces, at least two of which are a metal, comprising applying to at least one of said surfaces an adhesive comprising a completely esterified polycarboxylic aromatic acid reacted with epoxide alcohol and curing agent selected from the group consisting of amines, amides, acids, acid anhydrides and mixtures thereof, contacting said adhesive applied surface with another surface and curing said contacted surfaces with said adhesive therebetween at a temperature of at least about 75° C. The invention also relates to the novel adhesive used in the method. More particularly, the invention relates to adhesives containing epoxy esters of polycarboxylic aromatic acids which when cured display high tensile shear strengths in cryogenic temperature ranges and in elevated temperature ranges. The high tensile shear strength is particularly apparent when the composition is used to adhesively bond metal surfaces and will be described in connection therewith.

ERRATUM

For Class 161—269 see:
Patent No. 3,442,744

3,442,753

PULPING OR LIGNO-CELLULOSIC MATERIAL WITH A REACTION PRODUCT OF TRIETHYLENEGLYCOL AND ORGANIC ACID

Leonard F. Burkart, Nacogdoches, Tex., assignor, by mesne assignments, to Norman Quigley, State Line, Nev.

No Drawing. Filed Oct. 20, 1965, Ser. No. 499,001
Int. Cl. D21c *3/20;* **C07d** *5/22*
U.S. Cl. 162—76 **10 Claims**

A liquor for and a method of treating ligno-cellulosic materials for removal of lignin and other non-carbohydrates as well as non-cellulosic carbohydrates from cellulosic matter. The liquor is a reaction product obtained by mixing triethyleneglycol with an organic acid. The method of treating the ligno-cellulosic material includes subjecting such material to the digesting and extracting action of the liquor followed by separation of the rich liquor from the treated cellulosic matter.

3,442,754

COMPOSITION OF AMINE-HALOHYDRIN RESIN AND CURING AGENT AND METHOD OF PREPARING WET-STRENGTH PAPER THEREWITH

Herbert H. Espy, Fairfax, Del., assignor to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed Dec. 28, 1965, Ser. No. 517,130
Int. Cl. D21h *3/58, 3/36*
U.S. Cl. 162—164 **8 Claims**

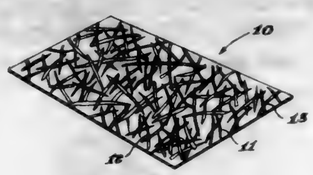
Disclosed is a composition of matter comprised of a resin selected from the group consisting of an aminopolyamide-epichlorohydrin resin and a polyalkylene polyamine-epichlorohydrin resin and a curing accelerator for the resin, the curing accelerator being a nitrogen-containing compound having an active hydrogen attached to a nitrogen atom such as ethylene diamine. The composition is adapted for use in the manufacture of wet-strength paper.

3,442,755

ORNAMENTAL PAPER INCORPORATING PLASTIC ELEMENTS

Harold A. Walters, Beaverton, and Ralph M. Gooch, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Continuation-in-part of application Ser. No. 431,423, Feb. 9, 1965. This application Mar. 29, 1965, Ser. No. 447,595
Int. Cl. D21h *3/40*
U.S. Cl. 162—168 **6 Claims**



Attractive paper is prepared by incorporating iridescent plastic film particles in a paper, the plastic film particles being composed of a plurality of transparent layers.

3,442,756

METHOD FOR TESTING PULP SLURRY ON THE FORMING WIRE OF A PAPER MACHINE

Antti Ilmari Lehtinen, Jyvaskyla, Finland, assignor to Valmet OY, Helsinki, Finland, a corporation of Finland

Filed Oct. 5, 1965, Ser. No. 493,059
Claims priority, application Finland, Nov. 17, 1964, 2,411/64
Int. Cl. G01n *9/24;* **D21f** *7/06, 1/08*
U.S. Cl. 162—192 **4 Claims**

The thickness, consistency and homogeneity of pulp suspension in the forming wire in a paper machine are determined by a crystal producing ultrasonic energy and located under the forming wire, the water flowing through the wire from the pulp acting as an acoustical connector between the crystal and the pulp. Echoes detected by the crystal are used to indicate the values of the measured quantities.

3,442,757

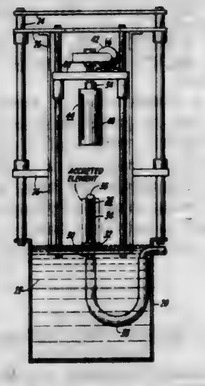
APPARATUS FOR FORMING ACCRETED ARTICLES FROM A FIBROUS SLURRY

John Covington Williams, Meriden, Conn., assignor to American Machine & Foundry Company, a corporation of New Jersey

Filed Dec. 20, 1965, Ser. No. 514,885
Int. Cl. D21j *7/00*
U.S. Cl. 162—387 **10 Claims**

Apparatus for accreting porous articles from a liquid

suspension of fibrous material including a former, means for causing the accretion of the fiber on the former and



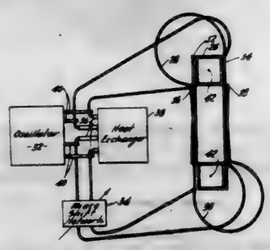
means spaced from and cooperating with the former to control the density and size of the accretion.

3,442,758

CONTAINMENT OF A PLASMA BY A ROTATING MAGNETIC FIELD

Alan S. Penfold and Giusto Fonda-Bonardi, Los Angeles, Calif., assignors to Litton Industries, Inc., Beverly Hills, Calif.

Filed Aug. 7, 1963, Ser. No. 300,470
Int. Cl. H05h *1/04*
U.S. Cl. 176—1 19 Claims



The present invention involves the use of a rotating electromagnetic field to provide a closed potential well which powerfully confines an ionized gas plasma. One structure which may be employed to implement the invention utilizes coaxial coils energized to generate an electromagnetic field which rotates at high speeds about an annular zone within an enclosing container. In a microwave implementation of the invention, a closed potential well is formed by the excitation of two microwave modes in the cylindrical cavity. The efficiency of the microwave generation apparatus may be increased by the use of vanes which pick up electrons as they leave the potential well as a result of space charge field effects.

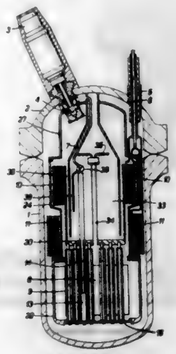
3,442,759

NUCLEAR REACTORS

Raoul Désiré Joseph Molle, Tertre, Belgium, and Kenneth James Durrands, Northwich, England, assignors to Societe Anglo-Belge, Vulcain S.A., Brussels, Belgium

Filed Feb. 14, 1967, Ser. No. 616,042
Claims priority, application Great Britain, Feb. 16, 1966, 6,895/66
Int. Cl. G21c *7/12*
U.S. Cl. 176—36 6 Claims

A method of and apparatus for controlling reactivity in nuclear reactors by subjecting a control member to the influence of a sequence of fluid pulses, the sequence being of variable character so that the rate and direction of



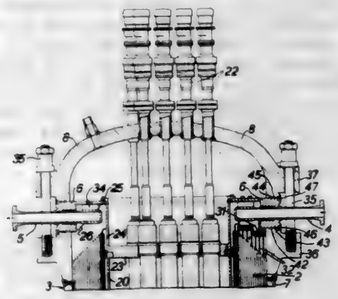
movement of the member can be controlled by varying the character of the sequence. The fluid pulses may be created in fluid flowing through passages in the core.

3,442,760

INTEGRAL NUCLEAR REACTOR WITH COOLANT PENETRATIONS FORMED IN A SEPARABLE MODULE OF THE REACTOR VESSEL

Shepherd Rigg, Walton, Warrington, England, assignor to United Kingdom Atomic Energy Authority, London, England

Filed Oct. 26, 1966, Ser. No. 589,612
Claims priority, application Great Britain, Nov. 2, 1965, 46,442/65
Int. Cl. G21c *15/00*; F22b *1/00*
U.S. Cl. 176—51 2 Claims



An integral nuclear reactor-steam generator construction in which the pressure vessel is made in three parts, a body portion, a closure member, and an annular member clamped between the body portion and the closure member. The annular member is penetrated by secondary coolant inlets and outlets.

3,442,761

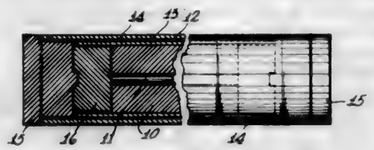
NUCLEAR REACTOR FUEL ELEMENT

Melville A. Feraday, Deep River, Ontario, Canada, assignor to Atomic Energy of Canada Limited, Ottawa, Ontario, Canada, a corporation of Canada

Filed June 16, 1967, Ser. No. 646,590
Claims priority, application Canada, July 18, 1966, 965,709
Int. Cl. G21c *3/04*
U.S. Cl. 176—67 7 Claims

A nuclear fuel element in which the fuel is contained by

a sheathing assembly consisting of inner and outer sheaths formed from zirconium or zirconium alloy separated by



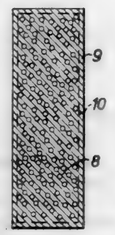
an interlayer of ductile aluminum or aluminum-uranium alloy having a high thermal conductivity.

3,442,762

CERAMIC FUEL MATERIALS

Ivor Edison Denton, Wantage, England, assignor to United Kingdom Atomic Energy Authority, London, England

Filed June 12, 1967, Ser. No. 645,108
Claims priority, application Great Britain, June 21, 1966, 27,674/66
Int. Cl. G21c *3/26*
U.S. Cl. 176—69 5 Claims



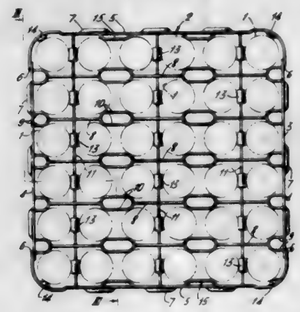
A nuclear fuel of the dispersed type is characterised by fuel particles each coated with porous beryllia located in a preferably slip-cast, matrix and can of beryllia of nearly theoretical density.

3,442,763

NUCLEAR REACTOR FUEL ELEMENT ASSEMBLIES

John Chetter, Lytham, Lytham St. Annes, and Cecil Henry Jones, St. Annes on Sea, England, assignors to United Kingdom Atomic Energy Authority, London, England

Filed July 14, 1967, Ser. No. 653,426
Claims priority, application Great Britain, July 21, 1966, 32,911/66; Mar. 8, 1967, 11,018/67
Int. Cl. G21c *3/34*
U.S. Cl. 176—78 11 Claims



A spacer grid for a nuclear fuel assembly of cellular form with a square framework, in which the cells are penetrated by fuel pins, each pin being positioned in its cell by two spaced stop means and a resilient means arranged so that the resilient means is positioned at the apex of an isosceles triangle relative to the stop means which are positioned at the basal corners of the isosceles triangle. The points of contact of the stop and resilient means with the fuel pins lying in the plane of the grid structure.

3,442,764

PROCESS OF PURIFYING BROMELAIN

Harland H. Young, Western Springs, William D. Warner, La Grange Park, and John K. McAnelly, Park Forest, Ill., assignors to Swift & Company, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Sept. 12, 1966, Ser. No. 578,465
Int. Cl. C12d; A22c
U.S. Cl. 195—66 7 Claims

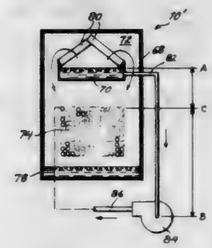
Solutions containing bromelain are purified by adjusting the pH to 3–6, treating with magnesium oxide or magnesium hydroxide to adjust the pH to 8–10 whereby a flocculant is formed which can be readily filtered by adding a filtering aid.

3,442,765

MULTISTAGE FLASH EVAPORATOR-CONDENSER ARRANGEMENT

Gideon Levite, Philadelphia, Pa., assignor to Baldwin-Lima-Hamilton Corporation, Philadelphia, Pa., a corporation of Delaware

Filed Oct. 5, 1966, Ser. No. 584,443
Int. Cl. B01d *3/06, 1/26*
U.S. Cl. 202—173 7 Claims



A multi-stage flash evaporator, wherein the condenser means for a given stage is located below the portion of the evaporator wherein flashing of distilland to vapor occurs, whereby a decrease in pumping requirements for the entire evaporator is realized.

3,442,766

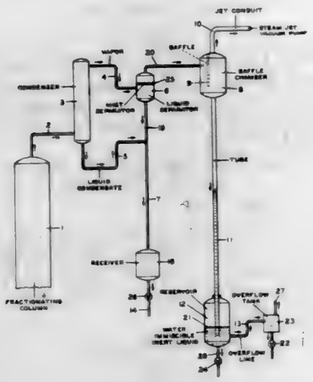
DISTILLATION UNDER VACUUM WITH LIQUID PROTECTIVE SEAL

Charles D. Smith, Glendale, W. Va., and Bertram J. Samuels, Tonawanda, N.Y., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

Filed July 19, 1965, Ser. No. 472,954
Int. Cl. B01d *3/32, 3/10*
U.S. Cl. 202—197 4 Claims

More particularly, the invention relates to method and apparatus involving steam jet operated vacuum distillation systems especially for distillation of liquids reactive to water and featuring a liquid seal device adapted to avoid contact between the distillate and water, said liquid seal comprising a chamber for receiving non-condensables

between the steam jet and distillation column and condensers, said chamber connected to a barometric type tube which in turn is connected to a reservoir which contains an inert liquid having a density lower than water



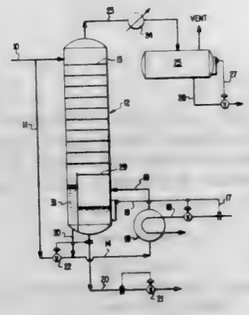
and immiscible therewith, said chamber adapted to collect liquids entering said chamber upon disruption of normal operation of the distillation system and divert said liquids into the tube and reservoir.

3,442,767

STRIPPING OPERATION WITHOUT OVERHEAD REFLUX AND THE CONTROL OF THE WATER CONTENT IN THE SYSTEM

Robert D. Hall, Homewood, Ill., assignor to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

Filed May 16, 1968, Ser. No. 729,791
Int. Cl. B01d *3/42*
U.S. Cl. 203—2 8 Claims



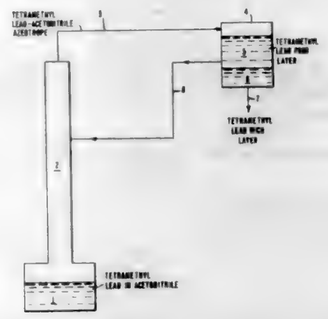
A stripping operation without overhead reflux wherein the concentration of the material being separated remaining in the bottoms product is controlled by providing a bypass of material around the stripper tower which alters the degree of separation in the system. In one embodiment, a feed slip stream is fed to the bottoms reboiler in inverse proportion to the degree of separation achieved in the tower. In a second embodiment, a bottoms reboiler vapor by-pass is provided which passes the vapor to an overhang condenser, altering the effectiveness of the separation in the tower.

3,442,768

PROCESS FOR RECOVERING TETRAMETHYL LEAD AND AZEOTROPES FORMED THEREIN

Kenneth C. Smeltz, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Continuation-in-part of applications Ser. No. 377,312, June 23, 1964, and Ser. No. 475,006, July 26, 1965, which is a continuation of application Ser. No. 523,973, Feb. 1, 1966. This application Dec. 21, 1967, Ser. No. 692,448
Int. Cl. B01d *3/10*
U.S. Cl. 203—6 13 Claims



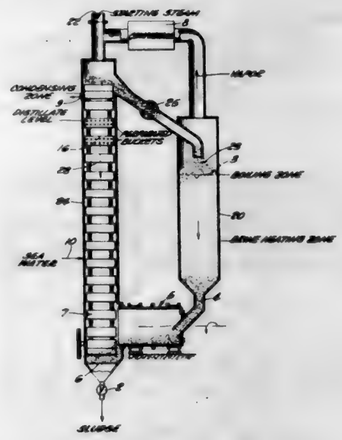
Recovery of tetramethyl lead from solutions containing 1–37% by weight of tetramethyl lead in acetonitrile by azeotropic distillation at temperature and pressure conditions below those necessary to boil either component alone. The azeotrope separates into two liquid phases upon cooling, the lower layer being enriched in tetramethyl lead.

3,442,769

METHOD AND APPARATUS FOR HEATING AND DISTILLING SALINE WATER USING HEATED PEBBLES

Winfield B. Heinz, 11444 Bolas St., Los Angeles, Calif. 90049

Filed Oct. 22, 1965, Ser. No. 501,244
Int. Cl. C02b *1/06*; B01d *3/08*
U.S. Cl. 203—7 9 Claims



1. A method of transferring heat to a solution in which solid matter is deposited upon the heat transfer means, comprising the steps of:

heating a flow of solid particles;

causing the heated solid particles to contact the solution to be heated in a counterflow relationship whereby solid matter from the solution is deposited upon the surfaces of said solid particles;

abrading and impacting said solid particles to loosen the deposited solid matter therefrom;

causing the abraded and impacted solid particles to contact incoming solution in a counterflow relationship to wash the loosened deposited solid matter from the solid particles; and

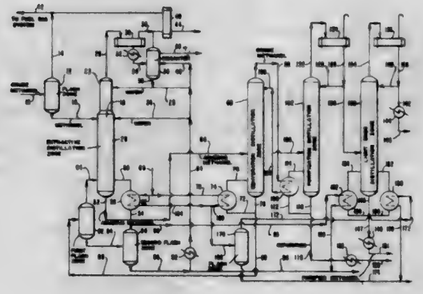
reheating the cleaned solid particles for further contact with a solution to be heated.

3,442,770

PROCESS FOR THE PURIFICATION OF METHANOL BY EXTRACTIVE DISTILLATION AND PLURAL STAGE DISTILLATION RECOVERY

Theodore O. Wentworth and Clyde G. Anderson, Cincinnati, Ohio, assignors to Vulcan-Cincinnati, Inc., Cincinnati, Ohio, a corporation of Ohio

Filed Dec. 21, 1967, Ser. No. 692,414
Int. Cl. B01d *3/38*
U.S. Cl. 203—25 9 Claims



A process for the purification of synthetic methanol is shown. Crude methanol containing organic impurities is subjected to aqueous extractive distillation whereby essentially all water insoluble higher boiling impurities and some other impurities are removed as an overhead stream. The bottom stream from the aqueous extractive distillation zone is dehydrated and the overhead stream therefrom containing methanol and impurities is purified in a distillation zone from which essentially all of the soluble higher boiling impurities are removed. The overhead stream from the purification distillation zone is subjected to light ends distillation and the bottom stream is pure methanol product. In a preferred embodiment, the water stream from the dehydration distillation zone is flashed to provide stream for one or more of the other distillation zones.

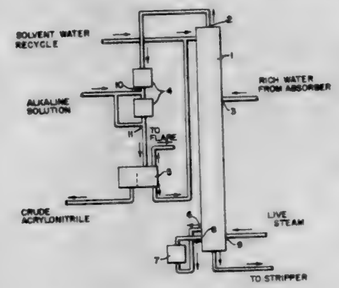
3,442,771

EXTRACTIVE DISTILLATION PROCESS FOR SEPARATING NITRITES, PEROXIDES AND PRECURSORS THEREOF FROM CRUDE UNSATURATED NITRILES SATURATED WITH WATER BY ALKALINE ADDITION

Jackie B. Jordan and Thomas R. White, Lima, Ohio, assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

Filed Aug. 16, 1967, Ser. No. 661,087
Int. Cl. B01d *3/34*
U.S. Cl. 203—33 4 Claims

This application relates to the removal of trace impurities from an unsaturated nitrile contaminated with water. More particularly, the instant application relates to a process for the removal of trace compounds having particular characteristics of a nitrite, which compounds, like peroxides, give a positive iodometric test, by addition of a sufficient quantity of an alkaline solution to a partially condensed azeotrope of the unsaturated nitrile with water which azeotrope is obtained as an overhead stream



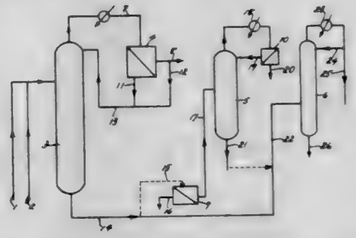
from an extractive distillation column which uses water as the solvent to separate said unsaturated nitrile from saturated nitriles and minor quantities of other compounds which are obtained as a result of the catalytic ammoxidation of monoolefins to unsaturated nitriles.

3,442,772

METHOD OF PURIFYING METHYL-ISOBUTYL-CARBINOL BY AZEOTROPIC DISTILLATION WITH WATER

Shiro Kudo and Shinichi Tsurugi, Osaka-fu, Japan, assignors to Kyowa Hakko Kogyo Kabushiki Kaisha, Tokyo-to, Japan, a corporation of Japan

Filed July 19, 1966, Ser. No. 566,267
Claims priority, application Japan, July 27, 1965, 40/45,076
Int. Cl. B01d *3/38*, *3/36*
U.S. Cl. 203—85 11 Claims



1. The improved method of recovering methyl-isobutylcarbinol from a mixture of methyl-isobutylcarbinol and mesityl oxide to obtain a stream rich in methyl-isobutylcarbinol which comprises: adding to said mixture 0.25 to 50 weight parts of water per 100 weight parts of mixture of methyl-isobutylcarbinol and mesityl oxide, and distilling said mixture in a distillation zone in the presence of 0.25 to 50 weight parts of water per 100 weight parts of mixture of methyl-isobutylcarbinol and mesityl oxide so as to form an overhead stream rich in mesityl oxide and a bottom stream rich in methyl-isobutylcarbinol.

3,442,773

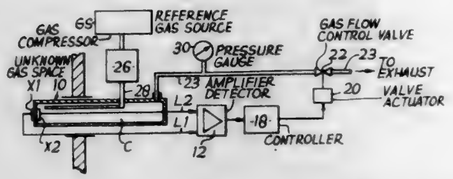
ELECTROCHEMICAL GAS MEASURING SYSTEMS

Haydn Wilson, Luton, England, assignor to George Kent Limited, Luton, England, a British company

Filed June 8, 1966, Ser. No. 556,031
Claims priority, application Great Britain, June 10, 1965, 24,584/65
Int. Cl. B01k *1/00*
U.S. Cl. 204—1 16 Claims

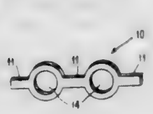
1. A method of providing a continuous measurement of the concentratiion of a constitutent of an unknown

gas which comprises the steps of applying a reference gas to one electrode of an electrochemical detector, exposing the other electrode of such detector to the unknown gas, using the output of said detector continuously to control the pressure of the reference gas or the



partial pressure of a constituent of the reference gas at said one electrode of said detector so as to maintain said pressure or said partial pressure at a value substantially equal to the partial pressure of said constituent of the unknown gas and measuring said reference gas pressure as a measure of the unknown gas concentration.

3,442,774
METHOD OF ELECTRODEPOSITING A MAGNETIC COATING ON A CHAIN-LIKE MEMORY ELEMENT
Charles Le Mehaute, Saint-Laurent-du-Var, Edouard Rocher, Antibes, Guy Guesnier, Saint Avertin, and Roland Vaesken, Viry Chatillan, France, assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Mar. 5, 1965, Ser. No. 456,586
Claims priority, application France, Mar. 9, 1964, 7,357
Int. Cl. C23b *5/50*
U.S. Cl. 204—24 **2 Claims**



A process and electrolyte for quiescently electroplating essentially zero magnetostrictive magnetic film on a surface of chain-like geometry wherein the electrolyte contains: nickelous sulfate in a concentration from about 225 to about 275 grams per liter; ferrous sulfate in a concentration from about 3.3 to 4.5 grams per liter; a nickel ion concentration to ferrous ion concentration in the ratio between 50:1 to 80:1, and, sufficient boric acid and acid saccharin to maintain the pH between 2.6 and 3.

3,442,775
FORMATION OF COATING ON GERMANIUM BODIES
John George Wilkes, Hatch End, Middlesex, and Alan Rantell, London, England, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 22, 1965, Ser. No. 502,313
Int. Cl. C23b *5/52*
U.S. Cl. 204—37 **5 Claims**

A method of forming a coherent adherent layer of tetragonal germanium dioxide on a germanium surface which comprises first forming hexagonal germanium dioxide on the surface, and thereafter heating above 400° C. in an oxygen and water vapor atmosphere at a high pressure to replace the hexagonal germanium dioxide with a layer of tetragonal germanium dioxide, useful as a passivating or masking layer in the planar process.

3,442,776
ELECTROLYTE AND PROCESS FOR THE ELECTRODEPOSITION OF CADMIUM
Wolfram Ruff, Frankfurt am Main, and Heinz Boucher, Neu Isenburg, Germany, assignors to Alfred Teves KG, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed Sept. 19, 1966, Ser. No. 580,203
Claims priority, application Germany, Sept. 25, 1965, T 29,473
Int. Cl. C23b *5/10*
U.S. Cl. 204—50 **10 Claims**

1. A method of coating an iron or steel workpiece with cadmium, comprising the steps of:
(a) preparing an aqueous electrolyte having a cadmium-ion concentration of 45 to 55 g./liter and a cyanide/cadmium ion ratio of 1.0 to 1.2, by dissolving at least one cadmium-containing compound and at least one cyanide-containing compound in water without the addition thereto of an alkali-metal hydroxide; and
(b) electroplating metallic cadmium from the bath produced in step (a) upon said workpiece constituted as a cathode against a cadmium anode.

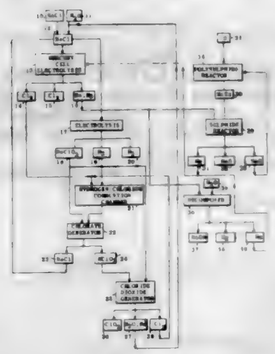
3,442,777
CHROMIUM PLATING PROCESS
Roger M. Woods, Washington, D.C., and David R. Moul, Seat Pleasant, Md., assignors to Corillium Corporation, Arlington, Va., a corporation of the District of Columbia
No Drawing. Filed June 20, 1966, Ser. No. 558,568
Int. Cl. C23b *5/06, 5/72*
U.S. Cl. 204—51 **9 Claims**

A process of electrodepositing golden colored chromium. The process is carried out using an aqueous bath comprising about 15–75 g./l. chromic anhydride, about 5–50 g./l. of phosphoric acid and about .10–.30 g./l. of sulfuric acid. Equivalent amounts of sulfate salts may be used in place of sulfuric acid. The deposition temperature is about 50° F.–120° F. and a current density of about 50–600 amperes/ft.^{2} is used.

3,442,778
PREPARATION OF CHEMICALS FOR KRAFT PULPING AND BLEACHING AND APPARATUS THEREFOR
Göthe O. Westerlund, Vancouver, British Columbia, Canada, assignor to Chemech Engineering Ltd., Vancouver, British Columbia, Canada
Filed June 20, 1966, Ser. No. 558,753
Int. Cl. B01k *3/00;* **C01b** *7/00, 17/22*
U.S. Cl. 204—95 **19 Claims**

1. A process for the preparation of chlorine dioxide, chlorine, hydrogen, an hydroxide selected from the group consisting of alkali metal hydroxides and alkaline earth metal hydroxides and a sulphide selected from the group consisting of alkali metal sulphides and alkaline earth metal sulphides for use in kraft pulp mill operations from a chloride selected from the group consisting of alkali metal chlorides and alkaline earth metal chlorides, sulphur and water, which process comprises the following interrelated combination of steps:
(A) subjecting a portion of an alkali metal chloride or an alkaline earth metal chloride to a decomposition reaction, thereby to form free chlorine gas;
(B) subjecting a further portion of said alkali metal chloride or said alkaline earth metal chloride to a decomposition reaction to form the corresponding alkali metal chlorate or alkaline earth metal chlorate, and free hydrogen gas;
(C) subjecting a portion of the free chlorine gas from step (A) to reaction with a portion of the free hydrogen gas from step (B) to form hydrogen chloride gas;

(D) subjecting the hydrogen chloride gas from step (C) and a portion of the alkali metal chlorate or the alkaline earth metal chlorate from step (B) to reaction to form an alkali metal chloride or an alkaline earth metal chloride, and chloric acid;
(E) subjecting the chloric acid from step (D) and a portion of the alkali metal chlorate or alkaline earth metal chlorate of step (B) to reaction to form chlorine dioxide and chlorine gas;
(F) subjecting sulphur to reaction with an alkali metal sulphide or an alkaline earth metal sulphide to form an alkali metal polysulphide or an alkaline earth metal polysulphide;
(G) subjecting the alkali metal polysulphide or the alkaline earth metal polysulphide of step (F) to reaction to form an alkali metal sulphide or an alkaline earth metal sulphide in sufficient quantities to provide said alkali metal sulphide or said alkaline earth metal sulphide for reaction with sulphur in step (F) and for use in the kraft pulp mill operation; and
(H) decomposing an amalgam of an alkali metal or alkaline earth metal with mercury to form an alkali metal hydroxide or an alkaline earth metal hydroxide, hydrogen gas and mercury;



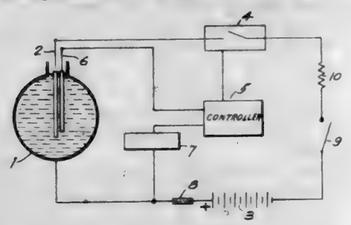
wherein, the amounts of said chlorine dioxide, chlorine gas, alkali metal hydroxide or alkaline earth metal hydroxide and alkali metal sulphide or alkaline earth metal sulphide are sufficient for both maintaining said interrelated combination of steps self-sufficient and for providing such chemicals for use in the kraft pulp mill operations.

19. Apparatus for the preparation of chlorine dioxide, chlorine, hydrogen, sodium hydroxide and sodium sulphide for use in kraft pulp mill operations from sodium chloride, sulphur and water which process comprises the following interconnected series of units:
(A)(i) a mercury cell operative to produce gaseous chlorine at the anode and sodium amalgam at the cathode;
(ii) means at the anodic outlet of (A)(i) for recovering a portion of the chlorine produced at the anode;
(B)(i) an electrolytic cell operative to electrolyze sodium chloride brine to form sodium chlorate and gaseous hydrogen;
(ii) means connected to electrolytic cell (B)(i) for the recovery of a portion of the gaseous hydrogen so-formed;
(C)(i) a hydrogen chloride combustion chamber operative to produce hydrogen chloride;
(ii) means interconnecting the inlet of said combustion chamber (C)(i) with a gaseous hydrogen outlet from said electrolytic cell (B)(i) and for interconnecting the inlet of said combustion chamber (C)(i) with a gaseous chlorine outlet from mercury cell (A)(i); and
(iii) means for the recovery of a portion of said hydrogen from electrolytic cell (C)(i);
(D)(i) a chlorate electrolyser and generator operative to produce sodium chlorate and hydrogen;
(E)(i) a chlorine dioxide generator operative to form gaseous chlorine; water; sodium chloride; and chlorine dioxide;
(ii) means connecting the inlet of said chlorine dioxide generator (E)(i) with the chlorate product effluent line of chlorate generator (D)(i) and means connecting the outlet of said chlorine dioxide generator (E)(i) with the sodium chlorate inlet line of electrolytic cell (B)(i);
(iii) outlet means from chlorine dioxide generator (E)(i) to recover said chlorine dioxide; and
(iv) means connecting a chlorine outlet from generator (E)(i) with the inlet to combustion chamber (C)(i);
(F)(i) a sulphide reactor operative to form mercury and sodium sulphide;
(ii) means connecting the mercury outlet line of said sulphide reactor (C)(i) with the mercury inlet line of mercury cell (A)(i) and/or to amalgam decomposer (H)(i);
(iii) means connecting the inlet of said reactor (C)(i) with the amalgam outlet line of said mercury cell (A)(i); and
(iv) means for the recovery of a portion of said sodium sulphide of (C)(i);
(G)(i) a polysulphide reactor operative to form sodium polysulphide;
(ii) inlet means for the introduction of sulphur to said reactor (G)(i);
(iii) means connecting the sodium sulphide outlet of said sulphide reactor (C)(i); with the inlet of said reactor (G)(i);
(iv) means connecting the polysulphide outlet of said reactor (G)(i) with the inlet of said reactor (C)(i); and
(H)(i) a decomposer to form sodium hydroxide solution; gaseous hydrogen and mercury;
(ii) means connecting the amalgam outlet of mercury cell (A)(i) with the inlet of said decomposer (H)(i) and/or means for connecting excess amalgam outlet means from sulphide reactor (F)(i);
(iii) inlet means for water to said decomposer (H)(i);
(iv) means for the recovery of product hydroxide from decomposer (H)(i);
(v) means for the recovery of product hydrogen from decomposer (H)(i); and
(vi) means connecting the mercury outlet of decomposer (H)(i) with the mercury inlet of mercury cell (A)(i).

3,442,779
ANODIC PROTECTION OF METALS
Gordon Randolph Hoey, Otterburn Park, Quebec, Canada, assignor to Canadian Industries Limited, Montreal, Quebec, Canada, a corporation of Canada
Filed July 26, 1965, Ser. No. 474,749
Claims priority, application Canada, July 27, 1964, 908,140
Int. Cl. C23f *13/00*
U.S. Cl. 204—147 **3 Claims**

Corrosion of a metal in a corrosive medium is minimized by applying a predetermined direct current potential

between the metal and an inert cathode immersed in the medium, the potential being applied in a pulsed form when

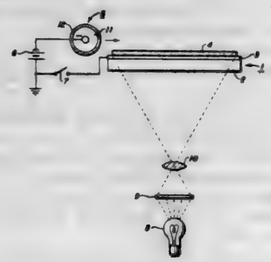


the nobility of the metal decreases below a predetermined value sufficient to maintain it in a passive state.

3,442,780
GRAFTING OF VINYL AROMATIC MONOMERS ONTO POLYCHLOROTRIFLUOROETHYLENE WITH IRRADIATION
Charles A. Levine, Concord, Calif., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Sept. 21, 1964, Ser. No. 398,070
Int. Cl. C08f *1/16;* **B01j** *1/10*
U.S. Cl. 204—159.17 **8 Claims**

In depth graft copolymerization between a polymer of chlorotrifluoroethylene and a vinyl aromatic monomer is accomplished by diffusing the monomer into the polymer, subjecting the polymer in the presence of the monomer to irradiation and subsequently heating the irradiated polymer/monomer mixture to form the desired graft copolymer.

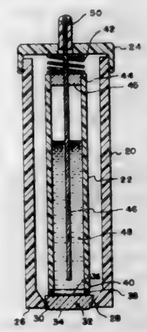
3,442,781
PHOTOELECTROPHORETIC AND XEROGRAPHIC IMAGING PROCESSES EMPLOYING TRIPHENODIOXAZINES AS THE ELECTRICALLY PHOTOSENSITIVE COMPONENT
Lester Weinberger, Rochester, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Jan. 6, 1966, Ser. No. 519,104
Int. Cl. B01k *5/02*
U.S. Cl. 204—181 **7 Claims**



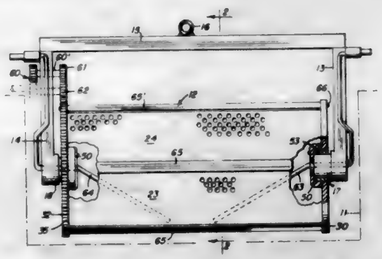
Triphenodioxazines are used as electrically photosensitive particles in photoelectrophoretic imaging and as photoconductors in xerographic plates.

3,442,782
ELECTROCHEMICAL ELECTRODE
Stanley L. Shiller, Needham, and Martin S. Frant, Newton, Mass., assignors to Orion Research, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed May 24, 1966, Ser. No. 552,597
Int. Cl. B01k *3/12, 3/06, 3/04*
U.S. Cl. 204—195 **8 Claims**

A potentiometric electrode structure formed of a pair of coaxial, spaced-apart cylinders of electrically insulating material. A wafer of ion-sensitive material is disposed in one open end of the outer cylinder such that the periphery of the wafer is in substantially continuous ribbon contact with the edge of the opening. The inner container is sealed to the inner surface of the wafer and is resiliently biased against the wafer so as to force it into the ribbon contact. The material of the outer container is deformable so that the pressure of the wafer against the ribbon contact creates a seal. The inner container is intended to contain an internal reference electrode and electrolyte.



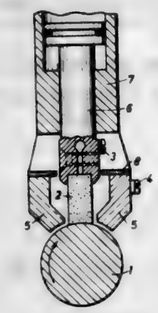
3,442,783
ELECTROPLATING BARREL
Oscar H. Kirkpatrick, Kingston, and Albert P. Hobush, Marion, N.Y., assignors to The Hubbard-Hall Chemical Company, Waterbury, Conn., a corporation of Connecticut
Filed Feb. 10, 1966, Ser. No. 526,570
Int. Cl. C23b *5/78*
U.S. Cl. 204—213 **2 Claims**



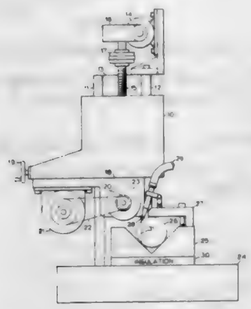
This invention involves an electroplating barrel designed to make the best use of space available for the barrel. The barrel comprises two end members, one having gear teeth thereon and having integral individual panels spanning the distance between and attached to the end members thereby forming the circumferential portion of the barrel. The barrel has hub and bearing members entirely disposed in the end members thereof for receiving supporting stubs.

3,442,784
APPARATUS FOR ELECTROLYTICALLY HONING THE EXTERIOR SURFACE OF A CYLINDRICAL WORKPIECE
Karl Wieck, Stuttgart, Germany, assignor to Supfina Wieck & Hentzen, Remscheid, Germany
Filed May 13, 1965, Ser. No. 455,549
Claims priority, application Germany, May 16, 1964, S 91,124
Int. Cl. B23p *1/04*
U.S. Cl. 204—217 **1 Claim**

An apparatus using a combination mechanical and electrolytical treatment for machining the exterior surface of a cylindrical workpiece. The apparatus includes a means for rotating and advancing the workpiece in an axial direction. While the workpiece is moving through the apparatus an axially displaceable working member reciprocates in a direction parallel to the axis of the said workpiece. The working member comprises a counter electrode means and a discharge channel for effecting an electrolytic treatment. The working member also includes a grinding means for effecting a mechanical honing treatment.



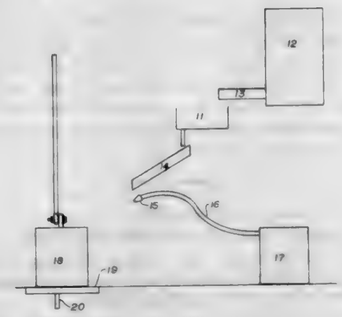
3,442,785
MACHINE ELECTROLYTIC GRINDING TOOL CONTROL APPARATUS
Arlyn T. Easton, Florence, Ky., assignor to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed Dec. 23, 1965, Ser. No. 516,043
Int. Cl. B23p *1/12*
U.S. Cl. 204—224 **4 Claims**



The disclosure and description herein is of a servo-controlled feed system for use in an electrolytic grinding machine. The system operates to vary the rate of relative movement between the electrolytic grinding wheel of the machine and a workpiece in accordance with changes in the mechanical load on the grinding wheel which physically contacts the work during a grinding operation.

3,442,786
CARBON ANODE FOR ALUMINUM REDUCTION CELL
Wayne H. Clukey, Robert L. Albouco, and Alan V. Clack, Spokane, Wash., assignors to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
Filed Mar. 22, 1965, Ser. No. 441,671
Int. Cl. B01k *3/08*
U.S. Cl. 204—290 **4 Claims**

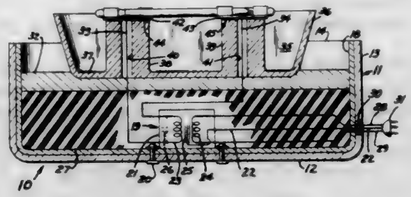
A method of providing a protective coating on carbon anodes for use in aluminum reduction cells which comprises introducing molten aluminum into a directed air stream at a temperature and under conditions to produce a liquid aluminum spray. The period of exposure of the molten aluminum to the directed air stream is regulated to produce an oxide content of from 1–10% in the molten aluminum. The liquid spray is then deposited as a coating on the carbon anode.



3,442,787
HIGH TEMPERATURE FLUID COKE ELECTRODES
Thomas Collum Landrum and Robert Harry Waghorne, Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed May 17, 1966, Ser. No. 550,592
Int. Cl. B01k *3/08;* **H01b** *1/02*
U.S. Cl. 204—294 **11 Claims**

1. A carbonaceous compaction having improved resistance to consumption in alumina reduction cell electrode use comprising high temperature fluid coke, inorganic additive selected from the group consisting of salts and oxides of metals selected from Groups I–A, II–A, and III–A of the Periodic Table, and mixtures thereof, ranging from about 0.1 to about 3 parts additive per 100 parts by weight of coke, and a carbonaceous material selected from the group consisting of carbonaceous binder and the coked residue thereof.

3,442,788
OZONE GENERATOR
Thomas C. Wooton, Arcadia, Calif. (5236 N. Peck Road, El Monte, Calif. 91732), William F. Mangold, 1331 Mariana St., West Covina, Calif. 91790, and Warren L. Davis, 3026 Sullivan St., Rosemead, Calif. 91770
Filed May 23, 1966, Ser. No. 552,101
Int. Cl. B01k *1/00*
U.S. Cl. 204—317 **9 Claims**



1. An ozone generator comprising: a case having a bottom and peripheral wall; a transformer; an insulator in the case; a ceramic dish mounted to the insulation and

spaced by it from the case; a pair of connectors mounted to said dish; a plurality of generator elements connected across said connectors each of said elements comprising a glass tube having an internal cavity, said cavity being substantially evacuated but holding a quantity of inert gas at reduced pressure; a conductive electrode extending through the glass tube and exposed to both the inside and outside thereof and in electrical communication with said connector and supported by the dish, the dish including a continuous peripheral flange between the connectors and the peripheral wall and a continuous seal between the connectors and the bottom, whereby the length of path between the connectors and the case is lengthened by the flange.

3,442,789

SHALE OIL RECOVERY PROCESS

Marlin U. Zimmerman, Jr., Shaker Heights, Ohio, assignor, by mesne assignments, to Technikoil, Inc., Cleveland, Ohio, a corporation of Ohio

Continuation of application Ser. No. 320,451, Oct. 31, 1963. This application Oct. 26, 1966, Ser. No. 589,756

Int. Cl. C10b *53/06*; C10g *9/28*

U.S. Cl. 208—8 9 Claims

A process for producing oil from shale or the like in which the shale is pyrolyzed in a rotating mill by rotating and milling with hot solid heat-carrying material, e.g., grinding balls, in which the overhead hydrocarbons and residue are recovered and part of the product, e.g. a butanes fraction of the overhead, is heated with hot flue gas and the hot product is returned to the mill to directly heat the pyrolysis zone.

3,442,790

OLEFIN-SULFUR DIOXIDE COPOLYMERIC WAX CRYSTAL MODIFIERS

Herbert G. Burkard, Roselle, Richard O. Henselman, North Plainfield, Harold N. Miller, Plainfield, and Norman Tunkel, Perth Amboy, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed July 26, 1966, Ser. No. 567,826

Int. Cl. C10g *43/20*, *43/08*

U.S. Cl. 208—28 7 Claims

A wax crystal modifier composition comprising a copolymer of a C_{10}–C_{50} substantially linear alpha olefin with sulphur dioxide. The copolymer may contain a minor amount of a third monomer, e.g., C_2–C_{12} cyclic, or acyclic olefins. The copolymers are utilized in dewaxing processes.

3,442,791

ANTI-FOULANT AGENTS FOR PETROLEUM HYDROCARBONS

Gerardo A. Gonzalez, Philadelphia, Pa., assignor to Betz Laboratories, Inc., Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Nov. 17, 1966, Ser. No. 595,045

Int Cl. C10g *9/16*

U.S. Cl. 208—48 15 Claims

Synergistic binary antifoulant additive for petroleum hydrocarbon streams subjected to elevated temperatures, e.g., heat exchangers, is the conventional metal deactivator, disalicylidene propane diamine, and a nalkylphenol or alkylphenol-formaldehyde condensate. Laboratory fouling tests using raw virgin furnace oil showed negligible antifoulant benefit for the phenol condensate alone and moderate benefit for deactivator alone. Excellent antifouling was obtained with the binary combination at deactivator/phenolic ratios in range of 1/0.5–1/2 and dosages of 1–20 p.p.m.

3,442,792

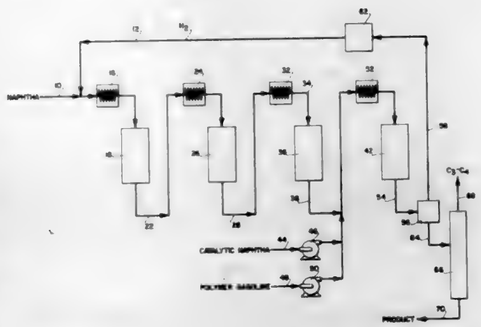
PROCESS FOR IMPROVING MOTOR OCTANE OF OLEFINIC NAPHTHAS

Jackson Eng, Sarnia, Ontario, and John L. Tiedje, Sarnia Township, Lambton County, Ontario, Canada, assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed Aug. 17, 1966, Ser. No. 573,107

Int. Cl. C10g *39/00*, *37/10*, *35/18*

U.S. Cl. 208—62 8 Claims



A process for improving the sensitivity of olefinic naphtha by integrating a hydrofining stage at the end of a hydroforming train.

3,442,793

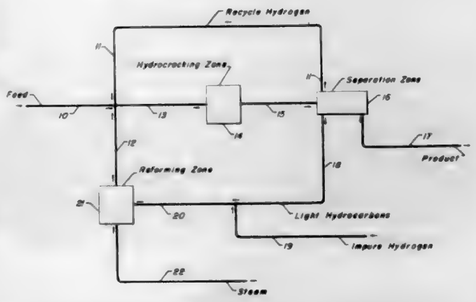
METHOD FOR HYDROCARBON CONVERSION

Don B. Carson, Mount Prospect, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Dec. 30, 1966, Ser. No. 606,134

Int. Cl. C10g *13/02*

U.S. Cl. 208—108 4 Claims



Method for converting hydrocarbons in the presence of hydrogen wherein the hydrogen gas used in the reaction is derived at least in part from the light paraffinic gases separated from the effluent of the reaction zone. It is uniquely applicable for purifying hydrogen for reuse in a hydrocracking reaction by steam-reforming an impure hydrogen stream in admixture with the light paraffin gases separated from the effluent of the hydrocracking reaction zone.

3,442,794

HYDROCARBON CONVERSION PROCESS WITH A CATALYST TREATED WITH AN ACID AND AN AMMONIUM COMPOUND

Henricus J. A. Van Helden, Herman W. Kouwenhoven, and Willem C. J. Quik, Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 17, 1967, Ser. No. 623,831

Claims priority, application Netherlands, Mar. 25, 1966, 6603927

Int. Cl. C10g *13/04*; B01j *11/00*; C07c *3/42*

U.S. Cl. 208—111 10 Claims

A process, catalyst and method of catalyst preparation for the conversion of hydrocarbons in the presence of hydrogen in which the catalyst contains one or more hydrogenation metallic or metallic compound components supported on a crystalline or cryptocrystalline silica-alumina in the acid or "H form," whose crystal lattice is acid resistant and which has been pre-treated, preferably separately, but in arbitrary order with an acid and an ammonium compound.

3,442,795

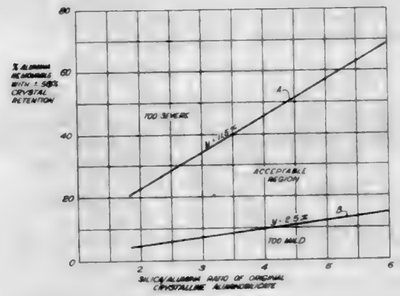
METHOD FOR PREPARING HIGHLY SILICEOUS ZEOLITE-TYPE MATERIALS AND MATERIALS RESULTING THEREFROM

George T. Kerr, Trenton, Charles J. Plank, Woodbury, and Edward J. Rosinski, Deptford, N.J., assignors to Mobil Oil Corporation, a corporation of New York

Continuation-in-part of application Ser. No. 261,494, Feb. 27, 1963. This application Oct. 11, 1965, Ser. No. 494,846

Int. Cl. C10g *13/02*

U.S. Cl. 208—120 46 Claims



1. A method of increasing the silica/alumina ratio of a crystalline aluminosilicate comprising exposing said aluminosilicate to hydrolysis while the latter is at least partially in its hydrogen form so as to remove aluminum atoms from the crystal lattice of said aluminosilicate, said hydrolysis treatment being effected within the acceptable region of the drawing and resulting in a product which retains at least 50% of the crystallinity of said aluminosilicate, and physically removing at least a portion of said aluminum atoms from said aluminosilicate.

7. A process as defined in claim 1 wherein said portion of said aluminum atoms is physically removd from said aluminosilicate by a chelating agent which will form a stable chelate with aluminum and wherein said chelating agent is also employed to convert said aluminosilicate at least partially to its hydrogen form prior to the hydrolysis step.

3,442,796

CONTINUOUS LOW PRESSURE REFORMING PROCESS WITH A PREREDUCED AND PRESULFIDED CATALYST

John C. Hayes, Palatine, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 570,693, Aug. 8, 1966. This application May 24, 1968, Ser. No. 731,694

Int. Cl. C10g *35/05*; B01j *11/74*

U.S. Cl. 208—139 6 Claims

A charge stock boiling in the gasoline range is continuously reformed in a substantially water-free reforming zone by contacting the charge stock, hydrogen and sulfur or a sulfur-containing compound with a specially prepared reforming catalyst at reforming conditions, including a pressure of 50 to 350 p.s.i.g. The reforming catalyst utilized is prepared by the steps of: (a) contacting sulfur-free and water-free hydrogen with a sulfur-free composite of a platinum group component and a halogen component combined with an alumina carrier material at conditions selected to substantially reduce the platinum group component to the elemental state; (b) contacting the resultant reduced composite with a water-free mixture of hydrogen and hydrogen sulfide, containing 0.1 to 10 mole percent H_2S, at conditions including a temperature of 900–1100° F., sufficient to incorporate sulfur into the composite; and (c) thereafter maintaining the resultant reduced and sulfided composite in a substantially water-free environment. The principal benefit flowing from this preparation procedure involves the achievement and maintenance of the catalyst in a highly activated and stable state which is especially resistant to the severe stresses imposed by continuous low pressure reforming service in the presence of sulfur, thereby substantially improving the performance of such a process.

3,442,797

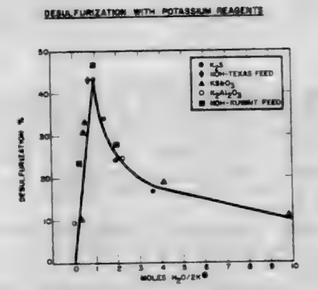
DESULFURIZATION PROCESS EMPLOYING A COMPLEX OF METAL OF GROUPS I-A, III-B, AND THE LANTHANIDE SERIES

Clyde L. Aldridge, Baton Rouge, La., assignor to Esso Research and Engineering Company, a corporation of Delaware

Filed June 23, 1966, Ser. No. 559,932

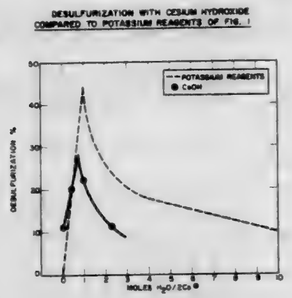
Int. Cl. C10g *25/04*

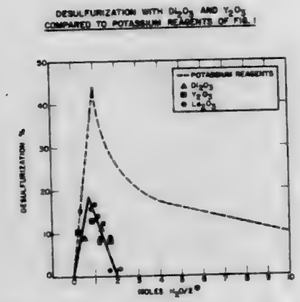
U.S. Cl. 208—243 8 Claims



Desulfurization of high boiling petroleum fractions is accomplished by the use of metal hydrates or complexes with water in which one molecule of water is bound to

two metal cations chosen from the groups consisting of Groups I–A, III–B and the lanthanide series. Water vapor





may be added as needed to maintain the critical complex ratio.

3,442,798
OXIDATION AND RECLAMATION PROCESS
Eugene Wilhelm Schoeffel, Kronenwetter, and Frederick John Zimmermann, Wausau, Wis., assignors to Sterling Drug, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Continuation of application Ser. No. 431,987, Feb. 11, 1965, and continuation-in-part of application Ser. No. 239,790, Nov. 23, 1960, which is a continuation-in-part of application Ser. No. 854,247, Nov. 20, 1959. This application Dec. 1, 1967, Ser. No. 687,401
Int. Cl. C02c *1/00*
U.S. Cl. 210—40 **7 Claims**

Organic combustibles in waste water are more completely wet air oxidized at temperatures within the range of 125 and 300° C. at which the oxidation thereof is incomplete by first concentrating the combustibles on a carbon adsorbent and then oxidizing an aqueous dispersion of the adsorbent containing the adsorbed combustibles.

3,442,799
CLARIFICATION OF RAW SEWAGE USING HYDROLYZED COPOLYMERS OF POLYMERIZABLE ACRYLIC AND VINYL COMPOUNDS
Frank J. Glavis, Rydal, David H. Clemens, Willow Grove, and Roger P. McDonnell, Philadelphia, Pa., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware
No Drawing. Filed Aug. 4, 1966, Ser. No. 570,168
Int. Cl. C02b *1/20;* **C08f** *15/36*
U.S. Cl. 210—54 **6 Claims**

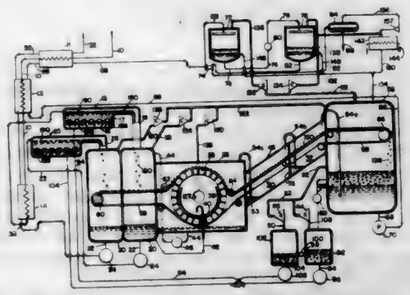
A polymeric flocculant capable of multifunctional aggregation containing (a) acrylate and/or methacrylate salt units and (b) vinyl hydroxide units is useful as a single clarification agent for separating suspended solids from raw sewage. The preferred flocculant is a sodium acrylate/vinyl alcohol copolymer prepared as the heterohydrolysis product of a methyl acrylate/vinyl acetate copolymer. The heterohydrolysis reaction is carried essentially to completion with sodium hydroxide in aqueous methanol. The molecular weight of the heterohydrolyzed flocculant is relatively low, i.e. an intrinsic viscosity of from about 1.0 to about 2.5.

3,442,800
METHOD AND APPARATUS FOR FILTERING AND DOSING A LIQUID
Walter J. Jasionowski, Norridge, Ill., assignor to Everpure Inc., Oakbrook, Ill., a corporation of Nevada
Filed Mar. 18, 1965, Ser. No. 440,831
Int. Cl. C02b *5/00, 1/22;* **B01d** *29/10*
U.S. Cl. 210—57 **11 Claims**



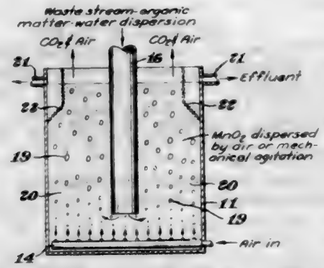
The filtering vessel includes an inlet and an outlet and contains a folded filter bag the interior of which is in communication with the outlet of the vessel such that all of the liquid flowing from the latter is filtered. A treating vessel is contained within the filtering vessel exteriorly of the filter bag. The treating vessel has its outlet in communication with the interior of the filter bag. The inlet of the treating agent has a filter with substantially the same filtering characteristics as the filter bag.

3,442,801
PROCESS AND APPARATUS FOR SEPARATING WATER FROM AN AQUEOUS SOLUTION
James H. Anderson, 1615 Hillock Lane, York, Pa. 17403
Filed Nov. 26, 1965, Ser. No. 509,949
Int. Cl. C02b *1/18, 3/06*
U.S. Cl. 210—59 **17 Claims**



An apparatus and process for separating water from aqueous solutions by extracting said water from said solutions through the crystallization of the water. The aqueous solution is introduced into a compartment where the water therein is crystallized, and the crystals are then dried and washed to effect the removal of any traces of the solution and then the crystals are melted to obtain water.

3,442,802
OXIDATION OF AQUEOUS ORGANIC DISPERSIONS
Charles E. Hamilton, James L. Teal, and James A. Kelly, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Jan. 25, 1967, Ser. No. 611,674
Int. Cl. B01d *17/00*
U.S. Cl. 210—63 **18 Claims**



Aqueous organic dispersions, including aqueous solutions and suspensions of organic materials are mixed with a finely divided manganese dioxide catalyst having a surface area of at least 10 square meters per gram. The catalyst and organics are contacted with gaseous oxygen to oxidize the organics and regenerate the catalyst. Such contacting can be carried out from the ambient temperature of the waste up to about 500° C. This may take place in situ within the liquid body of treated dispersion or in a sludge of organic material and catalyst separated from the dispersion. When the oxidation reaction is carried out in aqueous dispersions, liquid confining surfaces must be of essentially non-electroconducting materials to obtain efficient rates. The ratio of manganese dioxide to disperse organic material is at least 0.5:1, preferably at least 5:1. The pH of the system should be within the range from about 5.5 up to about 8.5 for optimum operation.

3,442,803
THICKENED FRICTION REDUCER FOR WATER-BASED OIL WELL TREATING FLUIDS
Merwin Frederick Hoover, Bethel Park, and John J. Padden, Pittsburgh, Pa., assignors, by mesne assignments, to Calgon Corporation, a corporation of Delaware
Filed Jan. 19, 1966, Ser. No. 521,652
Int. Cl. E21b *43/25;* **C10m** *7/26;* **C09k** *3/00*
U.S. Cl. 252—8.55 **6 Claims**

A method is disclosed of reducing friction in an aqueous oil well fracturing system by dissolving in the aqueous system a small amount of a copolymer of acrylamide and from about 1×10^{-3} to 6×10^{-3} weight percent methylene bisacrylamide. In a refinement of the process, a free-radical generating compound may also be used to degrade the polymer after its introduction into the formation.

3,442,804
LUBRICATING COMPOSITION CONTAINING A PHOSPHORODITHIOATE INHIBITOR
William M. Le Suer, Cleveland, and William A. Higgins, Gates Mills, Ohio, assignors to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio
No Drawing. Continuation of application Ser. No. 74,236, Dec. 7, 1960. This application Jan. 19, 1967, Ser. No. 610,244
The portion of the term of the patent subsequent to Sept. 19, 1978, has been disclaimed
Int. Cl. C10m *1/44*
U.S. Cl. 252—32.7 **8 Claims**

The invention disclosed herein relates to a lubricating composition containing a small amount, usually ranging from about 0.1% to about 20% by weight, of a particularly defined zinc phosphorodithioate. The zinc phosphorodithioate is illustrated by that derived from a dihydrocarbon phosphorodithioic acid in which the hydrocarbon radicals are primary alkyl radicals and consist of a mixture of lower molecular weight radicals (i.e., having less than 5 carbon atoms) and higher molecular weight radicals (i.e., having at least 5 carbon atoms). In the particularly defined zinc phosphorodithioate, the ratio of the lower molecular weight radicals to the higher molecular weight radicals, expressed on a molar basis, is within the range of 1:1 to 3:1. Lubricating compositions disclosed herein have unusually high thermal stability and are characterized by corrosion inhibiting and oxidation inhibiting properties.

3,442,805
LUBRICATING COMPOSITION
Keith L. Johnson, Matteson, Ill., assignor to Swift & Company, Chicago, Ill., a corporation of Illinois
No Drawing. Filed Aug. 31, 1966, Ser. No. 576,226
Int. Cl. C10m *1/32, 3/26, 5/20*
U.S. Cl. 252—34.7 **4 Claims**

A ternary lubricating composition having suppressed foaming properties comprising a condensate of a fatty acylating substance having an average of about 12 to 20 carbons in the acyl group and an alkylolamine having at least one acylatable hydrogen atom in the amino group, an alkylolamine soap of a fatty acid and polypropylene glycol having a molecular weight of between about 1,000 and 10,000 is disclosed. The compositions are useful in the drawing of copper metal so that the drawing may be accomplished with substantially no insoluble copper soap formation.

3,442,806
STABILIZED ORGANIC MATERIAL
James D. O'Neill, Southfield, Mich., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed Dec. 22, 1966, Ser. No. 603,716
Int. Cl. C10m *1/38, 1/54;* **B01j** *1/16*
U.S. Cl. 252—46.4 **9 Claims**

The combination of a dihydrocarbyl tin sulfide (e.g., di-n-butyl tin sulfide) with a phenolic antioxidant exhibits a synergistic stabilizing effect, especially in lubricating oils. Representative phenolic antioxidants are 4,4'-thiobis(6-tert-butyl-meta-cresol), 4,4'-methylene bis(2,6-di-tert-butylphenol), and 2,2'-methylene bis(4-methyl-6-tert-butylphenol).

3,442,807
NOVEL BORON ESTERS AND STABILIZATION OF OXIDIZABLE ORGANIC SUBSTANCES THEREWITH
Derek A. Law, Pitman, N.J., assignor to Mobil Oil Corporation, a corporation of New York
No Drawing. Filed Dec. 19, 1966, Ser. No. 602,504
Int. Cl. B01j *1/16;* **C10m** *1/54, 5/28*
U.S. Cl. 252—46.3 **18 Claims**

Organic base media subject to oxidative deterioration are stabilized by the presence of heterocyclic aromatic oxygenboron-nitrogen, preferably reaction products of borate esters and salicylaldimine or hydroxyquinoline.

3,442,808
LUBRICATING OIL ADDITIVES
Thornton P. Traise, Chicago Heights, Ill., and Randel Q. Little, Munster, and Roger W. Watson, Highland, Ind., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana
No Drawing. Filed Nov. 1, 1966, Ser. No. 591,084
Int. Cl. C10m *3/26, 3/22;* **C07d** *27/08*
U.S. Cl. 252—49.6 **12 Claims**

Lubricating oil additives prepared by reacting alkenyl succinic anhydride with the Mannich condensation product prepared by condensing alkyl substituted phenol,

formaldehyde and polyalkylene polyamine. The additives can optionally be further reacted with a boron compound such as boric acid, boric anhydride or a boric acid ester.

3,442,809

HYDROCARBON SUBSTITUTED POLYCYANOTETRAHYDROFURAN LUBRICATING OIL DETERGENTS

Garth M. Stanton, Pinole, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed July 21, 1966, Ser. No. 566,743

Int. Cl. C10m *1/20*

U.S. Cl. 252—51.5 **4 Claims**

Aliphatic hydrocarbon substituted polycyanotetrahydrofurans are provided as lubricating oil detergents.

3,442,810

CHEMICAL POLISHING COMPOSITION AND METHOD

Charles H. Elbreder, St. Louis, Mo., assignor to Garman Company, Incorporated, Lemay, Mo., a corporation of Missouri

No Drawing. Filed Feb. 25, 1966, Ser. No. 529,950

Int. Cl. C23f *3/04*

U.S. Cl. 252—79.4 **12 Claims**

An improved aqueous polishing composition which is effective for use in polishing articles composed of copper, brass or alloys of high copper content consists of a chromium compound such as chromium trioxide or sodium chromate which provides a concentration of 2–25% by weight of chromic acid in aqueous solution, a source of elemental bromine such as sodium bromide which provides 0.05–3.5% by weight of bromine in aqueous solution and either sulfamic acid or sulfuric acid in an amount sufficient to provide a pH of 0.1 to 2.0. The composition may be prepared in dry form and then dissolved in water to form an aqueous polishing composition. The copper article is contacted with the aqueous composition for a brief period and the reddish brown film which forms thereon is then removed by dipping the article in an acid or alkaline medium or by heating the article to a temperature above 180° F. The resulting article displays a smooth, bright finish having a high degree of luster.

3,442,811

HEAVY DUTY DETERGENT COMPOSITIONS

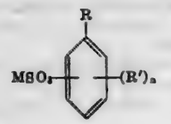
George L. O'Connor and Donald J. Foster, South Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed May 24, 1965, Ser. No. 458,407

Int. Cl. C11d *3/065, 1/22*

U.S. Cl. 252—138 **12 Claims**

Where the ortho-meta-para distribution of a biodegradable alkali metal alkaryl sulfonate detergent is about 35–55: 1–20: 35–55 respectively improved foam stability is obtained. The detergent also contains a sequestering agent, corrosion inhibitor and a soil redeposition inhibitor. The alkyl aryl sulfonate is characterized by the formula:



where M is an alkali metal; R is a straight-chain secondary alkyl group of from about 5 to about 17 carbons; *n* is an integer having a value from 1 to 2; R′ is an alkyl group of up to about 8 carbons but no more than the number of carbons in R; and the total number of carbon atoms in said alkyl group is in the range of from about 10 to 18.

3,442,812

DETERGENT BARS

James Douglas Barnhurst, Millington, Gilbert Merlin Leigh, Summit, and John Alexander Monick, Teaneck, N.J., assignors to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 26, 1965, Ser. No. 510,055

Int. Cl. C11d *1/84, 1/86*

U.S. Cl. 252—142 **14 Claims**

A detergent bar capable of yielding an acidic lather the active detergent components thereof consisting essentially of from about 30% to about 65% by weight of said bar of a non-soap anionic detergent selected from the group consisting of (1) alkane sulfonates, (2) alpha-sulfofatty esters and (3) mixtures of (1) with a minor proportion of a higher alkyl benzene sulfonate, and at least about 5% by weight of said bar of an amphoteric detergent selected from the group consisting of (1) N-long chain alkyl aminocarboxylic acids and (2) N-long chain alkyl iminocarboxylic acids (3) carboxymethyl dimethyl highly alkyl ammonium inner salts and (4) carboxymethyl dimethyl higher alkyl phosphonium inner salts.

3,442,813

GENERATION OF LIGHT BY THE REACTION OF OXALYL CHLORIDE PYRIDINE AND TERTIARY AMINE COMPLEXES WITH PEROXIDES IN THE PRESENCE OF A FLUORESCER

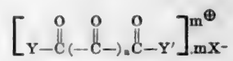
Laszlo Joseph Bollyky and Robert Henry Whitman, Stamford, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Continuation-in-part of application Ser. No. 428,828, Jan. 28, 1965. This application Sept. 13, 1967, Ser. No. 667,371

Int. Cl. C09k *1/02;* **F21k** *2/00*

U.S. Cl. 252—188.3 **9 Claims**

Disclosed is a chemiluminescent process and reactant complex comprising a chemiluminescent polycarbonyl dihalide Lewis base complex of the formula:



in which Y and Y′ are each a Lewis base substituent, where Y and Y′ are not both simultaneously halide groups, *n* is a number less than about 7, X^- is a halide anion, and *m* is a number from 1 to 2, *m* being 1 when one of Y and Y′ is a halide group, and at least one member selected from the group consisting of a fluorescer and a peroxide.

3,442,814

GENERATION OF CHEMILUMINESCENT LIGHT

Desmond Sheehan, Northford, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Sept. 23, 1965, Ser. No. 489,763

Int. Cl. C09k *1/02;* **B01j** *1/00*

U.S. Cl. 252—188.3 **16 Claims**

A method for obtaining chemiluminescent light by the reaction of an oxalyl halide with an oxalic acid or a keto acid in the presence of a fluorescer and water, the chemiluminescent composition of such ingredients and components of some of the ingredients in the composition.

3,442,815

GENERATION OF LIGHT BY THE REACTION OF OXALIC-TYPE AMIDES WITH HYDROPEROXIDES IN THE PRESENCE OF A FLUORESCENT COMPOUND

Michael McKay Rauhut, Norwalk, and Laszlo Joseph Bollyky, Stamford, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Jan. 12, 1966, Ser. No. 520,052

Int. Cl. C09k *1/02;* **B01j** *1/00*

U.S. Cl. 252—188.3 **8 Claims**

A method for obtaining chemiluminescent light by the reaction of an amide derivative of an oxalic type acid, said amide derivative being formed by reaction with an amine which is at least as acidic as 4-nitroaniline, with a hydroperoxide in the presence of a fluorescer and a solvent, the chemiluminescent composition, and components of some of the ingredients in the composition.

3,442,816

GENERATION OF LIGHT BY THE REACTION OF TETRACYANOETHYLENE OR OTHER ELECTRONEGATIVELY SUBSTITUTED ETHYLENE, ETHYLENE OXIDE AND CARBONYL COMPOUND WITH HYDROGEN PEROXIDE IN THE PRESENCE OF A FLUORESCER

Laszlo Joseph Bollyky, Stamford, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Feb. 23, 1966, Ser. No. 529,226

Int. Cl. C09k *1/02;* **B01j** *1/00*

U.S. Cl. 252—188.3 **10 Claims**

A method for obtaining chemiluminescent light by the reaction of a cyanoethylene or perhalocarbonyl compound with a peroxide in the presence of a fluorescer and a suitable diluent, and the composition providing such light.

3,442, 817

PREPARATION OF ZIRCONIA AND HAFNIA SOLS

Donald V. Luebke, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 15, 1966, Ser. No. 542,732

Int. Cl. B01j *13/00*

U.S. Cl. 252—313 **12 Claims**

Zirconia sols and hafnia sols are prepared by heating an aqueous solution of zirconyl acetate or hafnyl acetate to a temperature of 175° to 400° C. to form colloidal particles and contacting the resulting suspension with a cation exchange resin to remove free zirconyl or hafnyl ions and thereby effect peptization of the colloidal particles.

3,442,818

EMULSIFIERS FOR AGRICULTURAL PESTICIDES

Keith Liddell Johnson, Park Forest, Ill., assignor to Swift & Company, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Mar. 12, 1965, Ser. No. 439,424

Int. Cl. B01f *17/00, 17/12, 17/40*

U.S. Cl. 252—353 **8 Claims**

A process with compositions for preparing emulsifiers, particularly useful for agricultural pesticides, conprising the combination of two materials of similar ionic type; such as, a mixture of alkaxylated alkyl phenols and/or fatty alcohols which have been alkoxylated to different levels with a third material of dissimilar ionic type; such as, an alkylated aromatic sulfonate to produce an unexpected superior performance.

3,442,819

MOLECULAR SIEVE COATED PARTICULATE ADSORBENT AND PROCESSES USING SAME

Victor Herbert, Great Neck, N.Y., assignor to Mount Sinai Hospital Research Foundation, Inc., New York, N.Y., a membership corporation of New York

Continuation-in-part of application Ser. No. 443,075, Mar. 26, 1965. This application Feb. 25, 1966, Ser. No. 530,175

Int. Cl. C01b *31/08*

U.S. Cl. 252—428 **8 Claims**

This invention is directed to charcoal and other particulate adsorbents coated with molecular sieve compounds such as animal plasma, blood fractions, plasma expanders and other large molecular weight proteins to exclude large molecules and complexes while permitting small molecules and complexes to pass through the sieve and be adsorbed onto or desorbed from the particulate adsorbents, and to a process for separating dissolved molecular complexes, including molecules, having different molecular configurations.

3,442,820

OLEFIN POLYMERIZATION CATALYST PRETREATMENT

Steffen F. Dieckmann, Wilmington, Del., assignor to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed Mar. 30, 1966, Ser. No. 538,561

Int. Cl. B01j *11/00, 11/78;* **C08f** *3/02*

U.S. Cl. 252—429 **3 Claims**

1. A process for pretreating titanium trichloride to enhance its usefulness as a catalyst for the polymerization of olefins by reducing its solubility in the polymerization medium which comprises slurrying titanium trichloride in a solution of an organoaluminum compound in an inert liquid hydrocarbon reacting therewith at a temperature of about 20–80° C. an amount of ethylene sufficient to render the dispersed titanium compound substantially insoluble in said solution, and thereafter separating the treated titanium trichloride, washing the same at least once with an inert liquid hydrocarbon and recovering the treated titanium trichloride particles.

2. A process according to claim 1 where the titanium trichloride is prepared by the reaction of titanium tetrachloride with an alkylaluminum sesquihalide.

3,442,821

MANUFACTURE OF SPHEROIDAL SILICA-ALUMINA PARTICLES

Lee Hilfman, Prospect Heights, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Sept. 29, 1966, Ser. No. 583,094

Int. Cl. B01j *11/44, 11/34*

U.S. Cl. 252—429 **6 Claims**

Production of spheroidal silica-alumina particles by (a) admixing an alumina hydrosol with an acidified alkali metal silicate solution in a ratio to form a silica-alumina hydrosol comprising a major portion of silica, said alkali metal silicate solution containing chloride in from about 1.3 to about 1.8 mole ratio with the alkali metal content thereof, (b) admixing a gelling agent consisting of hexamethylenetetramine and urea with said silica-alumina hydrosol, said hexamethylenetetramine and urea being utilized in a weight ratio of from about 1/1 to about 2/1 and in an amount to provide from about 0.85 to about 2.0 equivalents of ammonia per equivalent of chloride contained in said hydrosol, (c) passing the resulting mixture in the form of droplets, and while still below gelation temperature, into an oil suspending medium maintained at from about 120° F. to about 500° F. and at a pressure to maintain the water content of the droplets in the liquid phase, retaining the droplets therein until they set to

spherical gel particles, and immediately thereafter aging said spheres in an alkaline medium.

3,442,822

METHOD OF MAKING ELECTRICAL RESISTOR BY RECRYSTALLIZATION

Kee Hyong Kim, Niagara Falls, N.Y., assignor to Air Reduction Company Incorporated, New York, N.Y., a corporation of New York

Continuation-in-part of application Ser. No. 286,202, June 7, 1963. This application Dec. 22, 1965, Ser. No. 515,539

Int. Cl. H01b *1/08, 3/08;* B01d *9/00*

U.S. Cl. 252—518 6 Claims

Disclosed is a method of making glass bonded, conductive metal oxide resistor compositions by a recrystallization process involving heating a mix of metal oxide such as, for example thallium oxide, and glass to dissolve the metal oxide therein, cooling and then reheating to precipitate crystallites of conductive metal oxide uniformly dispersed in the composition.

3,442,823

SEMICONDUCTOR CRYSTALS OF FIBROUS STRUCTURE AND METHOD OF THEIR MANUFACTURE

Alfred Müller and Manfred Wilhelm, Nuremberg, Germany, assignors to Siemens Aktiengesellschaft, Erlangen, Germany, a corporation of Germany

Filed Oct. 22, 1965, Ser. No. 501,918

Claims priority, application Germany, Mar. 18, 1965, S 96,033, S 96,034

Int. Cl. B01j *17/08;* H01l *3/20*

U.S. Cl. 252—518 7 Claims

Described is a polycrystalline semiconductor body consisting of fibrously elongated crystallites having substantially parallel longitudinal directions, said fibrous crystallites being individually monocrystalline and coalesced to one another and having substantially all the same crystallographic orientation in the longitudinal direction.

Also described is the method of producing a polycrystalline semiconductor body. This method comprises melting a mass of semiconductor material having the shape of an elongated body, freezing the body progressively from one end to the other, fusing to the last-frozen end a polycrystalline seed having a fibrous texture formed by monocrystallites whose longitudinal directions are substantially parallel to that of the body, and zone melting the body starting at the seed to impart a similar fibrous texture to the resulting polycrystalline product.

3,442,824

POLYMERIC COMPOSITIONS AND PROTECTIVE COATINGS

John W. Chandler, West Falls, N.Y., assignor, by mesne assignments, to Hempel's Marine Paints, Inc., New York, N.Y., a corporation of New York

No Drawing. Filed May 12, 1967, Ser. No. 637,930

Int. Cl. C08g *47/00, 47/02, 47/08*

U.S. Cl. 260—2 9 Claims

This invention relates to polymeric compositions formed by the interaction of a tetraalkyl titanate ester with low molecular weight polymers resulting from the partial hydrolysis of tetraethyl orthosilicate in acid solutions. These polymer compositiosn are particularly adapted for use as liquid vehicles to which powdered metal may be added to form protective compositions for application to ferrous surfaces.

3,442,825

PROCESS OF SULFONATING POLY-ALPHA, BETA,BETA-TRIFLUOROSTYRENE

Russell B. Hodgdon, Jr., Hamilton, John F. Enos, Peabody, and Edwin J. Aiken, Magnolia, Mass., assignors to General Electric Company, a corporation of New York

No Drawing. Original application Mar. 30, 1965, Ser. No. 444,010, now Patent No. 3,341,366, dated Sept. 12, 1967. Divided and this application Oct. 17, 1966, Ser. No. 586,945

The portion of the term of the patent subsequent to Sept. 12, 1984, has been disclaimed

Int. Cl. C08f *27/06;* C08j *1/34*

U.S. Cl. 260—2.2 6 Claims

1. A process of attaching sulfonic acid radicals to a polymer of alpha, beta, beta-trifluorostyrene in a position meta to the trifluoroethyl group comprising

dissolving a polymer of alpha, beta, beta-trifluorostyrene in liquid choloroform in a concentration of from 0.10 to 0.30 mole per liter, and

adding a sulfonating agent to the chloroform in a concentration of from 0.14 molecule per polymer phenyl group to 3.00 moles per liter of solution.

3,442,826

METHOD OF PREPARING POLYPEPTIDE GRAFT COPOLYMERS

Henri G. G. Dekking, Fullerton, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed Mar. 9, 1964, Ser. No. 350,531

The portion of the term of the patent subsequent to Sept. 28, 1982, has been disclaimed and dedicated to the Public

Int. Cl. D06m *13/00;* C08h *7/04*

U.S. Cl. 260—8 5 Claims

The invention comprises the graft propagation of a synthetic polymer from a polypeptide by base exchange of an organic azo compound having a functional group capable of undergoing base exchange with the ion exchange sites of the polypeptide. The resulting polypeptide-azo compound is thereafter heated in the presence of an ethylenically unsaturated monomer under solution, bulk or emulsion polymerization. Free radicals remain ionically bonded to the polypeptide and initiate polymerization of the monomer to propagate a polymer chain from the polypeptide. In this manner a synthetic monomer can be grafted to the polypeptide with a single terminal point of attachment. Preferred azo compounds are those having at least two bis-ion exchange groups or heterocyclic azo compounds wherein the azo nitrogens are within the heterocyclic ring are employed. The homolytic fission of these azo compounds results in the formation of free radicals, most of which are bonded to the polypeptide, thereby reducing the amount of homopolymer that is formed by unattached radicals in the polymerization.

3,442,827

PHOSPHOROUS URETHANES

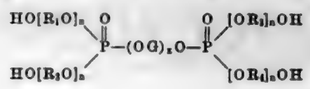
Lester Friedman, Beachwood Village, Ohio, assignor, by mesne assignments, to Union Carbide Corporation, a corporation of New York

No Drawing. Application Oct. 17, 1961, Ser. No. 145,749, now Patent No. 3,142,651, dated July 28, 1964, which is a continuation-in-part of application Ser. No. 129,529, Aug. 7, 1961, now Patent No. 3,081,331. Divided and this application May 28, 1964, Ser. No. 371,079

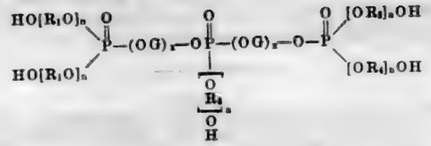
Int. Cl. C08g *33/16, 22/08*

U.S. Cl. 260—2.5 11 Claims

Polyurethanes are made flame resistant by employing the following polyphosphates as polyols:



or



wherein *n* is from 2 to 4 and *x* is at least 2. Corresponding thiophosphates may also be used.

3,442,828

FOAMED RESIN PROCESS

Friedrich J. O. Engelhardt, Frankfurt-Fechenheim, Germany, and Asaf A. Benderly, Potomac, Md., assignors to the United States of America as represented by the Secretary of the Army

No Drawing. Filed July 27, 1966, Ser. No. 568,345

Int. Cl. C08f *47/10, 33/08*

U.S. Cl. 260—2.5 7 Claims

A foamed-in-place styrene-base body is made by: (a) forming a rapid-curing mixture containing styrene and at least one substituted styrene monomer more reactive than styrene, up to 1 percent by weight of a free radical polymerization initiator, 1 to 10 percent by weight of a blowing agent, and up to 20 percent by weight of an insoluble, finely divided polymeric bubble-nucleator; (b) pouring the mixture into a receptacle; and (c) heating the mixture to about 70° C. to simultaneously foam and polymerize the mixture.

3,442,829

METHOD OF FOAMING THERMOPLASTIC POLYMERIC MATERIALS USING HYDROCARBYLTETRAZOLES AS THE FOAMING AGENT

Lane D. Moore, Vienna, W. Va., and John J. Randall, Cumberland, R.I., assignors to Borg-Warner Corporation, a corporation of Illinois

No Drawing. Filed Nov. 10, 1966, Ser. No. 593,308

Int. Cl. C08g *53/10;* C0f *47/10*

U.S. Cl. 260—2.5 4 Claims

Method of foaming thermoplastic polymeric materials using hydrocarbyltetrazoles as the foaming agent.

3,442,830

POLYURETHANE COMPOSITION

Colin Reginald Thomas, Kingsclere, Newbury, England, assignor to United Kingdom Atomic Energy Authority, London, England

No Drawing. Continuation of application Ser. No. 444,393, Mar. 31, 1965. This application Jan. 31, 1967, Ser. No. 613,040

Claims priority, application Great Britain, Apr. 6, 1964, 14,160/64

Int. Cl. C08g *22/44, 22/16, 22/10*

U.S. Cl. 260—2.5 3 Claims

A novel polyurethane composition consists of a reaction product of a cyclic polyester having a hydroxyl value in the range 450 to 850, and a cyclic polyisocyanate, the polyester being formed from a non-halogenated bicyclic polycarboxylic acid, or anhydride thereof, having one or more saturated hydrocarbon substituents, and a non-halogenated trifunctional or higher polyhydric alcohol, a portion of the polyester being added to the cyclic polyisocyanate to form a prepolymer, with the remaining polyester being added to the prepolymer, the cyclic portions of the polyisocyanate and polycarboxylic acid or anhydride being free from combined nitrogen. Polyurethane foam can be formed by adding a foaming agent to the mixture of prepolymer and remaining polyester.

3,442,831

VINYL CHLORIDE POLYMERIZATION PROCESS AND LATEX

Jack Dickstein, Leominster, Mass., Isadore Nathan Cooperman, Plainfield, N.J., and James John Cesanek, Newark, Del., assignors to The Borden Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed Apr. 21, 1966, Ser. No. 544,074

Int. Cl. C09k *5/02, 3/74;* C08f *29/18*

U.S. Cl. 260—17 10 Claims

This invention relates to a method of making a stabilized aqueous dispersion of a resin comprising polymerized vinyl chloride and to the resultant product; the process consisting essentially of dissolving a cellulosic ether and a sulfodicarboxylic acid amide of an aspartic acid or its esters into the heated latex and cooling the latex.

3,442,832

REINFORCED RUBBER BY COPRECIPITATION WITH STARCH XANTHANE OR PREGELATINIZED STARCH

Russell A. Buchanan and Charles R. Russell, Peoria, Ill., and Orville E. Weislogel, Orlando Air Force Base, Orlando, Fla., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Sept. 19, 1966, Ser. No. 580,555

Int. Cl. C08c *9/12;* C08d *9/06*

U.S. Cl. 260—17.4 6 Claims

White high tear and tensile strength rubber is prepared from natural or synthetic latices by adding major amounts of gelatinized starch or starch xanthate and coprecipitating, with high efficiency, readily filterable curds by adding salts, drying, milling with pigment and additives, and vulcanizing. The unexpected properties are attributed to phase reversal resulting in continuous rubber phase. The process is also well adapted to incorporation of lignin as a filler by coprecipitation from aqueous phase.

3,442,833

STRIPPABLE COATINGS

Gerald Dougherty, Wilmington, and Lewis W. Hall, Jr., Claymont, Del., assignors to Avisun Corporation, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed May 17, 1966, Ser. No. 550,650

Int. Cl. C08d *5/20;* C08f *29/10;* C08b *21/08*

U.S. Cl. 260—17 4 Claims

A strippable coating composition consisting of from 20 to 80 wt. percent cellulose acetate butyrate and 20 to 80 wt. percent atactic propylene-ethylene block copolymer.

3,442,834

ELECTRICAL INSULATING COMPOSITION

Ralph G. Flowers and Charles A. Winter, Pittsfield, Mass., assignors to General Electric Company, a corporation of New York

Filed June 18, 1965, Ser. No. 465,015

Int. Cl. C08g *37/30;* H01b *3/36, 3/38*

U.S. Cl. 260—19 8 Claims

An electrically insulating wire coating material comprises the heat-treated product of a mixture of polyvinyl acetal phenol-aldehyde resin, a metal-organic compound such as zinc octoate, and hexamethoxymethylmelamine, the coating material having improved power factor characteristics.

3,442,835

WATER-DISPERSIBLE POLYALKYLENE GLYCOL MODIFIED DRYING OIL ALKYD

Gerald M. Curtice, Burnsville, and David D. Taft, Minneapolis, Minn., assignors, by mesne assignments, to Ashland Oil and Refining Company, a corporation of Kentucky

No Drawing. Filed Aug. 19, 1965, Ser. No. 481,119
Int. Cl. C08g 17/16, 53/18, 17/14
U.S. Cl. 260—22 3 Claims

A water-dispersible drying oil alkyd resin modified with polyalkylene glycol and having the following ingredients:

	Percent by wt.
Drying oil	20–45
Polyhydric alcohol of 2–6 hydroxyl groups	15–40
Polyoxyethylene glycol (molecular wt. 600–6000)	5–15
Non-oxidizing monobasic carboxylic acid of 6–18 carbon atoms	10–25
Dicarboxylic acid or anhydride of 4–10 carbon atoms	20–35

Process for preparing the foregoing composition in which the drying oil, the polyoxyethylene glycol, the non-oxidizing monobasic carboxylic acid, and 40–100% of the polyhydric alcohol are mixed and heated in the first step to obtain an acid value of 0–25; and in the second step the remainder of the polyhydric alcohol and all of the dicarboxylic acid or anhydride are added to the mixture and heated until the acid value is 5–25; and the resulting mixture neutralized and dispersed in water. The product of this invention is a water-dispersible resin well suited to form water-based paints or other coating compositions having an excellent stability and resistance to hydrolysis.

3,442,836

VINYLIDENE CHLORIDE COPOLYMER COATING COMPOSITION FOR WATER-SENSITIVE ORGANIC POLYMER FILM

Frederick Peter Barry, Clinton, Iowa, assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 30, 1965, Ser. No. 510,696
Int. Cl. C08f 29/14; C09d 5/02, 3/74
U.S. Cl. 260—23 6 Claims

A vinylidene chloride copolymer coating composition for coating water-sensitive organic polymer film, e.g., regenerated cellulose film, comprising as essential ingredients in avolatile organic solvent solution of copolymer from about 2 to 6 parts by weight of candelilla wax, and from 1 to 3 parts by weight of calcium or ammonium stearate per 100 parts by weight of copolymer, and from 0.1% to 0.5% of water based on the total weight of the solution.

3,442,837

TRANSPARENT POLYVINYL CHLORIDE CONTAINING HIGH DENSITY POLYETHYLENE AS A LUBRICANT

Walter Brotz, Gersthofen, and Dietrich Runge, Aystetten, Germany, and Manfred Karl Furchtegott Albrecht, deceased, late of Gersthofen, Germany, by Helene Albrecht, nee Ruess, coheiress, Gersthofen, Hilde Albrecht, Gauting, and Elisabeth Hertlein, nee Paulus, Munich, Germany, legal representatives, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Dec. 1, 1965, Ser. No. 510,987
Claims priority, application Germany, Dec. 2, 1964, F 44,586
Int. Cl. C08f 29/18
U.S. Cl. 260—23 3 Claims

Polyvinyl chloride containing, as a lubricant, 0.1 to 10% by weight of a low pressure polyethylene having a density of 0.93 to 0.97 and a molecular weight of 3,000 to 20,000 and, optionally, esters of montan acids, fatty acids having 8 to 18 carbon atoms, esters of said fatty acids or salts of said fatty acids.

3,442,838

NON-TOXIC COMPOSITIONS COMPRISING VINYL CHLORIDE RESIN, METAL SALTS AND ROSIN OR ESTER THEREOF

Yuji Hoshi and Akira Kaneko, Nakoso-shi, Japan, assignors to Kureha Kagaku Kogyo Kabushiki Kaisha, Tokyo-to, Japan, a joint-stock company of Japan

No Drawing. Filed Dec. 7, 1965, Ser. No. 512,193
Claims priority, application Japan, Dec. 9, 1964, 39/69,311
Int. Cl. C08f 29/18
U.S. Cl. 260—23 5 Claims

A composition containing a vinyl chloride polymer, characterized by transparency and non-toxicity, comprising 100 weight parts of a vinyl chloride homopolymer or a copolymer essentially consisting of units derived from vinyl chloride, 0.5 to 5 weight parts of a non-toxic stabilizer consisting of a calcium salt of an aliphatic monocarboxylic acid and a zinc salt of an aliphatic monocarboxylic acid, 0.05 to 2 weight parts of rosin acid or an ester thereof and a small amount of an epoxidized vegetable oil.

3,442,839

COATING COMPOSITIONS COMPRISING AN UNSATURATED GLYCERIDE AND A NON-RUBBERY, UNSATURATED HYDROCARBON POLYMER

Howard L. Gerhart and Marco Wismer, Gibsonia, and Paul J. Prucnal, Cheswick, Pa., assignors to PPG Industries, Inc., Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Nov. 23, 1964, Ser. No. 413,327
Int. C08f 3/16, 15/40, 29/08
U.S. Cl. 260—23.5 17 Claims

This invention relates to resinous compositions comprising an unsaturated glyceride oil and an interpolymer of a polyunsaturated hydrocarbon monomer and at least one monoolefin having a single copolymerizable ethylenic group, said interpolymer having an essentially saturated carbon chain containing a substantial proportion of the total carbon atoms in the polymer molecule, said interpolymer being characterized by the fact that it is substantially cured by oxidative mechanism.

3,442,840

COPOLYMERS OF OLEFINES WITH COMPOUNDS HAVING A PHENANTHRENE NUCLEUS

Janine Ourgand, Paris, France, assignor to Societe Nationale des Petroles d'Aquitaine, Paris, France

No Drawing. Filed Apr. 20, 1966, Ser. No. 543,950
Claims priority, application France, Apr. 20, 1965, 13,767
Int. Cl. C08f 1/42, 15/40, 15/14
U.S. Cl. 260—27 11 Claims

Substantially linear, amorphous, unsaturated and vulcanizable copolymers of high molecular weight are prepared by polymerizing a mixture of at least one olefin and a resinic acid derivative, containing a nucleus of the phenanthrene type, in the presence of a Ziegler type catalyst.

3,442,841

ASPHALT-ETHYLENE/VINYL ACETATE COPOLYMER COMPOSITIONS

Robert L. Adelman, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 13, 1962, Ser. No. 187,195
Int. Cl. C08h 13/08
U.S. Cl. 260—28.5 4 Claims

1. A composition comprising asphalt and dispersed therein 0.1–40% of an ethylene/vinyl acetate copolymer based on the combined weight of said asphalt and copolymer, said copolymer containing 5–40% by weight of vinyl acetate.

3,442,842

PROCESS FOR THE PREPARATION OF WATER-IN-OIL EMULSIONS

Wulf von Bonin, Leverkusen, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Apr. 20, 1965, Ser. No. 449,631
Claims priority, application Germany, May 30, 1964, F 43,029
Int. Cl. C10m 3/22; C08g 17/003
U.S. Cl. 260—29.2 4 Claims

Water-in-oil emulsions wherein the continuous organic phase includes, as emulsifying agent, a modified polyester having a molecular weight between 1,000 and 20,000, said modified polyester being a water insoluble polyester having a molecular weight between 500 and 10,000 of a diol and a carboxylic acid, reacted, through its terminal carboxyl and hydroxyl groups, with a water soluble polyethylene oxide reaction product having a molecular weight between 400 and 10,000.

3,442,843

PREPARATION OF SELF-CROSSLINKING POLYURETHANE DISPERSIONS

Wolfgang Keberle, Bergisch-Neukirchen, and Dieter Dieterich, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed June 17, 1966, Ser. No. 558,228
Claims priority, application Germany, June 18, 1965, F 46,364
Int. Cl. C08g 53/18, 51/76, 51/80
U.S. Cl. 260—29.2 9 Claims

Self-crosslinking dispersions or aqueous colloidal solutions are prepared by reacting a polyurethane prepared from an organic polycyanate and an active hydrogen-containing compound with a compound containing at least one isocyanate or one isothiocyanate compound and at least one alkoxymethyl isocyanate or isothiocyanate compound and subsequently with a compound containing a cyclic ring or a compound having at least one active hydrogen atom and at least one salt-type or salt-forming group and dispersing the thus formed modified polyurethane in an aqueous polyurethane dispersion.

3,442,844

TERPOLYMER LATEX AND PROCESS

Robert Thomas Bouchard, Gardner, Jack Dickstein, Leominster, and Donald Eugene Dean, Fitchburg, Mass., assignors to The Borden Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed Feb. 10, 1966, Ser. No. 526,381
Int. Cl. C08f 15/40; C09d 5/02
U.S. Cl. 260—29.6 10 Claims

This invention pertains to a process for making layered terpolymers, to the terpolymers made thereby and to latex paints incorporating said terpolymers. The scrub resistance of latex paints is greatly enhanced by incorporating terpolymers therein. The terpolymers are prepared by forming layers of vinyl acetate, a dialkyl ester of a dicarboxylic acid and an acrylate ester, the outer layer having a percentage of acrylate ester, based on the monomers in said layer, far greater than that of the inner layer.

3,442,845

HOT AND COLD WATER REDISPERSIBLE POLYVINYL ACETATE ADHESIVES

Peter Spiros Columbus, Whitestone, N.Y., and Carl Reinhold Erikson, Maywood, N.J., assignors to The Borden Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed Nov. 4, 1966, Ser. No. 591,951
Int. Cl. C09 3/14, 29/30
U.S. Cl. 260—29.6 7 Claims

This invention relates to polyvinyl acetate adhesives redispersible in hot and cold water with any dried film comprising an emulsion of a polyvinyl acetate, a non-thermoplastic water-soluble anti-coalescing agent of the type hereindescribed and a non-volatile, water-soluble plasticizer for said anti-coalescing agent that is immiscible with the polyvinyl acetate resin, said plasticizer being present in amount to impart flexibility to the dried adhesive film and the ratio of polyvinyl acetate to anti-coalescing agent not exceeding from about 7 parts by weight of acetate for each part by weight of agent.

3,442,846

INSULATING VARNISHES BASED ON METHYLOL DIPHENYLOXIDES

Henri Vayson de Pradenne, Paris, France, assignor to Societe Generale de Constructions Electriques et Mecaniques, Paris, France

No Drawing. Filed Nov. 12, 1965, Ser. No. 507,517
Int. Cl. C08g 17/04, 17/133
U.S. Cl. 260—30.4 3 Claims

The curing time of the heat condensation product of hydroxymethyldiphenyloxide in the presence of phosphoric acid is substantially reduced by the addition of a polyfunctional aromatic acidic cross-linking agent.

3,442,847

POLYESTER RESIN WIRE COATING COMPOSITIONS

Lionel J. Payette, Scotia, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Oct. 10, 1966, Ser. No. 585,292
Int. Cl. C08g 17/08; C08f 45/36, 45/34
U.S. Cl. 260—33.4 5 Claims

Stable polyester resin based wire enamels having high solids contents are provided by heating the polyester-solvent system at reflux temperatures.

3,442,848

POLYVINYL ALCOHOL SIZING COMPOSITIONS CONTAINING DELIQUESCENT COMPOUNDS AND PLASTICIZERS

Juniti Sezaki, Kibi-gun, Okayama-ken, and Tatsuaki Hattori, Kyoichiro Ikari, and Saburo Imoto, Kurashiki-shi, Japan, assignors to Kurashiki Rayon Co., Ltd., Kurashiki-shi, Japan, a corporation of Japan

No Drawing. Filed Mar. 8, 1967, Ser. No. 621,423
Claims priority, application Japan, Mar. 15, 1966, 41/16,256
Int. Cl. C08f 29/26, 45/72; C09k 3/00
U.S. Cl. 260—33.4 7 Claims

Paper sizing compositions comprising a water-soluble polyvinyl alcohol paper sizing agent having a degree of polymerization of, for example, about 300 to 4000, preferably about 1000 to 2500, and a degree of saponification of, for example, about 35 to 100 mol. percent, a highly hygroscopic or deliquescent metallic compound capable of forming a molecular compound with polyhydric alcohols, in an amount of about 2 to 41 wt. percent with respect to the polyvinyl alcohol, and a polyhydric alcohol plasti-

cizer for the polyvinyl alcohol, e.g. glycols, in an amount of about 2 to 35 wt. percent respect to the polyvinyl alcohol.

3,442,849

EPOXY RESIN COMPOSITION AND PROCESS FOR PREPARING SAME

Irving Tashlick, Rockaway, William H. Rutter, Succasunna, and William J. Zak, Wharton, N.J., assignors to Interpace Corporation, East Orange, N.J., a corporation of Delaware

No Drawing. Filed May 20, 1965, Ser. No. 457,486

Int. Cl. C08g *30/14, 51/04*

U.S. Cl. 260—37 **2 Claims**

A substantially anhydrous one-component epoxy resin composition which has superior shelf life and which can be made ready for use by addition of water. The essential components of the composition are an epoxy resin, a polyamine sulfate addition salt or a polyamine phosphate addition salt containing a maximum of four amino groups, and calcium oxide or barium oxide.

3,442,850

OXYMETHYLENE POLYMER COMPOSITIONS CONTAINING CARBON BLACK

Merrill N. O'Brien, Jr., New Providence, and Frank M. Berardinelli, South Orange, N.J., assignors to Celanese Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 30, 1966, Ser. No. 561,733

Int. Cl. C08g *51/08, 51/60, 37/02*

U.S. Cl. 260—37 **13 Claims**

The resistance of stabilized oxymethylene polymers to the degrative effects of outdoor weathering and exposure to ultra-violet radiation is improved by the addition of carbon black to the polymer. This addition of carbon black adversely affects the thermal stability of the polymer. The incorporation of an aromatic amine antioxidant containing a plurality of aromatic rings reduces these adverse incorporation of the carbon black.

3,442,851

POLYMERIZATION OF CAST ACRYLIC RESINS

Robert J. McManimie, Glendale, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 423,862, Jan. 6, 1965. This application Dec. 17, 1965, Ser. No. 514,672

Int. Cl. C08f *1/84, 1/78*

U.S. Cl. 260—41 **16 Claims**

1. A process for casting acrylic sheet comprising polymerizing an alkyl methacrylate monomer in the presence of a free radical catalyst whose decomposition is accelerated by a complexed boron compound of the formula $Z{\cdot}BR_3$ where each R can be hydrogen, halogen or hydrocarbon or hydrocarbonoxy group having from 1 to about 14 carbon atoms or $—OBR_2$ group and Z is a weakly basic complexing agent having an ionization constant in the range of about 10^{-5} to about 10^{-11} and in the presence of at least 33% by weight inorganic filler material having a water solubility less than 0.15 gram per liter, said material being sufficiently dispersed and distributed throughout the monomer to serve as an effective heat sink for the exothermic heat of polymerization.

3,442,852

HEAT- AND LIGHT-STABILIZED MOLDING COMPOSITIONS CONTAINING TIN STABILIZERS

Christoph Dorfelt, Burghausen (Salzach), and Werner Lorz, Guffiham, near Altotting, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed May 5, 1966, Ser. No. 547,732

Claims priority, application Germany, May 21, 1965, F 46,113

Int. Cl. C08f *45/62;* **C07d** *7/22*

U.S. Cl. 260—45.75 **3 Claims**

An organotin stabilizing agent and molding compositions comprising a homopolymer or copolymer of viynl chloride utilizing an organotin stabilizing agent obtained by reacting a compound of the formula

$$R—Sn—(X)_3$$

wherein R is a hydrocarbon; and X halogen, with a mixture of an alkali metal sulfide and (a) aliphatic alkali metal mercaptide or (b) an alkali metal salt of a saturated or unsaturated mono or polycarboxylic acid; effecting the preparation of the stabilizer at about 20–100° C. in an aqueous or organic solvent medium.

3,442,853

HEAT STABILIZATION OF POLYVINYL FLUORIDE

Saul Gobstein, University Heights, Ohio, assignor to Ferro Corporation, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed May 10, 1967, Ser. No. 637,329

Int. Cl. C08f *45/58, 29/16;* **C08g** *51/58*

U.S. Cl. 260—45.95 **3 Claims**

This invention relates to certain novel poly(vinyl fluoride) compositions, and the stabilization of poly(vinyl fluoride) resin compositions against heat degradation by incorporating therein from about 0.1 to about 5.0 parts by weight, per 100 parts by weight of resin, of a member selected from the group consisting of a 2,2'-thiobis(para-alkylphenol), dialkyl pentaerythritol diphosphite, and mixtures of a 2,2'-thiobis(para-alkylphenol) and a dialkyl pentaerythrityl diphosphite.

Novel poly(vinyl fluoride) compositions within the scope of the present invention consist essentially of a poly (vinyl fluoride) resin and from about 0.1 to about 5.0 parts by weight, per 100 parts by weight of resin, of a stabilizer as described above. They may also include suitable pigments, solvents, plasticizers, extenders and the like. When employed in coating formulations, the novel compositions of the present invention have been found to exhibit greatly improved adhesion characteristics.

3,442,854

QUATERNARY AMMONIUM PHOSPHONIUM AND ARSONIUM CATALYSTS FOR THE PRODUCTION OF POLYCARBONATES BY THE TRANSESTERIFICATION METHOD

Ulrich Curtius and Ludwig Bottenbruch, Krefeld-Bockum, and Hermann Schnell, Krefeld-Uerdingen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Jan. 20, 1966, Ser. No. 521,808

Claims priority, application Germany, Jan. 21, 1965, F 45,012

Int. Cl. C08g *17/003, 17/13*

U.S. Cl. 260—47 **10 Claims**

A process for the production of thermoplastic polycarbonates by the transesterification method in which salts of quaternary ammonium, phosphonium or arsonium bases are employed as the transesterification catalyst.

3,442,855

CUPROUS SALT-AMINE CATALYZED PHENOL POLYMERIZATION IN PRESENCE OF ALKALI METAL PHENOLATE

Mohamed Roshdy Ismail, Troisdorf, Germany, assignor to Dynamit Nobel AG, Troisdorf, Germany, a corporation of Germany

No Drawing. Filed July 6, 1966, Ser. No. 563,048

Claims priority, application Germany, July 16, 1966, D 47,736

Int. Cl. C08g *23/18*

U.S. Cl. 260—47 **7 Claims**

Improvement in the process of producing polyphenylene oxides by the oxidative coupling of phenols in the presence of copper-ammonium complexes and the use of alkali metal phenolates in combination with the copper amine complexes.

3,442,856

EPOXY RESIN COMPOSITION WITH KETIMINES AS LATENT CURING AGENTS

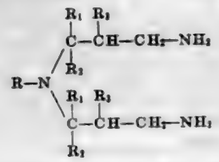
Don E. Floyd, Robbinsdale, Minn., assignor to General Mills, Inc., a corporation of Delaware

No Drawing. Original application Sept. 24, 1963, Ser. No. 311,244, now Patent No. 3,337,606. Divided and this application Sept. 30, 1966, Ser. No. 583,412

Int. Cl. C08g *30/14, 30/16*

U.S. Cl. 260—47 **10 Claims**

Epoxy resins having a plurality of 1,2-epoxide groups are cured with ketimines prepared from alkyl aldehydes of 2 to 6 carbon atoms or alkyl ketones of 3 to 9 carbon atoms and an adduct of 2.5 to 4 mols of an aliphatic amine having the formula



where R is an aliphatic hydrocarbon radical containing 8 to 22 carbon atoms and R_1, R_2 and R_3 are radicals selected from the group consisting of hydrogen and alkyl groups containing 1 to 4 carbon atoms with 2.5 to 4 moles of an α,β-unsaturated nitrile.

3,442,857

BORON TRIFLUORIDE-HYDROGEN FLUORIDE CATALYZED SYNTHESIS OF POLY(AROMATIC SULFONE) AND POLY(AROMATIC KETONE) POLYMERS

Roger L. Thornton, Richmond, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 507,247, Nov. 10, 1965. This application Oct. 27, 1966, Ser. No. 589,793

Int. Cl. C08g *33/00*

U.S. Cl. 260—47 **6 Claims**

The preparation of poly(aromatic ketone) and poly (aromatic sulfone) polymers in a condensation polymerization reaction employing a mixed boron trifluoride-hydrogen fluoride catalyst, the resulting polymers being useful in applications such as films and adhesives.

3,442,858

PRODUCTS OBTAINED BY CLEAVING POLYPHENYLENE ETHERS

Allan S. Hay, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Oct. 5, 1967, Ser. No. 673,014

Int. Cl. C08g *23/20*

U.S. Cl. 260—47 **10 Claims**

Polyphenylene ethers are cleaved to lower molecular weight products containing alkali metal substituents when reacted with alkali metal adducts of arenes having at least two connected or fused aromatic rings. An alkali metal will react directly with aryl substituted polyphenylene ethers to form an adduct with the polymer which then cleaves to the lower molecular weight products. The products have an average of two alkali metal atoms on each polymer unit. These alkali metal atoms on th products readily react with various reagents to produce derivatives of the cleaved polymer. The alkali metal-containing cleaved polymers may be used in the production of graft or block copolymers.

3,442,859

CONDENSATES OF SULFONATED FORMALDEHYDE-MIXED PHENOLS CONDENSATES WITH FORMALDEHYDE AND A PHENOL

Stanley A. Lipowski, Livingston, and James M. Kelly, Belford, N.J., assignors to Diamond Shamrock Corporation, a corporation of Delaware

No Drawing. Filed Aug. 30, 1965, Ser. No. 483,832

Int. Cl. C08g *5/02, 5/06;* **C14c** *3/20*

U.S. Cl. 260—49 **6 Claims**

Sulfonated condensates of formaldehyde and mixed phenols are condensed with formaldehyde and a phenol to obtain all purpose synthetic tanning agents. Mixed phenols, which are a mixture of phenol and lower alkyl phenols, are condensed with formaldehyde and then sulfonated to obtain a condensate which is condensed with formaldehyde and a phenol.

3,442,860

PROCESS FOR THE MANUFACTURE OF COPOLYMERS OF TRIOXANE CAPABLE OF BEING CROSS-LINKED BY LIGHT

Karl-Heinz Hafner, Bad Orb, Edgar Fischer, Frankfurt am Main, and Gunther Mebwarb, Kelkheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed June 21, 1966, Ser. No. 559,088

Claims priority application Germany, June 30, 1965, F 46,473

Int. Cl. C08g *1/14;* **C08f** *1/16*

U.S. Cl. 260—52 **2 Claims**

Copolymers and terpolymers of trioxane capable of being cross-linked by light are obtained by copolymerizing 70 to 99.5% by weight of trioxane, 0 to 10% by weight of cyclic ethers and 0.5 to 20% by weight of unsaturated aromatic glycidyl ethers containing a C=C double bond in conjugation with a carbonyl group and a benzene nucleus in the presence of cationic catalysts at temperatures in the range of −50° C. to +110° C.

3,442,861

POLYAMIDE-ACID AND POLYIMIDE POLYMERS CROSS-LINKED WITH SELECTED ALDEHYDES AND KETONES

Erhard F. Hoegger, Ardentown, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 2, 1966, Ser. No. 546,539

Int. Cl. C08g *20/32, 20/40*

U.S. Cl. 260—64 **3 Claims**

Cross-linked aromatic polyimide polymers cross-linked by use of a ketone or aldehyde, which are effective adhesives for other polyimides.

3,442,862
METHOD FOR THE SOLID PHASE COPOLYMERIZATION OF TRIOXANE
Per Gustaf Magnus Flodin and Per Kornfeldt, Perstorp, Sweden, and Seizo Okamura and Toshinobu Higashimura, Sakyo-ku, Kyoto, Japan, assignors to Perstorp Aktiebolag (sometimes known as Perstorp AB), Perstorp, Sweden
No Drawing. Filed Feb. 14, 1964, Ser. No. 344,815
Claims priority, application Sweden, Feb. 22, 1963, 1,927/63
Int. Cl. C08g *1/04*
U.S. Cl. 260—67 4 Claims

1. A process for the preparation of heat resistant copolymers of trioxane which comprises subjecting trioxane crystals to a temperature greater than 30° C. and not exceeding the melting point of said crystals in an atmosphere containing vapors of a cyclic comonomer and a cationic polymerization catalyst, and recovering a copolymer of trioxane and said comonomer.

3,442,863
OXYMETHYLENE POLYMERS CONTAINING UNITS DERIVED FROM CHLORINATED AROMATIC GLYCOLS AND ALDEHYDES
Manuel Slovinsky, Fanwood, N.J., assignor to Celanese Corporation, a corporation of Delaware
No Drawing. Filed June 10, 1964, Ser. No. 374,146
Int. Cl. C08g *23/00*
U.S. Cl. 260—67 3 Claims

This disclosure contains descriptions of fire resistant polyacetals and oxymethylene copolymers prepared from diols having a depending hetero substituent such as a halogen, nitro, cyano, alkoxy, or keto oxygen substituent.

3,442,864
FORMALS OF NORBORNANE-2,7-DIOLS AND COPOLYMERS THEREOF WITH TRIOXANE
Thomas A. Magee, Mentor, Ohio, assignor to Diamond Alkali Company, Cleveland, Ohio, a corporation of Delaware
No Drawing. Filed June 30, 1965, Ser. No. 468,637
Int. Cl. C08g *1/10, 1/04*
U.S. Cl. 260—67 21 Claims

A monomeric cyclic formal of either unsubstituted norbornane-2,7-diol or of an alkyl or alkoxy-substituted derivative thereof is obtained by reacting the said norbornane-2,7-diol with trioxymethylene in the presence of a suitable water-azeotroping solvent and employing as the condensation catalyst, a mineral acid or an organic mineral acid. The cyclic formal product is then copolymerized with trioxane to produce an oxymethylene copolymer having a high degree of thermal stability.

3,442,865
PROCESS FOR THE MANUFACTURE OF FLUORINE-CONTAINING COPOLYMERS OF TRIOXANE
Klaus Weissermel, Kelkheim, Taunus, Karl-Heinz Häfner, Bad Orb, and Klemens Gutweiler, and Edgar Fischer, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed Apr. 8, 1966, Ser. No. 541,112
Claims priority, application Germany, Apr. 24, 1965, F 45,896
Int. Cl. C08g *1/12*
U.S. Cl. 260—67 5 Claims

Polyoxmethylene copolymers having improved adherence to metals are disclosed. The polmers may be prepared by copolymerizing 70 to 99.5% by weight, based on the total weight of monomer, of trioxane and 0.5 to 20% by weight of a fluorine-containing cyclic ether of the general formula:

$$(R_1)_a C(R_3)_b—O$$
$$(R_2)_c C(R_4)_d—(R_5)_n$$

wherein R_1 and R_2 are aliphatic hydrocarbon radicals containing 1 to 10 fluorine atoms and 1 to 10 carbon atoms and in which the hydrocarbon chains of the hydrocarbon radicals may (A) be interrupted by 1 to 3 oxygen atoms, (B) comprise a 4- to 6-membered hydrocarbon ring and (C) contain chlorine atoms; R_3 and R_4 are hydrogen or an alkyl group of 1 to 2 carbon atoms; R_5 is methylene, oxymethylene, $—CH_2OCH_2—$ or $—CH_2CH_2—O—CH_2$; *a*, *b*, *c* and *d* are 0 to 2, the sum of $a+c$ being 1 or 2 and the sum of each of $a+b$ and $c+d$ being 2; and *n* is 1 to 3. The polymerization reaction mixture may contain from 0 to 10% by weight of a flourine-free cyclic ether.

3,442,866
PROCESS FOR PRODUCING FINELY DIVIDED SOLID ACETAL COPOLYMERS
Robert M. Seddon and Lyle Dana Scarbrough, El Paso, Tex., assignors to Celanese Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 7, 1966, Ser. No. 519,359
Int. Cl. C08g *1/04*
U.S. Cl. 260—67 8 Claims

A process for producing acetal polymers wherein a polyacetal forming polymerization mixture is introduced into a reaction zone comprising an elongated casing substantially following the outer bounaries of at least one pair of intermeshing, parallel screw members contained in said casing, said screw members having their threads running in the same direction and being longitudinally rotated in the same direction, and conveying said polymerization mixture through said zone by axially rotating said screw members while polymerizing at least 60 weight percent of the polymerizable material in said mixture. This provides polyacetal product in the form of finely divided solids.

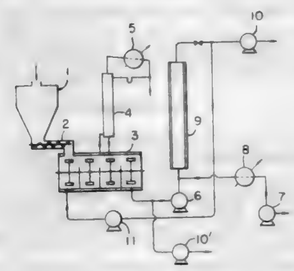
3,442,867
PROCESS FOR POLYMERIZING CYCLIC ETHERS AND CYCLIC ACETALS WITH AN ARSENIC-CONTAINING CATALYST
Herbert May, Tudor City Place, N.Y., Brian John Kendall-Smith, Northfield, Birmingham, John Alan Dodd, West Bromwich, and Alan Thomas Instone, Tipton, England, assignors to British Industrial Plastics Limited, London, England, a corporation of the United Kingdom
No Drawing. Filed Nov. 21, 1966, Ser. No. 595,626
Claims priority, application Great Britain, Nov. 23, 1965, 49,655/65
Int. Cl. C08g *1/20, 23/14*
U.S. Cl. 260—67 14 Claims

A process for preparing high molecular weight homopolymers and copolymers suitable for moulding, by polymerising cyclic ethers or cyclic acetals in the presence of arsenic pentafluoride and its complexes.

3,442,868
NOVEL PROCESS FOR THE PREPARATION OF POLYESTER
Kazuo Ogata, Kiyoshi Kazama, Shozo Suzuki, and Yasuo Morimatsu, Matsuyama-shi, Japan, assignors to Teijin Limited, Osaka, Japan, a corporation of Japan
Filed July 15, 1966, Ser. No. 565,571
Claims priority, application Japan, July 20, 1965, 40/43,828
Int. Cl. C08g *17/01*
U.S. Cl. 260—75 4 Claims

A process for producing fiber forming polyesters, e.g., polyethylene terephthalate without direct contact of the acid and glycol components comprising

(1) as the first step
reacting terephthalic acid or a mixture of dibasic acids containing at least 85% of the same with an oligomer (A) comprising the reaction product of such terephthalic acid or mixed acid component and a glycol, oligomer (A) having a degree of polymerization of one or more but less than 3 and having termini hydroxyl groups, to form an oligomer (B) having a higher degree of polymerization, i.e., 3 to 10 and hydroxyl groups substantially at the termini;



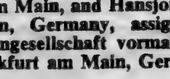
(2) as a second step,
reacting at least a portion of oligomer (B) with the glycol to depolymerize (B) to form oligomer (A') having a degree of polymerization of one or more but less than 3; and
(3) as a third step,
forming the fiber forming polyester by polycondensing a material comprising any remaining portion of oligomer (B), a portion of oligomer (A') or mixtures thereof while recycling the remaining portion of oligomer (A') for use as oligomer (A) in the first step.

3,442,869
PROCESS FOR THE PREPARATION OF MIXED POLYAMIDES IN FINELY GRAINED FORM
Wolfgang Wolfes, Witten-Bommern, and Gustav Renckhoff, Witten (Ruhr), Germany, assignors to Chemische Werke Witten GmbH, Witten (Ruhr), Germany
No Drawing. Filed Jan. 3, 1966, Ser. No. 517,958
Claims priority, application Germany, Jan. 23, 1965, C 34,936
Int. Cl. C08g *20/20, 20/30*
U.S. Cl. 260—78 15 Claims

A process for preparing finely granulated polyoxamides which comprises reacting a mixture of a dialkyl or diphenyl diester of oxalic acid and a diphenyl diester of isophthalic and/or terephthalic acid with an organic diamine in a hydrocarbon solvent at 20–150° C. to give a low molecular weight preliminary condensate, and then recondensing the preliminary condensate at 170–350° C. to the desired molecular weight.

3,442,870
CURABLE MIXTURES COMPRISING A COMPOUND CONTAINING AT LEAST TWO β-METHYLENE-PROPIOLACTONE GROUPS AND A CROSS-LINKING AGENT
Friedrich Lohse, Allschwil, and Hans Batzer, Arlesheim, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a Swiss company
No Drawing. Filed Jan. 4, 1965, Ser. No. 423,387
Claims priority, application Switzerland, Jan. 7, 1964, 76/64
Int. Cl. C08g *17/017, 17/02*
U.S. Cl. 260—78.3 5 Claims

Curable compositions comprising (1) a compound containing at least two β-methylene-propiolactone groupings of the formula



obtained by reacting a monocarboxylic acid halide of the formula

$$R_1—CH_2—COX$$

and a dicarboxylic acid halide of the formula

$$XOC—CH_2R_2—CH_2—COX$$

in the presence of an inert solvent with an amount of a tertiary amine equivalent to the carboxylic acid halide groups, R_1 being hydrogen, monovalent aliphatic hydrocarbon, aromatic hydrocarbon, cycloaliphatic hydrocarbon or araliphatic hydrocarbon radical and R_2 being divalent aliphatic hydrocarbon, aromatic hydrocarbon, and X being chlorine, bromine or iodine, and (2) a cross-linking agent for the polylactone (1).

3,442,871
PROCESS FOR POLYMERIZING A GLYCOLIDE
Edward Emil Schmitt, Norwalk, and Martin Epstein, Stamford, Conn., and Rocco Albert Polistina, Port Chester, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed May 4, 1966, Ser. No. 547,449
Int. Cl. C08g *17/02*
U.S. Cl. 260—78.3 10 Claims

A process for polymerizing a substantially pure glycolide composition in the presence of certain stated mol percentages of certain alcohols and certain percentages by weight of $SnCl_2 \cdot 2H_2O$ under certain temperature and related time conditions.

3,442,872
HIGH MOLECULAR WEIGHT TERPOLYMERS OF MALEIC ANHYDRIDE, ETHYLENE AND DICYCLOPENTADIENE
Helmut Korbanka, Hofheim, Taunus, Günther Tauber, Eddersheim am Main, and Hansjorg Vollmann, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed Jan. 25, 1966, Ser. No. 522,845
Claims priority, application Germany, Feb. 5, 1965, F 45,150
Int. Cl. C08f *15/40*
U.S. Cl. 260—78.5 5 Claims

High molecular weight terpolymers of maleic anhydride, ethylene and dicyclopentadiene, and a method of making the polymers are disclosed. The polymers may be prepared by copolymerizing equimolar quantities of ethylene and maleic anhydride with 0.01 to 2.5% of dicyclopentadiene in the presence of a free radical liberating compound and a solvent at a temperature of 40° to 120° C. and under a pressure of 10 to 100 atmospheres. The polymers are useful, especially in the form of their salts, as thickening agents, dispersing agents and emulsifying auxiliaries.

3,442,873
NOVEL POLYMERS HAVING PENDENT ESTER GROUPS
Joseph A. Vasta, Woodbury, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Apr. 29, 1966, Ser. No. 546,189
Int. Cl. C08f *21/02, 21/00*
U.S. Cl. 260—78.5 14 Claims

A polymer having pendent ester groups formed by (1) Preparing an esterification product by reacting

(a) an anhydride of an ethylenically unsaturated dicarboxylic acid,
(b) a glycidyl ester,
(c) an aromatic or an aliphatic dicarboxylic acid; wherein (a), (b) and (c) are reacted in a molar ratio of 1:3:1,
(2) Copolymerizing the esterification product with other ethylenically unsaturated monomers to form a polymer.

3,442,874
PROCESS FOR THE PRODUCTION OF POLYTHIOFORMALDEHYDE

Helmut Birkner and Franz Sturzenhofecker, Marl, Germany, assignors to Chemische Werke Huls Aktiengesellschaft, Marl, Kreis Recklinghausen, Germany, a corporation of Germany

No Drawing. Filed May 18, 1964, Ser. No. 368,386
Claims priority, application Germany, Jan. 28, 1964, C 31,988
Int. Cl. C08g *1/04, 23/00*
U.S. Cl. 260—79 **2 Claims**

High molecular weight polythioformaldehyde is made by polymerization of trithiane dispersed in a non-solvent inert liquid at a temperature in the range from 200–260° C. in the presence of cationically acting catalyst.

3,442,875
MONOEPOXIDE POLYMERS

Irving Kuntz, Westfield, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Jan. 19, 1966, Ser. No. 521,515
Int. Cl. C08g *23/06, 23/14*
U.S. Cl. 260—79.5 **6 Claims**

Sulfur-curable copolymers of tetrahydrofuran with an alicyclic olefin monoepoxide, e.g. cyclododecadiene monoepoxide, are prepared by copolymerizing the monomers in the presence of a di- or tri-arylmethyl carbonium ion salt catalyst, e.g. tri-phenylmethyl hexachloroantimonate.

3,442,876
NOVEL RUBBERY POLYOXYALKYLENE COPOLYMERS

Robert J. Herold, Akron, Ohio, assignor to The General Tire & Rubber Company, a corporation of Ohio

No Drawing. Filed Feb. 16, 1966, Ser. No. 527,767
Int. Cl. C08g *23/06, 23/20*
U.S. Cl. 260—80.3 **6 Claims**

Novel solid polyoxyalkylene copolymers having superior resistance to the degradative effects of ozone are obtained by the copolymerization of at least one polymerizable saturated epoxide monomer and at least one polymerizable epoxide monomer containing non-terminal olefinic unsaturation. There, also, may be copolymerized with these monomers terminally unsaturated polymerizable epoxide monomers.

3,442,877
TWO-STAGE HYDROGENATION PROCESS

Karsten Herbert Moritz, Lloyd Albert Pine, and Henry George Ellert, Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed July 20, 1965, Ser. No. 473,487
Int. Cl. C08f *15/42, 27/25*
U.S. Cl. 260—82 **3 Claims**

Petroleum resins are hydrogenated in two stages, the first stage being under relatively mild conditions to hydrogenate color bodies, and the second stage under more stringent conditions. With this process, color is improved while softening point remains satisfactory.

3,442,878
NEUTRALIZATION OF IMPURITIES IN ISOPRENE POLYMERIZATION

Morris Gippin, Fairlawn Village, Ohio, assignor to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Feb. 15, 1967, Ser. No. 616,184
Int. Cl. C08d *1/14*
U.S. Cl. 260—82.1 **6 Claims**

Isoprene and/or the hydrocarbon solvent destined for polymerization process using a trihydrocarbon aluminum/titanium tetrachloride catalyst is treated with a dihydrocarbon aluminum chloride to destroy impurities. The yield of polymer, reproducibility of results and rate of reaction are greatly increased, and the control of the process is non-critical, since the process will tolerate substantial excess of dihydrocarbon aluminum halides.

3,442,879
SPRAY PROCESS FOR HYDROLYZING A POLYMER LATEX

Kenneth Worden Saunders, Darien, and Michael Niall O'Connor, South Norwalk, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Sept. 17, 1964, Ser. No. 397,304
Int. Cl. C08g *27/16, 27/14*
U.S. Cl. 260—86.1 **7 Claims**

A process for hydrolyzing a polymer latex, said process comprising contacting (a) a first reactant comprising said latex, with (b) a second reactant comprising water and alkali and alcohol, said contacting including: (1) forming said latex into a fine spray of sufficiently small droplets to impart substantially complete and homogeneous hydrolysis when said reactants react, and (2) adding said spray to the second reactant, said second reactant being at elevated temperature and in an agitated state whereby said reactants react.

3,442,880
SUSPENSION POLYMERIZATION PROCESS WHEREIN A SOLUBLE HYDROCARBON PHOSPHATE IS USED WITH A DIFFICULTLY SOLUBLE PHOSPHATE

Roy A. White, Somers, Conn., assignor, by mesne assignments, to Mobil Oil Corporation, New York, N.Y., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 276,088, Apr. 26, 1963. This application Feb. 11, 1966, Ser. No. 526,691
Int. Cl. C08f *1/11*
U.S. Cl. 260—93.5 **12 Claims**

A method is disclosed for producing bead polymers by suspension polymerization of monoethylenically unsaturated monomers in an aqueous medium containing a phosphate difficultly soluble in water. The polymerization is carried out in presence of a water-soluble hydrocarbon phosphate or salts thereof, in which the hydrocarbon portion is alkyl or aryl containing up to ten carbon atoms, in amount up to about 0.3% by weight of the total suspension to improve suspension stability and particle size control of the product beads.

3,442,881
PROCESS FOR THE PREPARATION OF POLYMERS IN BEAD FORM

Alex K. Jahn, Williamsburg, Va., and Alfred R. Nelson, Bay City, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed May 2, 1966, Ser. No. 546,585
Int. Cl. C08f *1/11, 7/04*
U.S. Cl. 260—93.5 **7 Claims**

Styrene-type bead polymerization is shown wherein the suspending agent is zinc oxide. A relatively narrow particle size distribution of the beads is obtained by employing from about 0.1 to about 0.4 weight percent of disodium hydrogen phosphate based on the total weight of the zinc oxide.

3,442,882
PROCESS OF PREPARING COPOLYMERS FROM HALOMETHYLATED AROMATIC HYDROCARBONS AND CONJUGATED DIOLEFINS WITH FRIEDEL-CRAFTS CATALYST

Roger L. Welchman and William L. Fierce, Crystal Lake, Ill., assignors, by mesne assignments, to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Continuation of application Ser. No. 327,058, Nov. 29, 1963. This application May 9, 1968, Ser. No. 728,086
Int. Cl. C08f *3/16, 15/06*
U.S. Cl. 260—94.2 **13 Claims**

1. A process for preparing a copolymer which comprises reacting a halomethylated aromatic hydrocarbon and a conjugated diolefin hydrocarbon in the presence of a Friedel Crafts catalyst at a temperature of about 0° to 250° C., and a pressure of about 0 to 200 p.s.i.g., employing a molal excess of said halomethylated aromatic hydrocarbon and higher pressures within said range when the temperature is low, and temperatures above about 50° C. when the pressure is atmospheric.

3,442,883
PALLADIUM CATALYZED POLYMERIZATION OF ALLENE

George D. Shier, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Mar. 22, 1967, Ser. No. 625,007
Int. Cl. C08f *3/02;* **B01j** *11/84*
U.S. Cl. 260—94.3 **13 Claims**

Allene polymerizes in acetic acid containing a palladium II salt and certain trivalent phosphorous or arsenic compounds as a head-to-head polymer characterized by adjacent pendant methylene groups. This polyallene is a reactive dienophile, crosslinking agent and synthetic intermediate.

3,442,884
POLYMER RECOVERY PROCESS

Paul E. Hoch, Youngstown, and George B. Stratton, Lewiston, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

Continuation-in-part of application Ser. No. 293,157, July 5, 1963. This application Sept. 24, 1965, Ser. No. 489,893
Int. Cl. C08f *1/96, 27/02*
U.S. Cl. 260—94.7 **14 Claims**

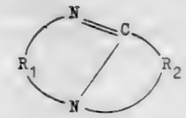
Polymeric materials which generally contain less than 1 percent unreacted polyhalogenated cyclopentadiene are recovered from a solution of polyhalogenated cyclopentadiene-polybutadiene in unreacted polyhalogenated cyclopentadiene by a process which comprises: heating an emulsion comprised of (a) the polymer of a butadiene polymer and a polyhalogenated cyclopentadiene, (b) unreacted polyhalogenated cyclopentadiene, (c) an emulsifying medium, and (d) an emulsifying agent, to an elevated temperature to evaporate a portion of the unreacted polyhalogenated cyclopentadiene and to provide a polymer containing the remaining unreacted polyhalogenated cyclopentadiene; contacting the polymer with an alcoholic medium to remove unreacted polyhalogenated cyclopentadiene therefrom, and thereafter separating the alcohol and the unreacted polyhalogenated cyclopentadiene from the polymer. In another embodiment of the invention, the emulsion is heated to form a slurry which is separated into a liquid phase and a solid polymer phase, and the resulting solid polymer phase is contacted with an alcohol to remove the remaining unreacted polyhalogenated cyclopentadiene from the solid polymer. Another embodiment of the invention relates to subjecting the aforesaid emulsion to hot gases to evaporate a portion of the unreacted polyhalogenated cyclopentadiene and form solid polymer particles, which are thereafter contacted with an alcoholic medium to remove the residual unreacted polyhalogenated cyclopentadiene therefrom.

3,442,885
BICYCLIC AMIDINE-COPPER SALT CATALYZED POLYARYLENE ETHER FORMATION

Horst Wieden, Dormagen, Ulrich Bahr, Opladen-Lutzenkirchen, and Gunther Nischk, Dormagen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Mar. 17, 1967, Ser. No. 623,813
Claims priority, application Germany, Mar. 24, 1966, F 48,751
Int. Cl. C08g *23/18*
U.S. Cl. 260—47 **8 Claims**

Process for the production of polyarylene ethers in inert solvents from 2,6-disubstituted phenols by oxidative coupling with oxygen, characterized in that the oxidative coupling is carried out in the presence of a catalyst system of copper salts and bicyclic amidines of the general formula



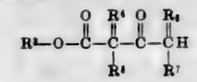
wherein R_1 denotes an alkylene radical having 2–4 carbon atoms and R_2 is an alkylene radical which may contain a further tertiary nitrogen atom.

3,442,886
BENZOTHIAZOLYL-AZO-ANILINE DYESTUFFS CONTAINING AN N-ALKYLENE OXOALKANOATE GROUP

Joseph B. Dickey and Max A. Weaver, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed May 2, 1966, Ser. No. 546,499
Int. Cl. C09b *29/36*
U.S. Cl. 260—158 **8 Claims**

Benzothiazolyl-azo-aniline compounds, in which the nitrogen atom of the aniline coupling component is substituted with the group



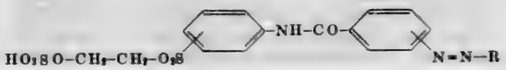
wherein R^3 is alkyl and R^4, R^5, R^6 and R^7 each is alkyl or phenyl, are useful as dyes for hydrophobic textile materials.

3,442,887
NAPHTHOL-AZO-PHENYL MONOAZO DYESTUFFS

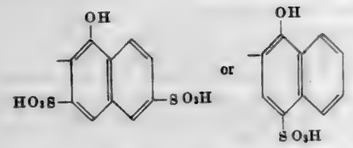
Karl Hermann, Remy, Warwick, R.I., assignor to American Hoechst Corporation, New York, N.Y.

No Drawing. Filed Aug. 18, 1966, Ser. No. 573,217
Int. Cl. C09b *29/16, 29/30;* **C07c** *107/30*
U.S. Cl. 260—201 **9 Claims**

1. Monoazo dyestuff which corresponds to the formula



wherein R stands for



and the azo- and the $—SO_2—CH_2—CH_2—OSO_3H$ groups are meta or para to the —NH—CO— group.

3,442,888

SUCROSE - GLYCEROL - ALKYLENEOXIDE POLYOL COMPOSITIONS AND PROCESS FOR PREPARING SAME

Edward R. Degginger and Robert E. Booth, Syracuse, N.Y., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Original application May 17, 1962, Ser. No. 195,646. Divided and this application Dec. 14, 1965, Ser. No. 513,824

Int. Cl. C08g *23/10, 22/14*

U.S. Cl. 260—209 **3 Claims**

This invention relates to sucrose-glycerol polyols prepared by admixing sucrose with glycerol in the proportion of 210 to 550 parts by weight sucrose per 100 parts of glycerol and passing propylene oxide through said mixture until about 570 to 1900 parts by weight propylene oxide per 100 parts by weight glycerol are reacted to produce a polyether containing an average of 1.2 to 2 molecules propylene oxide reacted with each hydroxyl of the sucrose and glycerol. The sucrose-glycerol polyols are useful in the production of rigid urethane foam. This is a divisional application of our co-pending application, Ser. No. 195,646, filed May 17, 1962, now abandoned.

3,442,889

HALOBENZYL CARBAMATES

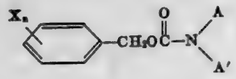
John J. D'Amico, Dunbar, W. Va., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 55,111, Sept. 12, 1960. This application June 14, 1965, Ser. No. 463,946

Int. Cl. C07c *125/06;* **C07d** *29/24, 41/02*

U.S. Cl. 260—239 **15 Claims**

Halobenzzyl carbamates, useful as herbicides, of the formula



where X is halogen, *n* is 2 or 3, and A and A′ are either independent organic substituents or taken together with the nitrogen form a heterocyclic ring.

3,442,890

SUBSTITUTED 3-BENZAZOCIN-16-ONES

Aubrey A. Larsen, Evansville, Ind., and Homer C. Scarborough, deceased, late of Evansville, Ind., by Phyllis Jean Scarborough, personal representative, Evansville, Ind., assignors to Mead Johnson & Company, Evansville, Ind., a corporation of Indiana

No Drawing. Filed June 15, 1965, Ser. No. 464,239

Int. Cl. C07d *41/00;* **C07c** *143/74;* **A61k** *27/00*

U.S. Cl. 260—239 **10 Claims**

Substituted and unsubstituted 3-sulfo-1,2,3,4,5,6-hexahydro-3-benzazocin-6-ones, have central nervous system depressant, anti-inflammatory, and uricosuric properties. Compounds are prepared by cyclization of 3-(N-R sulfonylphenalkylaminopropionyl) chlorides or bromides, wherein R is alkyl, aryl, aralkyl or dialkylamino. The cyclization takes place in the presence of Friedel-Crafts catalysts.

3,442,891

STEROIDAL 4,6-DIEN-3-ONES HAVING C_6 SUBSTITUENTS AND PROCESS FOR PREPARING SAME

Derek Burn, Robert Victor Coombs, and Vladimir Petrow, London, England, assignors to The British Drug House Limited

No Drawing. Filed Feb. 8, 1966, Ser. No. 525,845

Claims priority, application Great Britain, Feb. 25, 1965, 8,200/65

Int. Cl. C07c *173/00, 169/22, 169/34*

U.S. Cl. 260—239.55 **15 Claims**

New steroidal-4,6-dien-3-ones having at C_6 the group CH_2XR wherein X is an atom of sulfur or oxygen and R is an alkyl or aryl group containing up to 20 carbon atoms. The compounds are prepared by reacting a corresponding 6-halomethyl steroid with a metallic salt of the formula M.X.R where M is the metal and X and R have the meaning given above.

3,442,892

IMIDAZOLIDINONE DERIVATIVES

Fuyuki Kusuda, Kyoto-fu, Masao Murayama, Yoshiharu Matsuo, and Hideo Okumura. Kyoto, and Nobukiyo Tatewaki, Kyoto-fu, Japan, assignors to Nippon Shinyaku Co. Ltd., Kyoto, Japan, a corporation of Japan

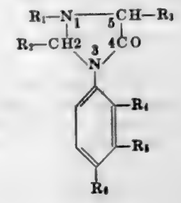
No Drawing. Filed Mar. 7, 1966, Ser. No. 532,124

Claims priority, application Japan, June 11, 1965, 40/34,815

Int. Cl. C07d *49/34;* **C09b** *23/00*

U.S. Cl. 260—240 **4 Claims**

Compounds of formula



in which R_1 is hydrogen or lower alkyl, R_2 is a straight chain or branched alkyl containing between 1 and 10 carbon atoms, cinnamyl or phenyl, R_3 is hydrogen or a srtaight chain or branched lower alkyl or phenyl, and R_4, R_5 and R_6 are each hydrogen, a straight chain or branched lower alkyl, lower alkoxy, hydroxy or halogen, have analgesic, anti-inflammatory and antipyretic activity.

3,442,893

STEROID ANALOGS

Don Murl Lynch, Waukegan, Ill., assignor to Abbott Laboratories, Chicago, Ill., a corporation of Illinois

No Drawing. Filed May 23, 1966, Ser. No. 551,895

Int. Cl. C07d *31/34, 31/28, 29/16*

U.S. Cl. 260—240 **9 Claims**

5,6-disubstituted and 5-monosubstituted 4′-pyridylalkyl-1-indanes are described; they are useful growth regulators for the reproductive glands of warm-blooded animals.

3,442,894

2,5-BIS-(AMINOALKOXYPHENYL) THIAZOLO [5,4-d]THIAZOLES

Paul Schmidt, Therwil, Switzerland, assignor to Ciba Corporation, New York, N.Y., a corporation of Delaware

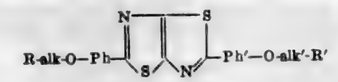
No Drawing. Filed Oct. 15, 1965, Ser. No. 496,662

Claims priority, application Switzerland, Nov. 26, 1964, 15,246/64

Int. Cl. C07d *91/32, 91/42;* **A61k** *27/00*

U.S. Cl. 260—246 **9 Claims**

2.5-bis - (aminoalkoxyphenyl)-thiazolo[5,4-d]thiazoles of the formula



in which R and R′ each represents an amino group, alk and alk′ each represents an alkylene radical containing at least 2 carbon atoms and Ph and Ph′ each stands for a phenylene group, and their salts. The compounds are useful because of their tuberculostatic and antiparastic effects.

3,442,895

2-TERTIARYAMINO ALKYL-AMINO ANTHRAQUINONES, THEIR ACID ADDITION AND QUATERNARY AMMONIUM SALTS THEREOF

Andree Bugaut, Boulogne-sur-Seine, Gregoire Kalopissis, Paris, and Jacques Bertrand, Tremblay-les-Gonesses, France, assignors to Societe Anonyme dite: L'Oreal, Paris, France, a corporation of France

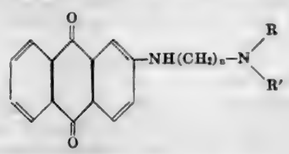
No Drawing. Original application May 19, 1967, Ser. No. 639,915. Divided and this application Oct. 23, 1967, Ser. No. 677,068.

Claims priority, application France, Oct. 29, 1962, 913,810; Jan. 8, 1963, 920,795; Apr. 2, 1963, 930,212; June 20, 1963, 938,822

Int. Cl. C09b *1/28, 1/16, 5/42*

U.S. Cl. 260—247.1 **8 Claims**

An anthraquinone dyestuff having the formula:



in which *n* is an interger from 2 to 6, and



is selected from the group consisting of a lower dialkyl amine, morpholine and piperidino, and its acid addition and quaternary ammonium salts.

3,442,896

1,3-BIS(DIALKYLAMINOMETHOXY)-2,2,4,4-TETRAALKYLCYCLOBUTANES

Winston J. Jackson, Jr., and John R. Caldwell, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed May 2, 1966, Ser. No. 546,596

Int. Cl. C07c *93/12;* **C07d** *87/40, 93/12*

U.S. Cl. 260—246 **9 Claims**

1,3 - bis - (tertiaryaminomethoxy) - 2,2,4,4 - tetraalkyl cyclobutanes are manufactured by condensing a 2,2,4,4-tetraalkyl-cyclobutanediol with formaldehyde and thereafter reacting a secondary amine with the condensation product. The 1,4-bis-(tertiaryaminomethoxy) - 2,2,4,4-tetraalkylcyclobutanes are useful as polymerization catalysts.

3,442,897

PROCESS FOR THE MANUFACTURE OF PHTHALAZINES AND PHTHALAZONES FROM α,α′ CHLORINATED XYLENE COMPOUNDS

Walter Fuhrer, Birsfelden, Switzerland, assignor to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 21, 1965, Ser. No. 473,842

Claims priority, application Switzerland, May 5, 1965, 6,279/65

Int. Cl. C07d *51/06*

U.S. Cl. 260—250 **15 Claims**

Process which comprises reacting an α,α,α′,α′ - tetrachloro - ortho - xylene, an α,α,α,α′,α′ - pentachloro - ortho-xylene or a mixture of these compounds with hydrazine sulfate in concentrated sulfuric acid and, if desired, isolating the resulting phthalazines and/or phthalazones. The products are useful as intermediates for the manufacture of medicinals, e.g. they may be used for making 2-aralkylphthalazinium salts having antiparasitic or anthelmintic activity (see Belgian Patent 646,343) or for making 1-hydrazinophthalazines useful for lowering blood pressure (see U.S. Patent No. 2,484,029).

3,442,898

HYDROXYARYL-PYRIMIDINES, PROCESS FOR THEIR PREPARATION AND THEIR USE

Christian Luethi, Munchenstein, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a Swiss company

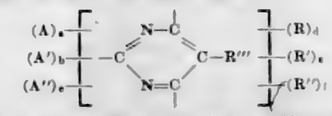
No Drawing. Filed May 4, 1964, Ser. No. 364,818

Claims priority, application Switzerland, May 4, 1963, 5,632/63

Int. Cl. C07d *51/36*

U.S. Cl. 260—251 **12 Claims**

New hydroxyaryl-pyrimidines are provided which may be represented by the general formula



in which A, A′ and A″ are identical or different and each represents a benzene or naphthalene radical which is linked directly through a cyclic carbon atom to the pyrimidine ring and which contains a hydroxyl group in vicinal position to the bond to the pyrimidine ring; R, R′ and R″ and R‴ are identical or different and each represents a hydrogen or halogen atom, an alkyl group or a benzene or naphthalene radical bound directly through a cyclic carbon atom to the pyrimidine ring; $a=1$, 2 or 3, and b, c, d, e and f each $=0$, 1 or 2, the sum $(a+b+c+d+e+f)$ being 3.

The compounds of this invention are especially useful as stabilizers for organic materials, and particularly for the protection of the organic materials from the effects of ultraviolet radiation.

3,442,899

TREATMENT OF ARTERIOSCLEROTIC AND ARTERIOSPASTIC DISEASES WITH 1-(β-HYDROXYETHYL) 2-METHYL - 5 - NITROIMIDAZOLE

James B. Mercer, Merriam, Kans. (13109 W. 95th St., Lenexa, Kans. 66215)

No Drawing. Filed May 5, 1967, Ser. No. 636,275

Int. Cl. A61k *27/00*

U.S. Cl. 424—273 **4 Claims**

The administration internally to mammals particularly humans of a pharmaceutically effective dosage of a pharmaceutical compound having as the essentially active ingredient a potent arterial vasodilator which is readily absorbable from intestinal tracts, such as Metronidazole which is (1 - (β - hydroxyethyl) - 2 - methyl - 5 - nitroimidazole, or (1 - (2 - hydroxyethyl) - 2 - methyl - 5-nitroimidazole), the dosage being in the range of 75 to 250

mgs. of metronidazole with amounts administered being 125 mgs. to 1000 mgs. per day or twenty-four hour period. Many persons, particularly as they age, suffer from arteriosclerotic and arteriospastic diseases which may become evident by various conditions resulting from improper or lack of suitable blood circulation, as for example, extremities such as hands and feet may become cold, the person may have a distinct feeling of weakness, anxiety, or the impaired circulation may result in chest pains, shortness of breath, also, inability to sleep, slowing mental activity, reduced visual acuity, and in many instances, permanent disabilities may result. Heretofore there has been a lack of suitable prophylactic and therapeutic treatment of many types of arteriosclerotic and arteriospastic diseases in the human arterial system.

3,442,900

ENDOETHENO THEBAINES AND ORIPAVINES

Kenneth Walter Bentley, Willerby, Hull, England, assignor to Reckitt & Sons Limited, Hull, England

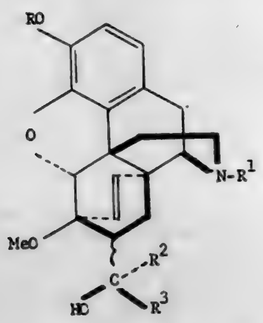
No Drawing. Continuation-in-part of application Ser. No. 478,738, Aug. 10, 1965, which is a continuation-in-part of application Ser. No. 262,249, Mar. 1, 1963. This application May 3, 1968, Ser. No. 726,592

Claims priority, application Great Britain, Mar. 2, 1962, 8,219/62; Nov. 12, 1962, 46,628/62

Int. Cl. C07d *33/00;* **A61k** *27/00*

U.S. Cl. 260—285 **12 Claims**

Thebaine and oripavine derivatives of the formula:



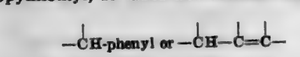
wherein:

R is hydrogen, methyl or acyl of $C_nH_{2n+1}CO$— wherein *n* is an integer from 1 to 3, such as acetyl propionyl or butyryl;

R^1 is hydrogen, alkyl, or alkenyl of 2 to 8 carbon atoms, propargyl, cycloalkylmethyl of 4 to 6 carbon atoms such as cyclopropylmethyl or methylcyclopropylmethyl;

R^2 is hydrogen, alkyl of 1 to 3 carbon atoms, phenyl or tolyl; and

R^3 is cycloalkyl of 5 to 7 carbon atoms, alkyl or alkenyl of up to 8 carbon atoms or alkyl or alkenyl of up to 8 carbon atoms substituted on any one of the carbon atoms numbered 1 to 4 (the carbon atom numbered 1 being adjacent to the carbon atom bearing the alcoholic hydroxy group) by cycloalkyl of 5 to 7 carbon atoms, phenyl, alkoxy of 1 to 3 carbon atoms, phenoxy or tetrahydrofuryl, provided that when R is hydrogen or when R^1 is hydrogen, cyclopropylmethyl or methylcyclopropylmethyl, R^3 does not contain the system



attached directly to the carbon atom bearing the alcoholic hydroxy group

and non-toxic pharmaceutically acceptable salts are useful as analgesics.

3,442,901

DIMETHYL-OXO-SURFURYLENE DERIVATIVES

Horst Koenig and Horst Metzger, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed July 19, 1965, Ser. No. 473,154

Int. Cl. C07c *161/00, 147/14;* **C07d** *31/48*

U.S. Cl. 260—294.8 **9 Claims**

Production of sulfur-containing compounds by reacting oxosulfonium ylides with acylating agents and the new sulfur-containing compounds themselves. The new products are polymerization modifiers and intermediates for production of pharmaceuticals, dyes and pesticides.

3,442,902

BIS-TERTIARY-AMINE SALTS OF IMIDODISULFONIC ACID

Hachiro Yamaguchi, Urawa-shi, and Keiji Nakano, Kawagoe-shi, Japan, assignors to Nitto Chemical Industry Co., Ltd., Tokyo, Japan, and Zaidanhojin Nitto Rikagaku Kenkyujo, Saitama-ken, Japan

Original application Mar. 9, 1964, Ser. No. 350,515, now Patent No. 3,329,720, dated July 4, 1967. Divided and this application Sept. 15, 1966, Ser. No. 618,550

Int. Cl. C07c *143/86;* **C08g** *51/74*

U.S. Cl. 260—294.8 **3 Claims**

Novel compounds useful, for example, as catalysts are disclosed. The compounds are bis-tertiary amine salts of imidodisulfonic acid where the amine is, for example, pyridine dimethylaniline, triethylamine, or dimethylbenzylamine.

3,442,903

CERTAIN AMINOPROPYLIDENEBENZO[5,6] CYCLOHEPTA[1,2-d]THIAZOLES

Eugene E. Galantay, Morristown, N.J., assignor to Sandoz Inc., Hanover, N.J.

No Drawing. Continuation-in-part of application Ser. No. 610,780, Jan. 23, 1967. This application Aug. 30, 1967, Ser. No. 664,313

Int. Cl. C07d *91/42*

U.S. Cl. 260—302 **10 Claims**

The compounds are of the class of 4-(3-mono- and dialkylaminopropylidene)-2-lower alkyl-9,10-dihydro - 4H-benzo[5,6]cyclohepta[1,2-d]thiazoles which are useful as tranquilizers. The compounds are prepared by thiating a 2-lower alkyl-9,10-dihydro-4H-benzo[5,6]cyclohepta[1,2-d]oxazol-4-one, treating the resulting benzocycloheptathiazol-4-one with a metallo dialkylaminopropyl halide Grignard reagent and dehydrating the carbinol resulting from the hydrolysis of the Grignard adduct to obtain the corresponding 4 - (3 - dialkylaminopropylidene)-2-lower alkyl - 9,10 - dihydro - 4H-benzo[5,6]cyclohepta[1,2-d] thiazole, which may then be N-dealkylated to the corresponding 3 - monoalkylaminopropylidene-containing analog.

3,442,904

CERTAIN 4-AMINO-3-OXAZOLINES HAVING HALOGENATED HYDROCARBON SUBSTITUENTS IN THE 2- AND 5-POSITIONS

William J. Middleton, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 555,974, June 8, 1966. This application Feb. 27, 1967, Ser. No. 618,991

Int. Cl. C07d *85/36*

U.S. Cl. 260—307 **20 Claims**

Certain 4-amino-3-oxazolines having halogenated hydrocarbon substituents in the 2- and 5-positions, e.g., 4-amino-2,2,5,5-tetrakis(trifluoromethyl)-3-oxazoline and 4-amino-2-difluoromethyl-6,6,7,7,8,8-hexafluoro - 2 - trifluoromethyl-3-aza-1-oxaspiro[4,3]oct-3-ene and their tautomers, useful as plasticizers for polymeric materials, and their preparation, e.g., from reaction of a polyhaloisopropylidenimine, e.g., pentafluoroisopropylidenimine, and a polyhaloketone cyanhydrin, e.g., hexafluorocyclobutanone cyanhydrin, in a polar solvent and in the presence of a strongly basic amine.

3,442,905

N-METHYLOL-N'-SUBSTITUTED-4,5-DIHYDROXY-2-IMIDAZOLIDINONES

William Frank Herbes, Bridgewater Township, Somerset County, and John Peter Dundon, Branchburg Township, Somerset County, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Sept. 8, 1966, Ser. No. 577,845

Int. Cl. C07d *49/30;* **D06m** *13/34*

U.S. Cl. 260—309.7 **2 Claims**

N-substituted imidazolidinones, useful as permanent press textile treating agents, which are resistant to chlorine retention and discoloration.

3,442,906

2-METHYLENE-4-THIOXO-1,3-OXATHIAN-6-ONES AND THEIR PREPARATION

James C. Martin and Paul G. Gott, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Dec. 8, 1967, Ser. No. 688,960

Int. Cl. C07d *89/12*

U.S. Cl. 260—327 **8 Claims**

Preparation of novel substituted 2-methylene-4-thioxo-1,3-oxathian-6-ones by reacting a dialkylketene with carbon disulfide, with or without a solvent, at controlled reaction temperatures ranging from —20 to 100° C. and thereafter separating the substituted 2-methylene-4-thioxo-1,3-oxathian-6-one from the reaction mixture by distillation in vacuo or other means. The dialkylketene reactant may contain the same or different alkyl groups containing from 1 to 12 carbon atoms. The novel compounds of the invention are useful as intermediates for the preparation of thioamides by reaction with various amines and these thioamides are useful as catalysts in the synthesis of acrolein resins. Such thioamides are also known to be useful as vulcanization accelerators in rubber processing, as fungicides, corrosion inhibitors and lubricating oil additives.

3,442,907

PROCESS FOR THE PREPARATION OF IMINO-DITHIOLANES

Alain Donche and Claude Thibault, Pau, France, assignors to Societe Nationale des Petroles, d'Aquitaine, Courbevoie, France

No Drawing. Filed Dec. 18, 1967, Ser. No. 691,204

Claims priority, application France, Dec. 20, 1966, 88,101

Int. Cl. C07d *71/00*

U.S. Cl. 260—327 **7 Claims**

This invention has to do with a process for the preparation of imino-dithiolanes and, more particularly, the preparation of imino-dithiolanes, the nitrogen atom of which bears a hydrocarbyl radical, by heating hydrocarbylisothiocyanates with alkane-α-dithiols. The products are useful as sulfurizing agents and as nematocides.

3,442,908

6-DIALKYLAMINOFLUORANS

Michio Orita and Masakichi Yahagi, Tokyo, and Chiyouzi Enomoto, Urawa-shi, Japan, assignors to Nisso Kako Co., Ltd., a corporation of Japan

No Drawing. Filed Dec. 2, 1966, Ser. No. 598,590

Claims priority, application Japan, Dec. 9, 1965, 40/75,326; June 14, 1966, 41/37,984; Oct. 15, 1966, 41/67,428; Nov. 7, 1966, 40/72,839

Int. Cl. C07d *7/42;* **D21h** *1/10*

U.S. Cl. 260—335 **3 Claims**

Substituted 6-dialkylaminofluorans prepared by heating 4 - dialkylamino - 2 - hydroxy - 2' - carboxybenzophenone and an appropriate phenol in the presence of a dehydrating agent. They are useful as an essential component in color-developable coating compositions.

3,442,909

α-METHYL-β-(3,4-DISUBSTITUTEDPHENYL) PROPIONITRILES

Meyer Sletzinger, North Plainfield, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Oct. 8, 1964, Ser. No. 402,632

Int. Cl. C07d *13/10;* **C07c** *121/50;* **A61k** *27/00*

U.S. Cl. 260—340.5 **5 Claims**

A group of compounds are described which generically are α - halo - α - methyl - β - (3,4 - di-o-substitutedphenyl) propionitriles. These compounds are useful for the preparation of α-methyl-β-(3,4-dihydroxyphenyl)alanine and its derivatives which are known antihypertensive compounds.

3,442,910

PREPARATION OF HYDROCOUMARIN, COUMARIN AND ALKYL SUBSTITUTED DERIVATIVES

John G. Thweatt, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed June 22, 1967, Ser. No. 647,912

Int. Cl. C07d *7/28;* **B01j** *11/01;* **A23d** *5/04*

U.S. Cl. 260—343.2 **5 Claims**

Hydrocoumarin, coumarin or alkyl substituted derivatives of these compounds, useful as flavorings and ordorants and hydrocoumarin, useful as an antioxidant for animal fats and oils, are prepared by the simultaneous dehydrogenation-cyclization of lower alkyl esters of 2-oxocyclohexanepropionic acid with or without substituents on the ring or side chain in the presence of a palladium, platinum, rhodium nickel or ruthenium catalyst.

3,442,911

GLYCYRRHETYL GLUCOSIDURONATES

Lily Baxendale, London, England, assignor to Biorex Laboratories Limited, London, England

No Drawing. Filed May 31, 1967, Ser. No. 642,335

Claims priority, application Great Britain, May 31, 1966, 24,154/66

Int. Cl. C07d *7/18;* **C08b** *19/00*

U.S. Cl. 260—345.8 **7 Claims**

There are described new mono- and di-glucosiduronate derivatives of glycyrrhetinic acid in which the hydroxy groups in the glucosiduronate radical can also be acylated. The new compounds are pharmaceuticals possessing anti-inflammatory properties.

3,442,912
SYNTHESIS OF AROMATIC EPOXIDES FROM TRIALKYLSULFONIUM SALTS

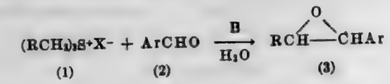
Melvin J. Hatch, Socorro, N. Mex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 489,733, Sept. 23, 1965. This application Dec. 19, 1967, Ser. No. 691,713

Int. Cl. C07d *1/02*

U.S. Cl. 260—348 9 Claims

Reaction of a trialkylsulfonium salt (1) with an aromatic aldehyde (2) in the presence of a strong aqueous base provides a new synthesis of aromatic epoxides (3), e.g.:



the aromatic epoxides including styrene oxide are useful as stabilizers, and in the synthesis of plasticizers, antioxidants and the like.

3,442,913
2-(TRIFLUOROMETHYL)-3-FUORIC ACID ESTERS AND OTHER 2 - FLUOROMETHYL FURAN DERIVATIVES

Kenneth K. Wyckoff, Ronald E. Bambury, and David M. Tennent, Ashland, Ohio, assignors to Richardson-Merrell Inc., New York, N.Y., a corporation of Delaware

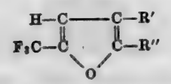
No Drawing. Continuation-in-part of application Ser. No. 482,907, Aug. 26, 1965. This application Oct. 6, 1965, Ser. No. 493,534

Int. Cl. C07d *5/26, 5/16*

U.S. Cl. 260—346.1 23 Claims

14. 5-methyl-2-trifluoromethyl-3-furoic acid.

15. A compound of the formula



wherein each of R′ and R″ is a member selected from the group consisting of hydrogen, lower alkyl, cycloalkyl having from 3 to 6 carbon atoms, phenyl, naphthyl, phenylalkyl having 7 to 14 carbon atoms and naphthylalkyl having from 11 to 14 carbon atoms.

3,442,914
ALPHA-ANTHRAQUINONYLAMINOBENZOYL-PROPIONIC ACID AND ESTERS

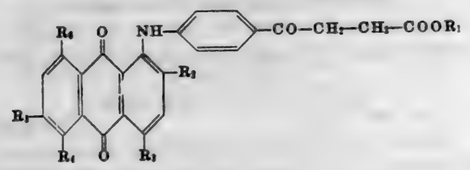
Willy Braun, Heidelberg, and Gerhard Bachmann, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Jan. 28, 1966, Ser. No. 523,536
Claims priority, application Germany, Feb. 4, 1965, B 80,366

Int. Cl. C09b *1/02, 1/50, 1/00*

U.S. Cl. 260—376 6 Claims

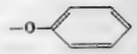
1. Anthraquinone dyestuffs of the general formula



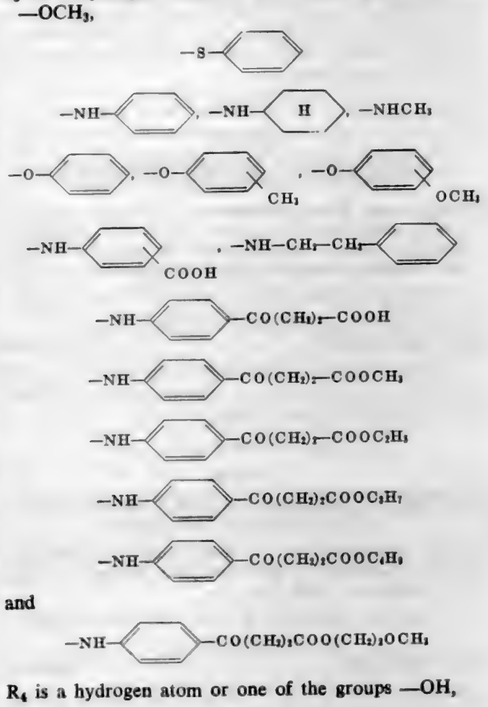
in which

R_1 is a hydrogen atom or one of the groups $—CH_3$, $—C_2H_5$, $—C_3H_7$, $—C_4H_9$ and $—(CH_2)_2OCH_3$,

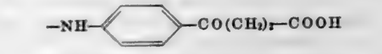
R_2 is a hydrogen atom or one of the groups $—OCH_3$ and



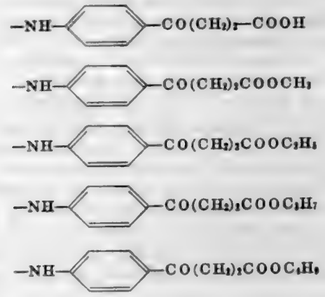
R_3 is a hydrogen atom or one of the groups —OH, $—OCH_3$,



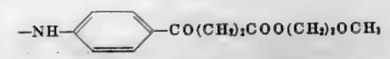
and



R_4 is a hydrogen atom or one of the groups —OH,



and



R_5 is a hydrogen atom or the $—COOC_2H_5$ group and R_6 is a hydrogen atom or the hydroxyl group.

3,442,915
SYNTHESIS OF 2,6-DIALKYLQUINONES BY ACID DECOMPOSITION OF 2,6-DIALKYL-4-t-ALKYL-4-ALKYLPEROXYCYCLOHEXADIEN-2,5-ONE-1

William H. Starnes, Baytown, Tex., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Nov. 24, 1965, Ser. No. 509,634

Int. Cl. C07c *45/00, 49/62*

U.S. Cl. 260—396 3 Claims

A 2,6-dialkyl-4-t-alkyl-4-alkylperoxycyclohexadien-2,5-one-1 is decomposed by using either a Lewis or Bronsted acid to form 2,6-dialkylquinones.

3,442,916
ISOLATION OF EBURICOIC ACID

Friedrich Dursch, Freehold, N.J., assignor to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed June 27, 1967, Ser. No. 649,141

Int. Cl. B01d *11/00;* C12d *13/00;* A61k *27/00*

U.S. Cl. 260—397.1 8 Claims

This invention relates to a novel procedure for isolation of eburicoic acid from natural, as well as synthetic, sources. It has been discovered that by treating eburicoic acid containing materials with a base and a lower aliphatic alcohol, eburicoic acid may be recovered in substantially quantitative yield.

3,442,917
2β,3β,14α - 22β,25 - PENTA HYDROXY - 5β - CHOLEST-7-EN-6-ONE AND PROCESS FOR THE PRODUCTION THEREOF

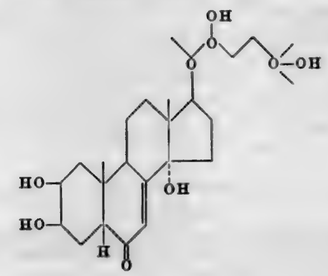
Rudolf Wiechert, Ulrich Kerb, and Peter Hocks, Berlin, Germany, assignors to Schering A.G., Berlin, Germany

No Drawing. Filed July 7, 1965, Ser. No. 470,189
Claims priority, application Germany, July 13, 1964, Sch 35,464

Int. Cl. C07c *169/62, 167/00;* C12b *1/00*

U.S. Cl. 260—397.2 2 Claims

A compound of the formula



prepared by introducing a hydroxyl group in the 14α position thereof.

3,442,918
17α-ALKA-1′,3′-DIYNYL STEROIDS

Peter Feather and Vladimir Petrow, London, England, assignors to The British Drug Houses Limited

No Drawing. Filed Sept. 2, 1966, Ser. No. 576,866
Claims priority, application Great Britain, Sept. 14, 1965, 39,276/65; Nov. 5, 1965, 47,078/65

Int. Cl. C07c *169/10, 199/08*

U.S. Cl. 260—397.4 22 Claims

A group of new 17α-alka-1′,3′-diynyl 17β-hydroxy- and 17β-alkoxy steroid compounds have been prepared. These compounds are of value in the treatment of certain conditions and defects of the reproductive system and for their effects upon fertility. They may be prepared by reacting the corresponding 17-oxo steroid with a metallic derivative of an alka-1,3-diyne and subsequently regenerating the desired derivative from the complex so formed.

3,442,919
17α - ALKA - 1′,3′ - DIYNYL - STEROIDAL-4,9(10)-DIEN-3-ONES

Peter Feather and Vladimir Petrow, London, England, assignors to The British Drug Houses Limited

No Drawing. Filed Mar. 6, 1967, Ser. No. 620,600
Claims priority, application Great Britain, Mar. 14, 1966, 11,039/66

Int. Cl. C07c *169/10, 167/14;* A61k *17/00*

U.S. Cl. 260—397.4 6 Claims

A new group of steroid compounds, in particular, 17α-alka - 1′,3′ - diynyl - 17β - hydroxy(alkoxy) - oestra-4,9(10)-dien-3-ones, are provided.

3,442,920
PREPARATION OF 13-ALKYLGONA-1,3,5(10),8,14-PENTAENES

Gordon Alan Hughes, Haverford, Pa., and Herchel Smith, 500 Chestnut Lane, Wayne, Pa. 19087; said Hughes assignor to said Smith

Continuation-in-part of application Ser. No. 461,908, June 7, 1965. This application Sept. 27, 1967, Ser. No. 670,982

Int. Cl. C07c *167/02, 169/10*

U.S. Cl. 260—397.45 8 Claims

13-alkylgona-1,3,5(10),8,14-pentaen-17-ones which are useful as intermediates in the total synthesis of 19-nor-steroids are prepared from 1-tetralone in three steps. Reactions of a vinyl Grignard reagent with the 1-tetralone gives a 1-vinyl-1-tetralol which is condensed with a 1-alkyl-1,3-cyclopentanedione under Michael condensation conditions to obtain a 13-alkyl-8,14-secogona-1,3,5(10),9,(11)-tetraene-14,17-dione, which is in turn cyclodehydrated to give the 13-alkylgona-1,3,5(10),8,14-pentaen-17-ones.

3,442,921
PROCESS FOR THE PREPARATION OF TETRAORGANO GERMANES

David Grant, Ruabon, North Wales, and John R. Van Wazer, Ladue, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Filed Oct. 21, 1964, Ser. No. 405,474

Int. Cl. C07f *7/00, 7/22;* C08g *33/20*

U.S. Cl. 260—429 6 Claims

The compounds of the present invention yield polymers such as by the hydrolysis of the alkyl germanium halides to yield polyalkyl germanium oxides. The aforesaid germanium alkyl and haloalkyl compounds are also useful as intermediates in the manufacture of other germanium compounds. The present invention relates to a process for the preparation of substituted germanium compounds, employing a germanium tetrahalide which is reacted with a substituted tin compound.

3,442,922
IMINODIACETATE ORGANOTIN, ANTIMONY, BISMUTH, TITANIUM AND GERMANIUM CHELATES

Horst G. Langer, Cochituate, Mass., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Apr. 9, 1964, Ser. No. 358,624

Int. Cl. C07f *7/22;* A01m *9/20;* A61k *27/00*

U.S. Cl. 260—429.7 8 Claims

Organo metal chelates of synthetic polyamino polycarboxylic acids, wherein the metal has part of its valence satisfied by chelation with acid groups on a terminal nitrogen and the remainder by organo substituent group.

3,442,923
PROCESS FOR THE PREPARATION OF ALKYL LEAD COMPOUNDS

Robert D. Gray, Gloucester, and Simon E. Mayer, Lexington, Mass., assignors to Houston Chemical Corporation, New York, N.Y., a corporation of Texas

No Drawing. Filed Feb. 4, 1965, Ser. No. 430,488

Int. Cl. C07f *7/26*

U.S. Cl. 260—437 8 Claims

Finely divided lead particles sized from 1 to 300 microns and having thin surfaces of an alkali metal-lead alloy are provided which can be reacted with alkyl halide to produce alkyl lead compounds.

3,442,924
PROCESS FOR THE PREPARATION OF MIXED ALKYL LEAD COMPOUNDS

Shinichi Imura and Masaru Yamanaka, Tsuno-gun, Yamaguchi-ken, Japan, assignors, by mesne assignments, to Toyo Ethyl Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

No Drawing. Filed Dec. 9, 1966, Ser. No. 600,365
Claims priority, application Japan, Dec. 14, 1965, 40/76,438; Aug. 30, 1966, 41/56,666, 41/56,667
Int. Cl. C07f 7/26
U.S. Cl. 260—437 7 Claims

1. In a process for preparing by means of the alkyl exchange reaction a mixture of methyl and ethyl lead tetraalkyl compounds including the methyl-ethyl lead compounds, the improvement which comprises using as catalyst a metal salt of a strongly acid cationic exchange resin, said metal being selected from the group consisting of aluminum, tin, lead, lithium, sodium, potassium, copper, silver, magnesium, calcium, barium, zinc, mercury, bismuth and iron.

3,442,925
PROCESS FOR THE PRODUCTION OF HYDROXYMETHYLSILOXANES

Walter Simmler, Odenthal-Schlinghofen, Hans Niederprum, Monheim, and Hans Sattlegger, Cologne-Buchheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed July 1, 1966, Ser. No. 562,970
Int. Cl. C07f 7/18, 7/02, 7/08
U.S. Cl. 260—448.2 7 Claims

Siloxanes of the formula

$$HO-CH_2-Si(CH_3)_nO_{\frac{3-n}{2}}$$

optionally containing

$$R_2SiO_{\frac{3-n}{2}}$$

unit, where m=1 or 2, n=1 to 3, and R is alkyl or aryl are prepared by heating a silane of the formula

$$(CH_3)_mSiR_3''-m$$

or an organosiloxane of the formula

$$(CH_3)_nSiO_{\frac{3-n}{2}}$$

the siloxane optionally containing

$$R_2SiO_{\frac{3-n}{2}}$$

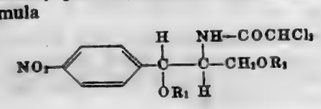
units, where R, m, and n are as above, R^1 is H or CH_3 and R'' is ethoxy, methoxy, or propyloxy, with ethanol or methanol and a catalytic amount of aromatic sulphonic acid at a temperature less than 100° C.

3,442,926
SILYL SUBSTITUTED CHLORAMPHENICOL

Ronald L. Houtman, Parchment, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Aug. 31, 1966, Ser. No. 576,239
Int. Cl. C07f 7/18; A61k 27/00
U.S. Cl. 260—448.8 3 Claims

1. Essentially pure crystalline compositions of matter of the formula



where R_1 is the moiety



wherein R_3 and R_4 are selected from the group consisting of lower alkyl containing 1 to 6 carbon atoms, inclusive, phenyl and benzyl, and R_5 is selected from the group consisting of lower alkyl containing 1 to 6 carbon atoms, inclusive, phenyl, benzyl, and hydrogen; and R_2 is selected from the group consisting of hydrogen and the moiety



wherein R_3, R_4 and R_5 are as given.

3,442,927
FLUOROXY COMPOUNDS

Phillip G. Thompson, St. Paul, and Julianne H. Prager, Arden Hills, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn.

No Drawing. Continuation-in-part of application Ser. No. 172,062, Feb. 7, 1962. This application Feb. 3, 1964, Ser. No. 343,444
Int. Cl. C07c 71/00
U.S. Cl. 260—453 16 Claims

1. Compounds of the formula

$$(R_f)_nC(F)_mOF$$

wherein R_f represents a member of the group consisting of perfluoroalkyl radicals having from 1 to 18 carbon atoms, n is an integer from 1 to 3, and m is 3—n.

3,442,928
PREPARATION OF N-(BETA-DIALKYLDITHIOPHOSPHORYLETHYL)ALKYL CARBAMATES AND THIOCARBAMATES

Raymond A. Simone, Walnut Creek, Calif., assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 19, 1965, Ser. No. 508,844
Int. Cl. C07f 9/16
U.S. Cl. 260—455 12 Claims

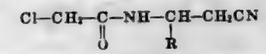
Process for the preparation of N-(beta-dialkyldithiophosphorylethyl)alkyl carbamates and thiolcarbamates comprising reacting an appropriate alkyl chloroformate or thiolformate with ethylenimine in the presence of a hydrogen chloride acceptor and then condensing the alkyl aziridinyl formate or thiolformate with a dialkyl dithiophosphoric acid or dialkyldithiophosphate alkali metal or ammonium salt.

3,442,929
N-CYANOALKYL HALOACETAMIDES

Teruhisa Noguchi, Fujisawa-shi, Keisuke Komoto, Hiratsuka-shi, Yoshio Uchiyama, Takaoka-shi, and Saburo Kano, Toyama-shi, Japan, assignors to Nippon Soda Kabushiki Kaisha, Tokyo-to, Japan, a company of Japan

No Drawing. Filed July 19, 1966, Ser. No. 566,236
Claims priority, application Japan, July 21, 1965, 40/43,785
Int. Cl. C07c 121/16
U.S. Cl. 260—465.4 3 Claims

Compounds of the formula



in which R is a hydrogen atom or an alkyl radical having 1 to 3 carbon atoms are useful as fungicides for application to plants or soil.

3,442,930
ALDEHYDE-ESTER COMPOUNDS

Wayne V. McConnell and William H. Moore, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Sept. 8, 1964, Ser. No. 395,028
Int. Cl. C07c 69/76, 69/74, 69/66
U.S. Cl. 260—468 4 Claims

Compounds containing both an aldehyde and an ester group are prepared by isomerization of certain epoxy ester groups in the presence of an acid catalyst. The aldehyde esters are valuable intermediates for the preparation of certain diol compounds which are useful, for example, as plasticizers.

3,442,931
PREPARATION OF 2,2-DISUBSTITUTED-1,3-PROPANEDIOL MONOESTERS

Roy B. Duke, Jr., Smyrna, Ga., and Milton A. Perry, Longview, Tex., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed June 11, 1965, Ser. No. 463,298
Int. Cl. C07c 67/00
U.S. Cl. 260—468 10 Claims

A process for the preparation of 2,2-disubstituted-1,3-propanediol monoesters by condensing formaldehyde with an aldehyde having only one alpha-hydrogen atom in a 1:2 mole ratio in the presence of a strongly basic catalyst at temperatures below 50° C. The products of the process are well-known and valuable articles of commerce, for example, as intermediates in the production plasticizers.

3,442,932
CARBAMIC ACID (FLUOROACETAMIDO-TRICHLORO)ETHYL ESTERS

Christa Fest, Wuppertal-Elberfeld, and Günther Hermann, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Oct. 28, 1965, Ser. No. 499,068
Claims priority, application Germany, Oct. 29, 1964, F 44,337
Int. Cl. C07c 125/06
U.S. Cl. 260—472 11 Claims

Carbamic acid-1-(fluoroacetamido-2,2,2-trichloro)ethyl esters which possess selective rodenticidal properties for combating short-tailed mice.

3,442,933
HIGH TEMPERATURE OXIDATIVE DEHYDROGENATION OF ORGANIC COMPOUNDS

Hugh J. Hagemeyer, Jr., Max Statman, and Herschel T. Vinyard, Longview, Tex., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Feb. 25, 1966, Ser. No. 530,023
Int. Cl. C07c 5/18, 15/10
U.S. Cl. 260—486 6 Claims

Carbonization of commercial grade silicon carbide reactor elements utilized in chemical reactions operated under oxidative dehydrogenation conditions can be reduced by soaking the silicon carbide elements in concentrated nitric acid prior to use. The nitric acid soaking of the silicon carbide elements also improves reactor heat transfer. Nitric acid treatment of silicon carbide reactor elements is especially advantageous when the elements are used in a reactor designed for the oxidative dehydrogenation of saturated organic compounds for the production of unsaturated organic compounds such as styrene and methyl methacrylate.

3,442,934
PROCESS FOR PRODUCING ESTERS OF ACRYLIC ACIDS

Lloyd A. Pine, Baton Rouge, La., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Dec. 20, 1965, Ser. No. 515,191
Int. Cl. C07c 67/00
U.S. Cl. 260—486 11 Claims

Vapor phase condensation of acrylic acid and C_1–C_{10} alpha-substituted alkyl acrylic acids with an organic alcohol in the presence of a molybdenum-containing catalyst increases the selectivity to the desired acrylate esters.

3,442,935
DIRECT PRODUCTION OF ACRYLATE ESTERS FROM ACRYLIC ACIDS

Lloyd Albert Pine, Baton Rouge, La., Henry George Ellert, Middletown, N.J., and Harry Vernon Drushel, Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 297,946, July 26, 1963. This application June 30, 1967, Ser. No. 650,254
Int. Cl. C07c 69/54, 121/00, 79/38
U.S. Cl. 260—486 28 Claims

This invention relates to the direct production of acrylate esters from unsaturated organic acids of the acrylic acid series: $C_nH_{2n-1}COOH$, by reaction of such an acrylic acid with a suitable alcohol, such as a low molecular weight monohydroxyl alcohol, at temperatures of between about 200–500° C. in the presence of a molybdenum oxide-containing catalyst. The esters produced by this invention are suitable for a wide variety of uses such as, for example, in the manufacture or synthesis of resins, fibers, clear plastics, paints, or other surface coatings.

3,442,936
ACETOXY-TERTIARY ALKYL-AMINE OXIDES

Walter M. Budde, Jr., Prior Lake, Minn., assignor to Ashland Oil & Refining Company, Ashland, Ky., a corporation of Kentucky

No Drawing. Filed July 26, 1965, Ser. No. 474,993
Int. Cl. C07c 93/16
U.S. Cl. 260—490 2 Claims

A class of detergent-grade amine oxides are provided by oxidizing an acetylated derivative of a 2-hydroxy (higher) alkyl, di (lower) alkyl teritiary amine.

3,442,937
PROCESS FOR STABILIZING SOLUTIONS OF ALIPHATIC PERCARBOXYLIC ACIDS

Kurt Seanewald, Knapsack, near Cologne, Heinrich Rehberg, Hermulheim, near Cologne, and Günter Lenz, Frechen, Germany, assignors to Knapsack Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany

No Drawing. Filed Oct. 8, 1965, Ser. No. 494,242
Claims priority, application Germany, Oct. 22, 1964, K 54,320
Int. Cl. C07c 73/10
U.S. Cl. 260—502 5 Claims

A stabilized percarboxylic acid composition and process for stabilizing aliphatic percarboxylic acid solutions by admixing into the percarboxylic acid solution, an active stabilizing amount of

(a) Quinoline or salt thereof;
(b) Alakli metal polyphosphate; and optionally
(c) A synergistic amount of urea.

3,442,938
PROSPHANILIC ACID DERIVATIVES
Burton G. Christensen, Scotch Plains, N.J., William J. Leanza, Staten Island, N.Y., and Gary H. Rasmusson, Watchung, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Filed Jan. 31, 1967, Ser. No. 614,529
Int. Cl. C07f 9/02; C07c 85/02
U.S. Cl. 260—502.5 6 Claims

A substituted nitrobenzene phosphonic acid is reduced to the corresponding phosphanilic acid. The nitrobenzene phosphonic acid may be prepared from the corresponding nitraniline which is converted to the nitrobenzene diazonium fluoborate, this diazonium salt is treated with a phosphorus trihalide in the presence of cuprous ion to yield, on hydrolysis, the desired nuclearly substituted nitrobenzene phosphonic acid.

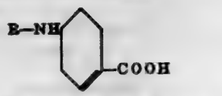
Variations of this method are disclosed where the nuclear substituents are 3-halo. These novel nuclearly substituted phosphanilic acids are useful as anti-bacterial agents and coccidiostats.

3,442,939
NOVEL SULFONIC ACIDS AND PROCESS FOR SYNTHESIZING SULFONIC ACIDS
Ellis K. Fields, Chicago, Ill., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana
No Drawing. Filed Apr. 13, 1966, Ser. No. 542,208
Int. Cl. C07c 143/24, 63/00; C11d 1/12
U.S. Cl. 260—511 6 Claims

A process for preparing novel sulfonic acids, which process comprises heating aromatic compounds which readily undergo electrophilic substitution, with 3-carboxy phenylsulfonyl chloride at a temperature of about 150 to 350° C. for a period of about 0.25 to 24 hours in the mole ratio of 4:1 to 20:1; also novel carboxylic acids are disclosed.

3,442,940
1-CARBOXYL - 4 - AMINO- (OR 1 - CARBOXYL-4-N-ALKYLAMINO-) CYCLOHEXENES AND PROCESS FOR THE PREPARATION THEREOF
Goro Inoue and Noboru Ohshima, Tokyo, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Kita-ku, Osaka, Japan, a corporation of Japan
No Drawing. Filed Sept. 10, 1965, Ser. No. 486,557
Claims priority, application Japan, Sept. 11, 1964, 39/51,391
Int. Cl. C07c 101/12, 99/10, 101/02
U.S. Cl. 260—514 10 Claims

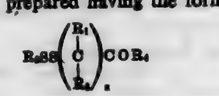
Novel compounds of the formula:



wherein R is hydrogen or an alkyl group having up to 20 carbon atoms, and a process for the preparation thereof which comprises treating a 4-halo-4-cyanocyclohexene with ammonia or a primary alkyl amine of 1 to 20 carbon atoms and then with an inorganic acid to effect hydrolysis.

3,442,941
SULFUR CONTAINING CARBOXYLIC ACIDS
Carl D. Emerson, Kansas City, Mo., and Paul C. Aichenegg, Prairie Village, Kans., assignors to Chemagro Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Oct. 2, 1964, Ser. No. 401,253
Int. Cl. C07c 149/20, 149/40; A01n 9/12
U.S. Cl. 260—539 9 Claims

Compounds are prepared having the formula:



where R_1 and R_3 are selected from the group consisting of hydrogen, lower alkyl, carboxyl lower alkyl, alkyl, carbocyclic aryl, carbocyclic haloaryl, haloalkyl, and ester of carboxy lower alkyl;

R_2 is selected from the group consisting of polyhaloethyl and polyhalovinyl;

R_4 is selected from the group consisting of OH, SH, OR_5 where R_5 is selected from the group consisting of alkyl, carbocyclic aryl, halocarbocyclic aryl, haloalkyl and alkylthioalkyl, SR_5,



where:

R_6 and R_7 are selected from the group consisting of hydrogen, alkyl and carbocyclic alkyl and R_6 and R_7 together with N complete a heterocyclic ring, and OMe where Me is selected from the group consisting of the metals of Groups I, II, VI, VII and VIII of the Periodic Table; and x is an integer from 1 to 2 inclusive. Such materials have been found useful to kill nematodes, fungi and undesirable plants. They also are useful as defoliating agents.

3,442,942
FLUORINATED OXYGEN CONTAINING ACYL FLUORIDES
Dario Sianesi, Adolfo Pasetti, and Constante Corti, Milan, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy, a corporation of Italy
Filed Apr. 7, 1965, Ser. No. 446,292
Claims priority, application Italy, Apr. 9, 1964, 7,678/64
Int. Cl. C07c 53/36, 53/14, 53/34
U.S. Cl. 260—544 1 Claim

Novel fluorinated linear polyethers. Preparation thereof by photochemical reaction in liquid phase of perfluoroolefin with oxygen in presence of ultraviolet radiation.

3,442,943
PROCESS FOR PREPARING 6-DEOXYTETRACYCLINES
Michael Joseph Martell, Jr., Pearl River, and Adma Schaeller Ross, Suffern, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Aug. 16, 1967, Ser. No. 660,921
Int. Cl. C07c 103/19
U.S. Cl. 260—559 4 Claims

This disclosure describes a process for the conversion of 2 - carboxamido-N-amidomethyl-6-deoxytetracyclines and 2 - carboxamido-N-imidomethyl-6-deoxytetracyclines to the corresponding 6-deoxytetracyclines under mild basic conditions.

3,442,944
METHOD FOR PREPARING BETA-ALLYLAMINOPROPIONAMIDES
Donald M. Fenton, Anaheim, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California
No Drawing. Filed Aug. 16, 1966, Ser. No. 572,695
The portion of the term of the patent subsequent to May 28, 1985, has been disclaimed
Int. Cl. C07c 103/12, 87/24
U.S. Cl. 260—561 8 Claims

Allyl amines are oxidized to beta-allylaminopropionamides with a soluble metallic salt such as the mercuric salts of strong mineral acids or of C_1–C_6 alkanoic acids or with mercuric oxide. The oxidation is performed at temperatures from 25° to 350° C. in liquid phase and sufficient pressure to maintain the liquid phase conditions. The mercuric compound is reduced to metallic mercury

by the oxidation and can be recovered and regenerated for reuse.

3,442,945
PHYTOTOXIC α-HALO-ACETANILIDES
John F. Olin, Ballwin, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Continuation-in-part of applications Ser. No. 523,923, Feb. 1, 1966, Ser. No. 496,175, Oct. 14, 1965, Ser. No. 397,656, Sept. 18, 1964, and Ser. No. 397,637, Sept. 18, 1964. This application May 22, 1967, Ser. No. 640,350
Int. Cl. C07c 103/32; C07d; A01n 9/20
U.S. Cl. 260—562 71 Claims

2-substituted α-haloacetanilides with specified substituents of the 5-, 6- and N-positions; and having phytotoxic properties.

3,442,946
2-AMINOMERCAPTO- AND 2-AMINOALKYL-CAPTOBENZOPHENONE OXIMES
Oscar Keller, Clifton, Norbert Steiger, Nutley, and Leo Henryk Sternbach, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey
Division of applications Ser. No. 197,862, May 28, 1962, now Patent No. 3,121,077, dated Feb. 11, 1964; Ser. No. 197,853, May 28, 1962, now Patent No. 3,121,075, dated Feb. 11, 1964, and Ser. No. 197,842, May 28, 1962, now Patent No. 3,121,103, dated Feb. 11, 1964, which are continuations-in-part of abandoned application Ser. No. 24,686, Apr. 26, 1960. This application Dec. 19, 1963, Ser. No. 331,904
Claims priority, application Czechoslovakia, Oct. 29, 1961, 7,357/60
Int. Cl. C07c 131/00, 149/24
U.S. Cl. 260—566 3 Claims

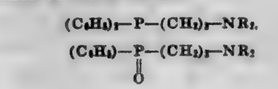
2-aminomercapto and 2 - aminoalkylmercaptobenzophenone oximes as intermediates in the preparation of corresponding quinazoline N-oxide and/or benzodiazepine 4-oxides.

3,442,947
PROCESS FOR PREPARING CARBODIIMIDES
Alwyn G. Davies, London, England, assignor to M & T Chemicals Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Jan. 24, 1966, Ser. No. 522,387
Int. Cl. C07c 125/02; C07f 7/22
U.S. Cl. 265—66 10 Claims

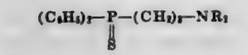
In accordance with certain of its aspects, the process of this invention for preparing organic carbodiimides comprises reacting bis(triorganotin) oxide, $(R_3Sn)_2O$, wherein R is a hydrocarbon group with at least an equimolar amount of organic isothiocyanate thereby forming organic carbodiimide containing the organic group of said organic isothiocyanate; and recovering said organic carbodiimide.

3,442,948
TERTIARY AMINOALKYL PHOSPHINE COMPOUNDS
Robert A. Wiley, Lawrence, Kans., assignor to Research Corporation, New York, N.Y., a non-profit corporation of New York
No Drawing. Filed Nov. 15, 1965, Ser. No. 507,698
Int. Cl. C07f 9/50; A61k 27/00
U.S. Cl. 260—570.5 7 Claims

Compounds of the formulae:



and



3,442,949
METHOD FOR PREPARING 5-(3-AMINOPROPYLIDENE)-5H-DIBENZO - [a,d] - 10,11 - DIHYDROCYCLOHEPTENES
Norman L. Wendler, Summit, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Original application May 3, 1965, Ser. No. 452,929. Divided and this application Aug. 16, 1967, Ser. No. 668,276
Int. Cl. C07c 85/08, 85/00
U.S. Cl. 260—570.8 5 Claims

Dibenzocycloheptenes having antidepressant activity are prepared in accordance with a process which includes epoxidizing 5-allylidene-5H-dibenzo[a,d] - 10,11-dihydrocycloheptene or a 3-loweralkyl-sulfonyl or a 3-trifluoromethyl derivative, by reaction with a peracid; rearranging the epoxidized allylidene to the corresponding 5-(oxapropylidene) derivative; and finally performing a reductive amination on the latter compound to produce the corresponding 5-(dimethylamino-propylidene) or 5-(methylaminopropylidene) derivative.

3,442,950
PROCESS FOR PREPARING AN AMINATED BENZENE
Robert S. Barker, Little Ferry, N.J., assignor to Halcon International, Inc., a corporation of Delaware
Continuation-in-part of application Ser. No. 201,125, June 8, 1962. This application Feb. 16, 1967, Ser. No. 616,686
Int. Cl. C07c 85/04, 87/50
U.S. Cl. 260—576 2 Claims

Aminated benzenes are prepared by catalytically reacting a cyclohexanol with an aminating agent at elevated temperatures. When the cyclohexanol is a constituent, together with cyclohexanone, of an oxygenated cyclohexane, the reaction takes place in the presence of an initially added quantity of hydrogen.

3,442,951
PROCESS FOR MANUFACTURING N-METHYLBUTYLAMINE
Pierre Thirion, La Chambre, France, assignor to Ugine Kuhlmann, Paris, France, a French company
No Drawing. Filed Mar. 27, 1967, Ser. No. 625,977
Claims priority, application France, Mar. 31, 1966, 55,755
Int. Cl. C07c 87/02
U.S. Cl. 260—583 9 Claims

N-methylbutylamine is prepared by feeding continuously butanal into an aqueous or a hydroalcoholic sodium hydroxide solution in a hydrogen atmosphere and at a temperature in the range between about 20° and 200° C. The solution contains about 0.25 to 5 moles of monomethylamine per mole of water and a catalytic amount of a hydrogenating catalyst.

3,442,952
2 - CHLOROTETRAFLUORO - 3 - OXY - 2 - CYCLOPENTENE-1-ONES AND PROCESS FOR PREPARING THEM
Richard F. Sweeney, Randolph Township, Dover, and William J. Cunningham, Rockaway, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Apr. 30, 1965, Ser. No. 452,384
Int. Cl. C07c 45/00
U.S. Cl. 260—586 4 Claims

2-chlorotetrafluoro-3-oxy-2-cyclopenten-1-ones are prepared by treating 2,3-dichloroperfluoro-2-cyclopenten-1-one with alkanols of from one to seven carbon atoms.

3,442,953

NOVEL 7-OXO-7-DESACETYLAMINO-COLCHICINE COMPOUNDS

Georges Muller, Nogent-sur-Marne, and Andre Poittevin, Les Lilas, France, assignors to Roussel-Uclaf, Paris, France, a corporation of France

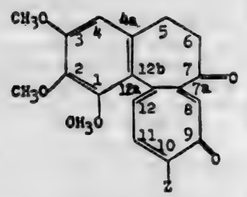
No Drawing. Original application June 10, 1964, Ser. No. 374,168, now Patent No. 3,393,240, dated July 16, 1968. Divided and this application Oct. 10, 1967, Ser. No. 681,950

Claims priority, application France, June 19, 1963, 938,630; Sept. 18, 1963, 947,899

Int. Cl. C07c *49/76*

U.S. Cl. 260—590 4 Claims

7-oxo-7-desacetyl-amino-colchicinic compounds of the formula



I

wherein Z is selected from the group consisting of lower alkoxy amino, lower alkylamino, dilower alkylamino, aralkylamino and lower alkyl-aralkyl amino and to a novel process for their preparation. The numbering system is that of system RRJ 3923 of Ring Index, 2nd ed., 1960. The invention further relates to novel anti-mitotic compositions and to a method of modifying cell mitosis.

3,442,954

TRANSITION METAL SALTS OF ALKYLBENZENE SULFONIC ACIDS FOR SELECTIVE OXIDATION REACTIONS

Richard E. Crocker, Anaheim, Calif., Martin L. Kaplan, Murray Hill, N.J., and Charles H. Hayes, Houston, Tex., assignors to Atlantic Richfield Company, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Continuation-in-part of application Ser. No. 573,208, Aug. 18, 1966. This application Jan. 23, 1968, Ser. No. 703,842

Int. Cl. C07c *45/04*

U.S. Cl. 260—592 8 Claims

A class of catalysts, for selective oxidation of organic compounds having an alkyl group connected to doubly bonded carbon atom for preferably producing compounds which include a carbonyl group, which consists of transition metal salts of alkylbenzene sulfonic acids and a process for utilizing such catalysts are disclosed. The sulfonic acid may be unpolymerized, for example, the cobalt salt of para-toluene sulfonic acid, or polymerized or cross-linked with a network forming agent in the form of a macroreticular ion-exchange resin, for example, the cobalt salt of a macroeticular alkylbenzene sulfonic acid ion-exchange resin.

3,442,955

ALKENYL AND ALKYNYL BIPHENYLYL SULFIDES

Peter E. Newallis, Morris Plains, and Pasquale Lombardo, Hanover, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Feb. 8, 1966, Ser. No. 525,851

Int. Cl. C07c *149/32*

U.S. Cl. 260—609 10 Claims

Alkenyl and alkynyl biphenylyl sulfides and certain derivatives thereof wherein the unsaturated groups contain alkyl or halogen substituents. These compounds are prepared by reacting 4-biphenylyl mercaptan with an unsaturated halide, or an alkyl- or halogen-substituted derivative thereof, in the presence of a hydrogen halide acceptor. These compounds are useful as insecticides.

3,442,956

PREPARATION OF 4,4'-DINITRODIPHENYL ETHER

Thomas M. Sheets, Newark, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 8, 1967, Ser. No. 688,995

Int. Cl. C07c *41/00, 41/04*

U.S. Cl. 260—612 5 Claims

An improvement in the process for preparing 4,4'-dinitrodiphenyl ether by condensing p-chlorinitrobenzene with a p-nitrophenol alkali metal salt in dimethylacetamide as solvent, which comprises conducting the reaction below reflux temperature, using lower specified amounts of dimethylacetamide and recovering dimethylacetamide directly from the reaction mixture by vacuum distillation.

3,442,957

PROCESS FOR PREPARING DIHYDROXY COMPOUNDS

Christoph Dörfelt, Burghausen (Salzach), Germany, assignor to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Jan. 11, 1966, Ser. No. 519,950

Claims priority, application Germany, Jan. 15, 1965, F 44,966

Int. Cl. C07c *43/10, 43/04*

U.S. Cl. 260—615 3 Claims

Process for preparing 1.4-butylene glycol and polybutylene glycols by heating the corresponding diacetyl compounds in water at a temperature from 90° to 120° C. in the presence of 0.1 to 4 percent of an acidic substance.

3,442,958

PURIFICATION OF PHENOL

Chai Y. Choo, Westwood, N.J., assignor to Halcon International, Inc., a corporation of Delaware

No Drawing. Filed June 23, 1966, Ser. No. 559,734

Int. Cl. C07c *37/22*

U.S. Cl. 260—621 3 Claims

The present invention relates to the purification of phenol prepared by dehydrogenating a crude oxygenated cyclohexane fraction wherein the phenol is contacted with silica alumina.

3,442,959

OXIDATION OF PARAFFINS TO PROVIDE ALCOHOLS

Gerald Sugerman, Fort Lee, N.J., assignor to Halcon International, Inc., a corporation of Delaware

No Drawing. Filed Aug. 6, 1964, Ser. No. 388,012

Int. Cl. C07c *29/12, 29/24*

U.S. Cl. 260—639 8 Claims

The present invention relates to the molecular oxygen oxidation of paraffins having 10 to 30 carbon atoms and also containing aromatic hydrocarbons. Specifically, the oxidation of paraffins having 10 to 30 carbon atoms and acid and provides for the addition of boric acid during the oxidation in a prescribed fashion.

3,442,960

HIGH SELECTIVITY PROCESS FOR THE CHLORINATION OF METHYLBENZENES

Charles H. De Puy, Boulder, and Harold D. Rider, Denver, Colo., assignors to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio

No Drawing. Filed Jan. 23, 1967, Ser. No. 610,785

Int. Cl. C07c *25/04, 17/02*

U.S. Cl. 260—651 5 Claims

The present invention comprises a process for the preparation of chloromethylbenzenes from methylbenzenes with minimun production of dichloromethylbenzenes by contacting said methylbenzenes with elemental chlorine in the liquid phase in a solvent comprising a major portion of a solvent selected from the group consisting of benzene and mono-, di-, and tri-chlorobenzenes, and benzene-acetonitrile mixture, and mixtures of the foregoing, at a temperature of from about 0 to about 200° C., and thereafter recovering the chloromethylbenzene thus formed.

3,442,961

SEPARATION OF HYDROGEN CHLORIDE FROM VINYLIDENE FLUORIDE

David G. Hutton, Newark, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed May 3, 1967, Ser. No. 635,747

Int. Cl. C07c *7/02, 21/18, 7/10*

U.S. Cl. 260—653.3 7 Claims

Gaseous mixtures of vinylidene fluoride and hydrogen chloride are contacted with a liquid chlorobenzene to dissolve the hydrogen chloride.

3,442,962

PROCESS FOR THE PRODUCTION OF FLUOROCHLOROMETHANES

Martino Vecchio, Italo Cammarata, and Luciano Lodi, Milan, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy, a corporation of Italy

Filed Mar. 21, 1966, Ser. No. 536,596

Int. Cl. C07c *17/10*

U.S. Cl. 260—653.7 4 Claims

A continuous process for the conversion of methane into monofluorotrichloromethane and dichlorodifluoromethane by continuously passing a stream of methane, chlorine, hydrogen fluoride and from 1 to 15 moles per mole of methane of a recycle mixture of at least partially chlorinated and of partially fluorinated methanes consisting predominantly of CCl_4, $CFCl_3$, $CHCl_3$, CH_2Cl_2, $CHCl_2F$, the proportion of CCl_4 and $CFCl_3$ amounting together to at least 60% by weight of the mixture, the molar hydrogen-fluoride:methane ratio being up to substantially 2:1, through a reaction zone over a solid chlorination-fluorination catalyst at a temperature ranging between 180° and 700° C. and for a catalyst-contact time between 0.1 and 30 seconds and continuously separating the reaction-products mixture into a recycle mixture, substantially equal in amount and composition to the recycle mixture passed over the catalyst together with methane, chloride, and hydrogen fluoride, and into a recovered product consisting essentially of the desired mono- and difluorochloromethanes.

3,442,963

DEHYDRATION OF ALPHA METHYLBENZYL ALCOHOL TO STYRENE

Ernest I. Korchak, Hackensack, N.J., assignor to Halcon International, Inc., a corporation of Delaware

No Drawing. Filed May 24, 1967, Ser. No. 640,818

Int. Cl. C07c *15/10*

U.S. Cl. 260—669 3 Claims

This invention relates to the vapor phase dehydration of methylbenzyl alcohol to form styrene. More specifically the invention relates to a novel dehydration technique whereby the conversion of alpha methylbenzyl alcohol to styrene can be increased and the conversion of alcohol to undesirable byproducts can be decreased by conducting the reaction in the presence of phenol having a partial pressure in the range of 0.01 to 5 p.s.i. in the dehydration reactor.

3,442,964

PRODUCTION OF DETERGENT ALKYLATE

Wilfred John Oldham, Falkirk, Scotland, assignor, by mesne assignments, to British Hydrocarbon Chemicals Limited, London, England

No Drawing. Filed Jan. 12, 1965, Ser. No. 425,059

Claims priority, application Great Britain, Jan. 17, 1964, 2,197/64

Int. Cl. C07c *3/52, 15/00, 143/24*

U.S. Cl. 260—671 19 Claims

Detergent alkylates are prepared by the alkylation of aromatic hydrocarbons with C_{10}–C_{16} olefins. The olefins are prepared by dimerizing C_5–C_8 olefins with a catalyst comprised of a synthetic petroleum cracking catalyst and a stable salt of a transition metal.

3,442,965

PRODUCTION OF DETERGENT ALKYLATE AND OF OLEFINES SUITABLE FOR PREPARING SUCH DETERGENT ALKYLATES

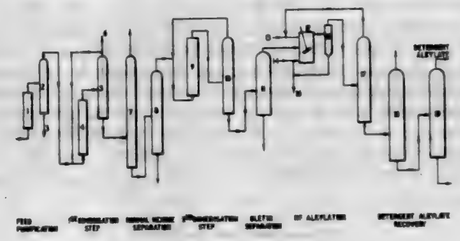
Wilfred John Oldham, Falkirk, Scotland, assignor, by mesne assignments, to British Hydrocarbon Chemicals Limited, London, England

Continuation-in-part of application Ser. No. 280,449, May 14, 1963. This application May 11, 1966, Ser. No. 554,271

Claims priority, application Great Britain, June 1, 1962, 21,257/62

Int. Cl. C07c *3/10, 3/52, 3/34*

U.S. Cl. 260—671 20 Claims



Detergent alkylates are prepared by alkylating an aromatic hydrocarbon with a branched chain olefin having from 10–16 carbon atoms. The branched chain olefins are prepared by dimerizing straight chain C_5–C_8 monoolefins with a catalyst comprising a synthetic petroleum cracking catalyst which may also contain an oxide of nickel, cobalt, manganese or chromium.

3,442,966

TRANSALKYLATION PROCESS

Ernest L. Pollitzer, Hinsdale, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Dec. 22, 1967, Ser. No. 692,646

Int. Cl. C07c *3/52, 3/58, 3/62*

U.S. Cl. 260—672 6 Claims

Toluene is transalkylated utilizing a catalyst comprising a crystalline aluminosilicate suspended in an alumina matrix and having at least one active catalytic ingredient carried by the matrix.

3,442,967

ADDITIVE FOR INCREASING EFFICIENCY IN THERMAL HYDRODEALKYLATION

Donald J. Wynnemer, Baytown, Tex., assignor to Esso Research and Engineering Company

No Drawing. Filed June 14, 1968, Ser. No. 736,965
Int. Cl. C07c 3/30, 3/58
U.S. Cl. 260—672 11 Claims

The thermal dealkylation of polyalkyl aromatic hydrocarbons (having from 1 to 3 carbon atoms in each alkyl substituent) is increased by the addition of a radical-forming compound chosen from the group consisting of the C_1 to C_3 alkanols. The radical-forming compound may be added to the hydrodealkylation zone in amounts from about 20 to about 1000 mols per million mols of aromatic hydrocarbon introduced into the hydrodealkylation zone. In the hydrodealkylation of dimethyl naphthalene, the addition of 200 p.p.m. of ethanol was found to increase the once-through conversion from 44.3% to 99.5%, with the production of naphthalene increased from 5.5% to 19.1% and the production of monomethyl naphthalene increased from 23.5% to 72.1%, based on feedstock.

3,442,968

PROCESS OF DEHYDROGENATION

Laimonis Bajars, Princeton, N.J., assignor to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 244,276, Dec. 13, 1962. This application June 11, 1965, Ser. No. 463,364
The portion of the term of the patent subsequent to Sept. 21, 1982, has been disclaimed
Int. Cl. C07c 11/00, 5/20
U.S. Cl. 260—680 12 Claims

1. The method of dehydrogenating aliphatic hydrocarbons of 4 to 6 carbon atoms which comprises heating in the vapor phase at a temperature of from about 450° C. to 850° C. an aliphatic hydrocarbon of 4 to 6 carbon atoms with oxygen in a molar ratio of at least one-fourth mol of oxygen per mol of said hydrocarbon and chlorine in a molar ratio of from about 0.01 to less than 0.5 mol of chlorine per mol of said hydrocarbon, the partial pressure of said hydrocarbon being equivalent to less than about one-fifth atmosphere at a total pressure of one atmosphere, with a catalyst selected from the group consisting of manganese, salts, oxides and hydroxides of manganese and mixtures thereof in a catalytic amount, the ratio of the gram mols of the said oxygen to the gram atoms of said chlorine being at least 1.50.

3,442,969

OLEFIN CONVERSION OVER GROUP V–B METAL CATALYSTS

Robert L. Banks, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Jan. 3, 1966, Ser. No. 517,918
Int. Cl. C07c 3/34, 3/42
U.S. Cl. 260—683 7 Claims

An olefin is converted by contact with at least one metal of Group V–B under conditions to produce compounds having a different number of carbon atoms per molecule.

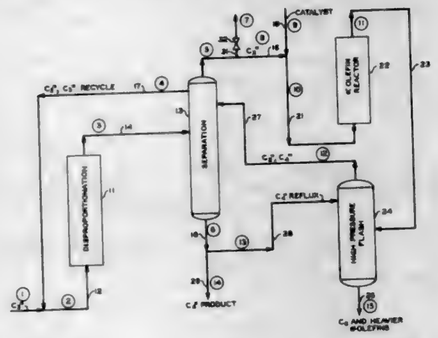
3,442,970

HYDROCARBON CONVERSION

Joseph W. Davison, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Feb. 7, 1966, Ser. No. 525,523
Int. Cl. C07c 3/20, 3/62, 11/04
U.S. Cl. 260—683.15 1 Claim

An integrated process for propylene disproportionation and the production of alpha olefins wherein ethylene produced by disproportionating propylene is polymerized to produce the alpha olefins which are separated in a high pressure flash zone from C_4 and lighter olefins which are returned to the separation zone for the disproportionation effluent and reflux is provided for the high pressure flash zone from the bottoms product of the separation zone.



3,442,971

PROCESS FOR PRODUCTION OF OLEFINES BY DIMERIZATION, CO-DIMERIZATION, POLYMERIZATION AND CO-POLYMERIZATION OF OLEFINES

Olav-Torgeir Onsager, Baerum, Norway, assignor to Sentralinstitutt for Industriel Forskning

No Drawing. Filed Feb. 9, 1966, Ser. No. 526,879
Claims priority, application Norway, Feb. 12, 1965, 156,751
Int. Cl. C07c 3/10
U.S. Cl. 260—683.15 20 Claims

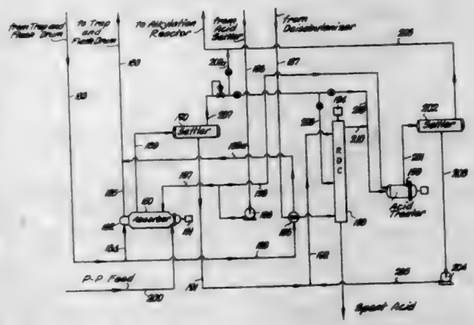
Monoolefins are oligomerized using a catalyst mixture comprising a cyclobutadiene nickel dihalide and a compound such as ethylaluminum dichloride or diethylberyllium to give a product with a high content of beta- and gamma-olefins. The use of ethylene and/or propylene as the feed with tetramethylcyclobutadiene-nickel-dichloride or tetraphenylcyclobutadiene-nickel-dichloride as a catalyst component is illustrated.

3,442,972

ALKYLATION OF ALKYL SULFATES

Harry E. Massa, Prairie Village, Kans., assignor to Stratford Engineering Corporation, Kansas City, Mo., a corporation of Delaware

Filed Oct. 12, 1965, Ser. No. 495,191
Int. Cl. C07c 3/54, 3/14, 139/00
U.S. Cl. 260—683.61 8 Claims



A sulphuric acid recovery process used in conjunction with sulphuric acid alkylation for the recovery and reuse of spent alkylation acid. The sulphuric acid in the spent alkylation acid is reacted with olefins in a continuous process to produce dialkyl sulfates. Dividing the reaction product of the sulphuric acid and olefin into a relatively lighter phase having therein normal paraffinic hydrocarbons, a quantity of alkyl esters and probably excess unreacted olefin and a relatively heavier phase comprising dialkyl esters, monoalkyl esters, acid, water and acid soluble contaminants. Conserving the alkyl ester values and any olefin values of said light phase for return to the alkylation reaction zone.

3,442,973

ISOMERIZATION PROCESS UTILIZING A GOLD-PALLADIUM ALLOY IN THE CATALYST

John H. Sinfelt, Berkeley Heights, Allan E. Barnett, Westfield, and George W. Dembinski, West Orange, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Nov. 14, 1966, Ser. No. 593,710
Int. Cl. C07c 5/24
U.S. Cl. 260—683.65 3 Claims

An isomerization process for isomerizing normal paraffins in the C_4–C_8 range is conducted with a catalyst comprising an alloy of gold and palladium on an alumina support. The amount of gold is 0.10–2.0 wt. percent based on the total catalyst; the amount of palladium corresponds to 5–83 wt. percent the gold present in the alloy.

3,442,974

THERMOSETTABLE EPOXIDES CONTAINING ISOCYANATE BLOCKED WITH PHENOL-FORMALDEHYDE NOVOLACS

Bart J. Bremmer, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed May 17, 1965, Ser. No. 456,505
Int. Cl. C08g 23/08, 30/14
U.S. Cl. 260—831 7 Claims

This application is directed to a shelf stable thermosettable epoxy resin mixture comprising a polyepoxide containing more than one 1,2-epoxy group per molecule in admixture with a polyisocyanate having all of the isocyanate groups blocked by reaction with an excess of a phenolic hydroxyl compound and wherein said mixture contains from 0.75 to 0.95 phenolic hydroxyl equivalent per epoxide equivalent.

3,442,975

POLYIMINE/POLYCARBONAMIDE GRAFT POLYMERS

Thomas M. Cawthon, Dover, George J. Schmitt, Madison, Allen F. Higbee, Cedar Knolls, Jack R. Pedersen, Parsippany, and Hendrikus J. Oswald, Morristown, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Jan. 11, 1967, Ser. No. 608,516
Int. Cl. C08g 20/10
U.S. Cl. 260—857 10 Claims

This invention relates to graft polymers, i.e., polymers having a long polymeric chain, designated the backbone; and having shorter polymeric chains each pendant from the backbone at successive points along the length of the backbone, designated side chains. More particularly this invention relates to graft polymers wherein the side chains are polycarbonamide chains having as repeating unit the diradical of a monoamino monocarboxylic acid, i.e., —NHRC(=O)—, wherein R has chain lengths between 3 and 18 atoms, especially being 5 to 11 methylene groups, including such graft polymers in the form of a drawn, molecularly oriented filament from polyethylenimine/e-caprolactam; and process of producing said graft polymers by polymerizing lactam in admixture with polyimine using amino carboxylic acid catalyst or promoter.

3,442,976

COATING COMPOSITIONS COMPRISING A CARBOXYLIC ACID AMIDE POLYMER AND A POLYMER OF VINYL FLUORIDE

Gene Gerek, Cheswick, Pa., assignor to PPG Industries, Inc., Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed May 23, 1966, Ser. No. 551,886
Int. Cl. C08g 37/32; C08f 29/16
U.S. Cl. 260—853 8 Claims

Coating compositions containing polymers of vinyl chloride are enhanced by the addition of aldehyde-modified interpolymers of polymerizable unsaturated carboxylic acid amide and other copolymerizable ethylenically unsaturated monomers.

3,442,977

POLYMERIC BLENDS

Thomas S. Grabowski, Vienna, Va., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Apr. 26, 1966, Ser. No. 545,277
Int. Cl. C09k 3/28; C08f 37/18
U.S. Cl. 260—876 5 Claims

Flame retardant polymeric compositions comprised of chlorine and bromine substituted carboxylic acids and/or acid anhydrides combined with ABS graft polymers and chlorinated polyethylene.

3,442,978

PREPARATION OF BLOCK COPOLYMERS OF PROPYLENE AND ETHYLENE

Habet M. Khelghatian, Springfield, and James L. Jezl, Swarthmore, Pa., and Louise D. Hague, Wilmington, Del., assignors to Avisun Corporation, Philadelphia, Pa., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 244,281, Dec. 13, 1962. This application May 16, 1966, Ser. No. 550,110
The portion of the term of the patent subsequent to Aug. 23, 1983, has been disclaimed
Int. Cl. C08f 45/68, 19/00, 15/00
U.S. Cl. 260—878 9 Claims

This invention relates to the preparation of block copolymers of propylene and ethylene, and more particularly to the preparation of block copolymers of propylene and ethylene containing a plurality of blocks of copolymers which possess tensile impact strength and clarity far superior to polypropylene or to block polymers of ethylene and propylene of equivalent flow rate known to the art. The block copolymers of this invention are further characterized in that they contain between about 1.5 mol percent and about 15 mol percent of ethylene. The block copolymers of this invention are prepared by polymerizing propylene or a mixture of propylene and about 1.0 mol percent to about 5 mol percent ethylene in a first phase. Thereafter, without purging unreacted monomer, or monomers, from the system, polymerization is continued with ethylene or a propylene-ethylene mixture containing more ethylene than the first-mentioned mixture, i.e., in the range between about 20 mol percent and 100 mol percent ethylene. These two phases may be repeated in a continuous fashion.

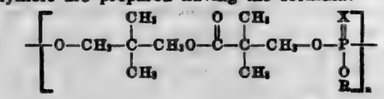
3,442,979
THERMOPLASTIC-ELASTIC MOULDING COMPOSITIONS WITH IMPROVED NOTCHED BAR IMPACT STRENGTH
Karl-Heinz Ott, Cologne-Stammheim, Karl-Heinrich Knapp, Leverkusen, Karl Dinges, Cologne-Stammheim, and Harry Roehr, Cologne, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation
Filed July 14, 1964, Ser. No. 382,515
Claims priority, application Germany, July 30, 1963, F 48,363
Int. Cl. C08f *19/18, 41/12*
U.S. Cl. 260—880 6 Claims
Compositions comprising, in polymerized form, 5 to 50% by weight polybutadiene, 25 to 85% by weight styrene and 10 to 47% by weight acrylonitrile produced by forming an emulsion containing polybutadiene, styrene and acrylonitrile within the above proportions, initiating polymerization with up to 30% of said emulsion and continuing said polymerization by adding the remaining 70% of the emulsion to the resulting polymerizate at a rate corresponding to the rate of polymerization. An extended composition thereof can be formed by adding additional styrene-acrylonitrile copolymer as a blend to provide a composition within the aforesaid proportions.

3,442,980
FLAME-RETARDANT ABS GRAFT POLYMER BLENDS
Thomas S. Grabowski, Vienna, W. Va., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
No Drawing. Filed Apr. 26, 1966, Ser. No. 545,239
Int. Cl. C09k *3/28*; C08f *33/00*
U.S. Cl. 260—880 6 Claims
Flame-retardant graft polymer blends of halogen-substituted carboxylic acids and/or acid anhydrides with acrylonitrile-butadiene-styrene graft polymer compositions.

3,442,981
ABS POLYMERS AND PROCESS FOR MAKING THE SAME
Owen L. Stafford, Donald V. Wing, and Duane E. Stolsmark, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Feb. 28, 1966, Ser. No. 530,394
Int. Cl. C08f *33/08, 29/56, 29/12*
U.S. Cl. 260—880 3 Claims
A process for making an ABS polymer which comprises polymerizing a stable solution of styrene, acrylonitrile, resinous copolymer of styrene and acrylonitrile and a block copolymer of a predominant amount of butadiene and a minor amount of styrene.

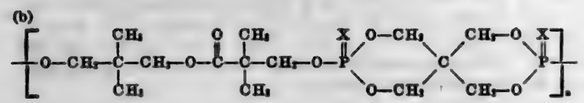
3,442,982
POLYPHOSPHITES OF 2,2-DIMETHYL-3-HYDROXYPROPYL-2-DIMETHYL-3-HYDROXYPROPIONATE
Lester Friedman, Beachwood, Ohio, assignor to Weston Chemical Corporation, Newark, N.J., a corporation of New Jersey
No Drawing. Filed Oct. 15, 1965, Ser. No. 496,718
Int. Cl. C08g *33/16*; C07d *105/02*
U.S. Cl. 260—927 13 Claims
Polymers are prepared having the formula:

(a)



or

(b)



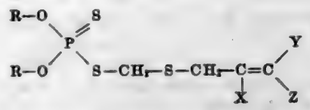
or (c) the polymeric reaction product of Ester diol 204, a phosphite having the formula



and a dihydric phenol, hydrogenated dihydric phenol or other dihydric phenol, *n* is an integer greater than 1, X is oxygen, sulfur or nothing, R is alkyl, aryl or haloaryl.

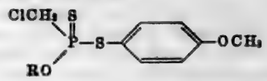
3,442,983
MODIFIED POLYOLEFIN PHOSPHITE WAXES AND PROCESS FOR PREPARING THE SAME
Isaac J. Levine, East Brunswick, and Arthur K. Ingberman, Somerville, N.J., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed July 6, 1965, Ser. No. 469,890
Int. Cl. C07f *9/08*; C08f *27/00*; C09g *1/10*
U.S. Cl. 260—932 12 Claims
Adducts of a polyolefin wax having olefinic double bonds and an alkyl phosphite having a hydrogen atom capable of entering into an addition reaction with the olefinic double bonds, and such adducts wherein the oxyalkyl groups attached to phosphorus atoms are converted to hydroxyl groups. In the process, a polyolefin wax is reacted with an alkyl phosphite and the oxyalkyl groups are converted to hydroxyl groups by pyrolysis.

3,442,984
O,O-(DI METHYL OR ETHYL)-S-(SUBSTITUTED ALLYLTHIOMETHYL) DITHIOPHOSPHATES
Heiner Dickhaeuser and Gunter Scheuerer, Ludwigshafen (Rhine), Heinrich Adolphi, Limburgerhof, Pfalz, and Gustav Steinbrunn, Schwegenheim, Pfalz, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
No Drawing. Filed Mar. 3, 1966, Ser. No. 531,331
Claims priority, application Germany, Mar. 18, 1965, B 81,038
Int. Cl. C07f *9/02*; A01n *9/36*
U.S. Cl. 260—948 5 Claims
1. A compound having the formula:



in which R denotes a member selected from the group consisting of methyl and ethyl, X denotes a member selected from the group consisting of methyl and bromine, Y denotes a member selected from the group consisting of chlorine and bromine and Z denotes a member selected from the group consisting of hydrogen and chlorine.

3,442,985
O-LOWER ALKYL-S-ANISYL CHLOROMETHYL-PHOSPHONODITHIOATES
Ralph B. Fearing, Bardonia, N.Y., assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 13, 1965, Ser. No. 495,721
Int. Cl. C07f *9/40*; A01n *9/36*
U.S. Cl. 260—951 5 Claims
O-alkyl-S-anisyl chloromethylphosphonodithioates represented by the general formula



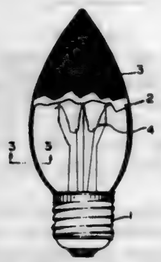
wherein R is lower alkyl. The compounds are useful as pesticides, for example, controlling insects and mites. Representative compounds are O-ethyl-S-(p-anisyl) chloromethylphosphonodithioate, O-isopropyl-S-(p-anisyl) chloromethylphosphonodithioate, O-isoamyl-S-(p-anisyl) chloromethylphosphonodithioate and O-n-propyl-S-(p-anisyl) chloromethylphosphonodithioate.

3,442,986
MONO HALOALKYL BIS-HYDROXY OXYALKYLENE PHOSPHATES
Maurice Frederick Mole, Kingswinford, James Keith Jacques, Birmingham, and John Desmond Collins, Albrington, near Wolverhampton, England, assignors to Albright & Wilson (Mfg.) Limited, Oldbury, near Birmingham, Warwickshire, England, a British company
No Drawing. Filed June 7, 1965, Ser. No. 462,060
Claims priority, application Great Britain, June 5, 1964, 23,487/64
Int. Cl. C07f *9/06*
U.S. Cl. 260—953 2 Claims
Dihydroxy compounds suitable for use in the manufacture of modified polymeric materials having the formula $(RO)PO[OC_2H_3R')_yOH]_2$ where each R is a haloalkyl group having from 2 to 8 carbon atoms of which the β-carbon atom and each subsequent carbon atom is attached to at least one halogen atom having an atomic number of from 17 to 35, R' is selected from the group which consists of hydrogen, methyl, chloromethyl and bromomethyl, and each y has a value of from 1 to 20. The invention also provides compositions containing a major portion of at least one of said dihydroxy compounds. The dihydroxy compounds are preferably prepared by reacting an acid phosphate of the formula $(RO)PO(OH)_2$, with from 2 to 40 molar portions of an alkylene oxide selected from ethylene oxide, propylene oxide, and epichlorhydrin, at a temperature between about 40° and 85° C.

ERRATUM

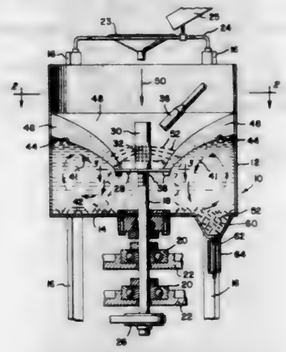
For Class 263—53 see:
Patent No. 3,442,498

3,442,987
METHOD OF PRODUCING DECORATIVE INCANDESCENT LAMPS
Thomas J. Sentementes, Wakefield, and Carl Pomroy, Beverly, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Dec. 30, 1966, Ser. No. 606,114
Int. Cl. B29c *13/04*
U.S. Cl. 264—1 4 Claims



A lamp is fabricated wherein an elastomeric resin case having peripheral grooves formed thereabout is disposed upon the lamp envelope to diffuse the light and cause the filament to appear to be elongated throughout the length of the lamp. The process of fabricating the lamp includes the steps of coating a pattern having the shape of the lamp envelope with an elastomeric resin, curing the resin, and then removing the elastomeric case formed and placing over the lamp.

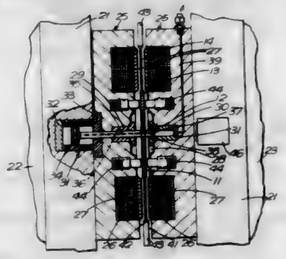
3,442,988
METHOD FOR PREPARING METAL PARTICLES
Tom Winfield Williams, Little Rock, Ark., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Apr. 4, 1966, Ser. No. 539,977
Int. Cl. B22d *23/08*
U.S. Cl. 264—8 7 Claims



Particles of molten metal are formed and then passed into foam to at least partially chill them. The particles may be further passed into a cooling liquid whose surface supports the foam. The molten metal particles may be centrifugally cast through holes extending through the side wall of a rotating hollow pot. The liquid may be rotated to form a vortex, so that its surface is an annular wall surrounding and spaced from the pot.

3,442,989
METHOD OF FORMING CARBON-BONDED SILICON CARBIDE BODIES
Richard D. Hildebrandt, Cupertino, Calif., assignor to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
No Drawing. Filed Mar. 7, 1966, Ser. No. 532,081
Int. Cl. C01b *31/36*
U.S. Cl. 264—29 7 Claims
This disclosure relates to a method for fabricating silicon carbide bodies and an improved silicon carbide body particularly suitable as a silicon carbide side wall for an electrolytic reduction cell.

3,442,990
METHOD OF EMBOSSING GRAMOPHONE DISCS
Alan Phillipson, Basil Harry Royston Spiller, Robin Smith, and Harry Cheesman, all of Decca House, 9 Albert Embankment, London, SE.1, England
Continuation of application Ser. No. 395,875, Sept. 11, 1964. This application Aug. 7, 1967, Ser. No. 658,689
Int. Cl. B29c *17/00*
U.S. Cl. 264—39 7 Claims



A method of embossing gramophone discs repetitively using opposed die plates; one die plate is maintained stationary while the other is retracted and advanced a short

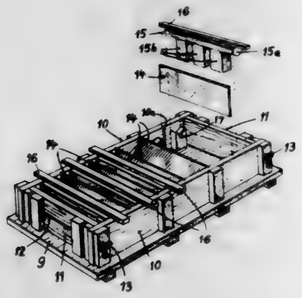
distance to emboss the discs with sound tracks, discs being fed between the die plates one at a time and taken away in between embossing strokes; finally the first die plate is withdrawn to permit changing or cleaning of the die plates.

3,442,991

METHOD FOR PRODUCING AEROCONCRETE BUILDING BLOCKS

Walter Lanz, Kleinfeld 154, Ipsach, near Bienne, Bern, Switzerland

Continuation of application Ser. No. 333,578, Dec. 26, 1963. This application May 24, 1967, Ser. No. 641,054
Claims priority, application Switzerland, Dec. 31, 1962, 15,305/62
Int. Cl. B28b *7/18, 7/28*
U.S. Cl. 264—42 **2 Claims**



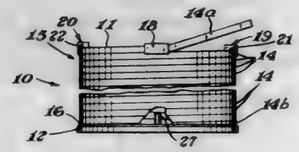
The method of making building blocks of aeroconcrete, each having a medially disposed and lengthwise extending horizontal channel intersecting with end and intermediate vertical chanels so that when piled with the vertical channels in alignment, reinforcing rod and concrete may be poured therein to form, through the horizontal and vertical channel network, a monolithic wall of great strength and yet possessing excellent heat insulating characteristics.

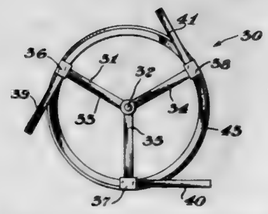
3,442,992

PREPARATION OF CYLINDRICAL PLASTIC STRUCTURES

Donald R. Wright, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Nov. 5, 1965, Ser. No. 506,557
Int. Cl. B29d *27/02;* **B29h** *7/20*
U.S. Cl. 264—45 **7 Claims**





A method and apparatus for forming a spirally generated foam plastic structure is disclosed. The apparatus is guided by the cylindrical walls and does not require a center pivot, support or mast.

3,442,993

VITREOUS MATERIAL FOR USE IN SEMICONDUCTOR DEVICES

Hiroshi Yamamoto and Koichi Ikeda, Tokyo, Japan, assignors to Nippon Electric Company Limited, Minatoku, Tokyo, Japan, a corporation of Japan

Filed Dec. 6, 1963, Ser. No. 328,603
Claims priority, application Japan, Dec. 17, 1962, 37/57,289
Int. Cl. C01b *33/26;* **C01g** *21/02*
U.S. Cl. 264—61 **8 Claims**

A vitreous sealing glass composiiton is provided for sealing semiconductor elements having lead wires coupled thereto, the composition being formed of a low melting glass having a softening point ranging from about 225° to 325° C. and a coefficient of thermal expansion ranging from about 90 to 160×10^{-7} per degree centigrade, the low melting glass having mixed herewith an inorganic oxide of lower coefficient of expansion than the glass in amounts sufficient to lower the coefficient of thermal expansion of the glass to a predetermined level. The mixture is applied to the semiconductor element being sealed and the whole heated to a temperature within the softening point range of the glass to cause said glass mixture to flow and seal off the element while avoiding setting up strains.

3,442,994

METHOD FOR MAKING CURVED CERAMIC PLATES

Wilbur F. Herbert, Wheatridge, Colo., assignor to Coors Porcelain Company, Golden, Colo., a corporation of Colorado

No Drawing. Filed Feb. 7, 1966, Ser. No. 525,330
Int. Cl. B28b *1/14;* **C04b** *35/18, 33/32*
U.S. Cl. 264—63 **6 Claims**

In accordance with this invention, a shaped ceramic article is manufactured by the steps of first forming to predetermined shape a self-sustaining body of raw ceramic batch material containing a temporary organic binder, bisque firing the body while maintaining it in the predetermined shape thereby to increase the bond strength of the body, and thereafter firing the body to sintering temperature while simultaneously reshaping it to the final desired shape. The method is particularly suited for the manufacture of curved armor plate and the like from alumina ceramics.

3,442,995

FABRICATION OF REVERSE OSMOSIS APPARATUS

Albert L. Bennett, Glendale, and Serop Manjikian, Del Mar, Calif., assignors to Universal Water Corporation, Del Mar, Calif., a corporation of California

No Drawing. Filed Nov. 8, 1966, Ser. No. 592,764
Int. Cl. B29b *21/52;* **B29c** *3/00*
U.S. Cl. 264—66 **6 Claims**

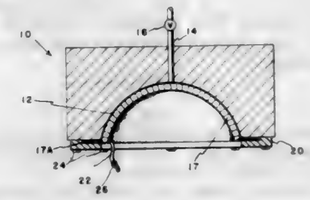
A process for making permeable ceramic supports for semipermeable membranes in reverse osmosis apparatus by combining 20–50 parts ball clay, up to 25 parts plastic fire clay, 10–15 parts powdered flux, 35–45 parts ground walnut shells (−60 mesh +200 mesh) with 12–25% water, forming the support shape by extrusion, drying, and firing the support to 1900° F.–2200° F. to burn out the walnut shells and form a ceramic bond. To prevent cracking the firing step is accomplished by slowly heating to 400–1500° F. to degas and decarbonize the body and raising the temperature to 1900–2200° F. to sinter the body into a strong unitary structure.

3,442,996

METHOD FOR FORMING THREAD CONNECTED DUAL WALL INFLATABLE FABRIC INTO COMPOUND CURVATURES

Richard R. Fisher, Akron, and Harry T. Kifor and Donald B. Tschudy, Canton, Ohio, assignors to Goodyear Aerospace Corporation, Akron, Ohio, a corporation of Delaware

Filed July 15, 1966, Ser. No. 565,635
Int. Cl. B29c *17/04*
U.S. Cl. 264—89 **6 Claims**



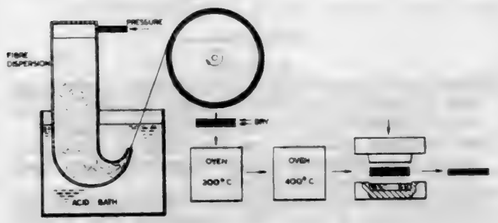
A method is provided for forming dual wall thread connected inflatable fabric into compound curvatures with a wrinkle free surface configuration. The process involves pressurizing the fabric to slightly above ambient pressure, heating the fabric above the deformation temperature thereof, positively forming the fabric at such heated temperature to the desired shape, cooling below the deformation temperature, and releasing the positive forming action. The process is characterized by maintaining the pressure in the fabric as formed at substantially the same pressure above ambient during all steps of the process.

3,442,997

PROCESSES FOR ORIENTING FIBRES

Noel James Parratt, Loughton, England, assignor to Minister of Technology in the Government of the United Kingdom, London, England

Filed Sept. 29, 1965, Ser. No. 491,283
Claims priority, application Great Britain, Oct. 1, 1964, 39,954/64
Int. Cl. D01d *11/06*
U.S. Cl. 264—108 **9 Claims**



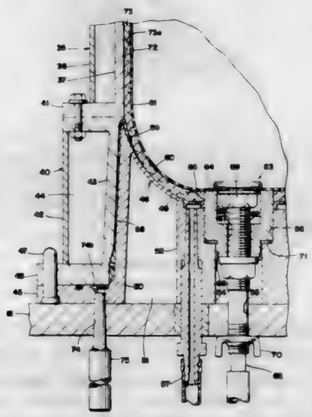
Production of aligned fibres, for use as fibre-reinforced composite materials by suspending fibres having a length between about 10 mm. and 10^{-3} mm. in a viscous liquid medium, extruding the suspension through an orifice whereby the fibres are aligned in passing through the orifice, treating the extruded dispersion to form the liquid medium into a solid carrier for the aligned fibres, and removing the solid carrier from the fibres while maintaining their alignment.

3,442,998

METHOD FOR MAKING IMPREGNATED FIBER ARTICLES

Arthur J. Wiltshire, Cleveland, Ohio, assignor to Structural Fibers, Inc., Chardon, Ohio, a corporation of Ohio

Original application Apr. 28, 1965, Ser. No. 451,427, now Patent No. 3,368,239, dated Feb. 13, 1968. Divided and this application Oct. 17, 1967, Ser. No. 683,067
Int. Cl. B29d *31/00*
U.S. Cl. 264—120 **2 Claims**



A method of making a molded resin article having a continuous wall. The article is formed by providing a preformed matting section which is precompressed by compressing a hollow body portion between a flexible membrane and a rigid mold and by compressing a foot portion to a uniform wall thickness between matching rigid mold faces by telescopic movement therebetween. A settable liquid resin is then ejected into the compressed form to permeate the form and express air therefrom.

3,442,999

PROCESS FOR THE PRODUCTION OF CHIPBOARDS

Hans-Joachim König, Wolfgang Bodenstedt, and Ulrich Gotsmann, Frankfurt am Main, Germany, assignors to Cassella Farbwerke Mainkur Aktiengesellschaft, Frankfurt am Main-Fechenheim, Germany, a company of Germany

No Drawing. Filed July 19, 1966, Ser. No. 566,195
Claims priority, application Germany, Aug. 3, 1965, C 36,561
Int. Cl. B29j *5/00*
U.S. Cl. 264—128 **2 Claims**

Chipboard production by separately spraying wood chips with an aqueous dispersion of melamine and an aqueous formaldehyde solution and consolidating said sprayed chips under heat and pressure.

3,443,000

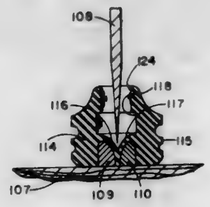
METHOD OF MAKING A BABY NIPPLE VALVE

Roger E. Travis, 18 Hancock Road, Hingham, Mass. 02043

Filed Jan. 16, 1967, Ser. No. 609,635
Int. Cl. A61j *11/00*
U.S. Cl. 264—154 **3 Claims**

A soft, resilient rubber core, positioned in the normally open bottom of a baby nipple, has a bore within which

two abutting upwardly thrusting flexible lips extend from the wall to provide an imperfect, sensitive one-way valve orifice. The core is made by molding with the lip pre-



cursors forming an unbroken bridge, temporarily inverting fitted rigid members into the upper cavities of the bore and slitting the bridge with a sharp instrument applied from the other side.

3,443,001

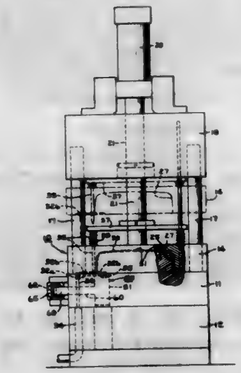
METHOD AND MECHANISM FOR SEVERING THE GATE IN INJECTION-TYPE MOLDS

Frank M. Adair and Emil A. De Boo, Indianapolis, Ind., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Feb. 17, 1966, Ser. No. 528,215

Int. Cl. B29f *1/05*

U.S. Cl. 264—161 **11 Claims**



The gate formed in an injection-type mold is severed by effecting relative movement between only a short longitudinal segment of the runner and both the remainder of the runner and the associated molded article. Movement imparted to the runner segment is lateral relative to its original position and of sufficient magnitude to effect the complete severance of a gate-defining end thereof from the molded article, while the remainder of the runner segment is merely offset from the immediately adjacent and stationary portion of the runner previously both aligned and integral therewith. Subsequent cooling results in the offset segment and those areas of the stationary runner remaining in contact therewith healing together sufficiently to allow the entire runner and associated sprue to be ejected from the mold as an integral unit.

3,443,002

PROCESS FOR PRODUCING CRIMPED FILAMENTS

Taiichi Murao, Shigeo Katsuyama, and Toshio Sasaki, Nobeoka-shi, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan

No Drawing. Filed Oct. 26, 1966, Ser. No. 589,488

Int. Cl. D02j *1/22;* **D01d** *5/08, 5/22*

U.S. Cl. 264—168 **6 Claims**

A process for producing a crimped filament in which there are melt conjugate-spun, first and second constituents, to form a composite filament, the first constituent consisting essentially of a polyamide selected from the group consisting of nylon 6, nylon 66 and nylon 610, and the second constituent consisting essentially of the same polyamide with 1 to 10% by weight of glycerin incorporated therein. The resulting filament is cooled and stretched and thereafter treated with water to develop crimps therein.

3,443,003

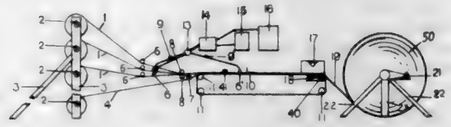
METHOD AND APPARATUS FOR MAKING REINFORCED AND NON-REINFORCED ELASTOMERIC SHEET MATERIAL

Grant D. Anderson, 368 West 2725 South, Bountiful, Utah 84010

Filed Jan. 29, 1965, Ser. No. 429,024

Int. Cl. B29d *29/00;* **B32b** *31/30*

U.S. Cl. 264—171 **9 Claims**



A conveyor belt-producing apparatus and method, the apparatus comprising (a) a table which carries a portion of a selectively movable, endless form comprising hingedly joined slats and (b) mixing and dispensing structure adapted to place mixed elastomeric components upon at least one continuous length of fabric reinforcement as the fabric moves with the table surface. A microwave curing oven adjacent the table solidifies the liquid elastomer so that it can be collected on a take-up mandrel. The method comprises continuously moving fabric with the movable forms comprising the table surface, depositing liquid elastomeric material upon the fabric within the forms, solidifying and collecting the finished conveyor belt.

3,443,004

INJECTABLE SOLUTION CONTAINING 6-CHLORO- OR 6-TRIFLUOROMETHYL-7-SULFAMYL - 1,2,4-BENZOTHIODIAZINE-1,1-DIOXIDE DIURETIC

Leon Lachman, Millburn, and Carl Richard Rehm, Fanwood, N.J., assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 262,343, Mar. 4, 1963. This application Apr. 8, 1965, Ser. No. 446,727

Int. Cl. A61k *27/00, 9/00*

U.S. Cl. 424—228 **7 Claims**

1. An injectable aqueous solution comprising an effective amount up to about 0.1 gram of a 6-chloro- or 6-trifluoromethyl - 7 - sulfamyl-1,2,4-benzothiadiazine-1,1-dioxide diuretic, about 0.002 to about 0.050 gram 4-amino-6-chloro-m-benzenedisulfonamide, and about 10 to about 40 percent by weight of at least one N-lower alkylamide or N,N-di-lower alkylamide of a lower aliphatic or benzene mono- or dicarboxylic acid, per milliliter of solution buffered to pH about 4 to 7.

3,443,005

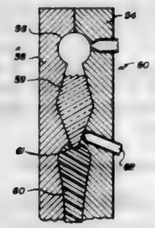
PLURAL PART MOLDING

Arthur R. Braun, 209 E. Mildred, Cary, Ill. 60013

Filed Oct. 24, 1965, Ser. No. 504,615

Int. Cl. B29c *9/00*

U.S. Cl. 264—245 **3 Claims**



Molding apparatus and method for making a plastic article formed of plural parts wherein a mold cavity is partitioned into cavities for said plural parts and plastic is injected into each of said cavities.

3,443,006

METHOD OF MAKING GASKETED MOUNTING CUPS FOR PRESSURIZED AEROSOL CONTAINERS

Charles W. Simons, Bedford, and Joel A. Gribens, Methuen, Mass., assignors to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut

Filed Mar. 9, 1966, Ser. No. 533,001

Int. Cl. B29c *27/22*

U.S. Cl. 264—249 **9 Claims**



1. A method of applying a gasket to an aerosol mounting cup comprising a top panel, a skirt depending from the periphery of the top panel and an annular channel extending outwardly from the bottom edge of the skirt which comprises swelling a band of gasketing material having a diameter slightly smaller than the outside diameter of the skirt of the cup to a diameter greater than the outside diameter of the skirt but less than the inside diameter of the annular channel of the cup by immersing the band in a liquid swelling agent which is a non-solvent for the gasketing material, positioning the swollen band of material over the outside surface of the skirt so that its lower edge overlies the juncture where the skirt and channel merge, and removing the liquid swelling agent from the band of gasketing material to bring the band into frictional engagement with the skirt.

3,443,007

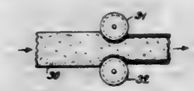
PROCESS FOR PRODUCING A SMOOTH IMPERVIOUS SKIN ON THE SURFACE OF A RESILIENT SHEET OF FOAMED PLASTIC

Edgar E. Hardy, New Martinsville, W. Va., assignor to Mobay Chemical Company, St. Louis, Mo., a corporation of Delaware

Continuation of application Ser. No. 588,053, May 29, 1956. This application Feb. 21, 1967, Ser. No. 617,718

Int. Cl. B29d *27/00, 9/02*

U.S. Cl. 264—321 **6 Claims**



A dense after-formed skin of substantial thickness is produced on at least one surface of a cured preformed polyurethane foam by subjecting the surface thereof to pressure and elevated temperatures as defined hereinafter by contact with a heated metal surface or a plurality of pairs of heated metal rollers or differentially driven rollers with a wiping action.

3,443,008

METHOD OF REFINISHING THE SURFACES OF A PLASTIC ARTICLE

Walter S. Boyhan, Laurelton, Rudolf Mayer, Roslyn Heights, and Arthur H. Stabell, Seaford, N.Y., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

No Drawing. Filed Oct. 23, 1965, Ser. No. 504,207

Int. Cl. B29c *25/00*

U.S. Cl. 264—341 **16 Claims**

The surfaces of an acrylonitrile-butadiene-styrene (ABS) article are refinished by penetrating a quantity of solvent through an oxide coating thereon to dissolve a portion of the underlying plastic and thereby remove the oxide coating. An additional quantity of solvent, now containing dissolved plastic, is absorbed into the newly uncovered surfaces which are then dried to evaporate the solvent and to redeposit the dissolved plastic. The article is then heat treated to relieve stress forces developed in the surfaces during drying.

3,443,009

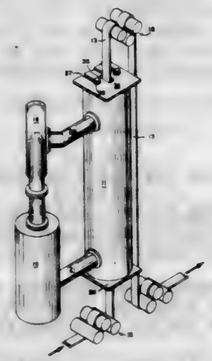
PROCESS FOR RELAXING FILAMENTARY MATERIAL

Lester Daniel Chirgwin, Jr., Stamford, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

Filed Aug. 17, 1964, Ser. No. 389,833

Int. Cl. D02j *13/00*

U.S. Cl. 264—342 **9 Claims**



A method of continuously relaxing filamentary material, comprising continuously exposing, for a time and

at a temperature sufficient for said filamentary material to relax but not sufficient to materially degrade said filamentary material, an upwardly moving endless length of said filamentary material to turbulent flow of heated gas moving generally upwardly in a confined zone at a velocity sufficient to produce adequate turbulence for uniform and effective heat transfer but less than that at which said filamentary material is seriously disarranged or substantially elongated.

3,443,010

COMPOSITION AND METHODS FOR RENDERING ABSORBENT MATERIALS FUNGICIDAL COMPRISING AN AQUEOUS SOLUTION OF BORAX/AND THE BIS(TRI-N-PROPYLTIN) DIAMMONIUM CHLORIDE OF A TRI-POLYOXYETHYLATED N-ALKYL TRIMETHYLENE DIAMINE

Michael E. Lombardo, Nanuet, N.Y., assignor to Stapling Machines Co., Rockaway, N.J., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 422,033, Dec. 29, 1964. This application Oct. 23, 1965, Ser. No. 504,112

Int. Cl. A01m *9/20;* **B27j** *3/34*

U.S. Cl. 424—148 **3 Claims**

Method for rendering absorbent materials such as wood fungicidal by impregnation with an aqueous solution of borax and the bis(tri-n-propyltin) diammonium chloride of a tri-polyoxyethylated N-alkyltrimethylene diamine.

3,443,011

O-ALKYL S-(SUBSTITUTED BENZYL) BENZENE THIOPHOSPHONATES FOR CONTROLLING FUNGI

Noboru Shindo, Yasukazu Ura, and Miyako Mori, Tokyo, and Mitsuru Hayakawa, Omiya, and Kunihiro Ueda, Tokyo, Japan, assignors to Nissan Kagaku Kogyo Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

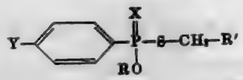
No Drawing. Filed Mar. 27, 1967, Ser. No. 625,974

Claims priority, application Japan, Mar. 31, 1966, 41/19,570; Oct. 1, 1966, 41/64,379

Int. Cl. A01n *9/36;* **A61k** *27/00*

U.S. Cl. 424—222 **7 Claims**

The present invention relates to the process of using an organic phosphorous fungicidal composition characterized by containing as its active ingredient an organic phosphorous compound express by the following general formula:



where:

R—low alkyl radical,

R'—phenyl radical or phenyl radical substituted by low alkyl radical,

X—oxygen or sulfur atom, and

Y—chlorine or methyl radical or hydrogen atom, but when Y represents hydrogen atom, R' will be a phenyl radical substituted by a low alkyl radical;

as a fungicide and to prevent rice blast.

3,443,012

PESTICIDAL USES OF THIOSUBSTITUTED PHENOLS

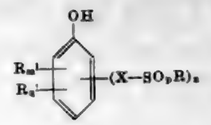
Edward D. Weil, Lewiston, and Hans L. Schlichting, Grand Island, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Original application Mar. 4, 1963, Ser. No. 262,375, now Patent No. 3,336,393, dated Aug. 15, 1967. Divided and this application Dec. 2, 1966, Ser. No. 619,085

Int. Cl. A01n *9/36;* **C07f** *9/02*

U.S. Cl. 424—225 **9 Claims**

A method for the control of undesirable pests, such as fungi, mites, beetles and flies, comprises applying a toxic amount of a particular type of thiosubstituted phenol to the locus of the pest. The thiophenol employed is of the formula:



In this formula, X is alkylene of 2 to 8 carbon atoms; R^1 is lower alkyl; R^2 is halogen; R is either hydrogen, hydrocarbyl or acyl; and n is 1 or 2; m is from 0 to 4, inclusive; q is from 0 to 5-(m+n), inclusive; p is from 0 to 2, inclusive; p is 0 when R is other than hydrocarbyl; and the sulfur atom is separated from the phenol nucleus by at least two carbon atoms.

ERRATUM

For Class 424—228 see:
Patent No. 3,443,004

3,443,013

METHOD OF CONTROLLING PESTS WITH MERCURY COMPOUNDS

Saul R. Buc, deceased, late of Easton, Pa., by Dolores M. Buc, administratrix, Easton, Pa., and Fred E. Woodward, Watchung, Plainfield, N.J., assignors to GAF Corporation, a corporation of Delaware

No Drawing. Filed Feb. 24, 1964, Ser. No. 347,336

Int. Cl. A01n *9/38*

U.S. Cl. 424—245 **27 Claims**

A method of controlling pests such as insects, bacteria and fungicide, and a composition therefor containing an effective amount of organo-mercury compound. Such compounds are characterized by the presence of one or more nitrogen atoms within the molecule.

3,443,014

1,3-BENZOXAZINE - 2:4 - DIONE AND PHARMACOLOGICALLY ACCEPTABLE ALKALI METAL SALTS THEREOF AS ANALGESICS

Leslie Frederick Wiggins, Wargrave, England, assignor to Aspro-Nicholas Limited, Slough, England, a British company

No Drawing. Filed July 21, 1961, Ser. No. 125,647

Int. Cl. A61k *27/00*

U.S. Cl. 424—248 **7 Claims**

1. A method of obtaining an analgesic effect which comprises administering an analgesically effective nontoxic quantity of a compound selected from the group consisting of 1:3-benzoxazine-2:4-dione and pharmacologically acceptable alkali metal salts thereof.

ERRATUM

For Class 424—273 see:
Patent No. 3,442,899

3,443,015

NEMATOCIDAL METHODS EMPLOYING 2-PERFLUOROALKYLBENZIMIDAZOLES

Quentin F. Soper, Indianapolis, Ind., assignor to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed May 29, 1967, Ser. No. 642,152

Int. Cl. A01n *9/22*

U.S. Cl. 424—273 **4 Claims**

2-perfluoroalkylbenzimidazoles are used as nematocidal agents and soil fumigants.

3,443,016

CONTROL OF PATHOGENIC ORGANISMS WITH HALOGENATED PHENOXYCYCLOPENTENONES

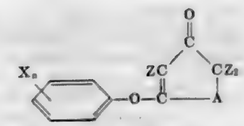
Edward D. Weil, Lewiston, and Jerome Linder, Niagara Falls, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Original application Oct. 29, 1962, Ser. No. 233,873, now Patent No. 3,347,929. Divided and this application Dec. 2, 1966, Ser. No. 635,929

Int. Cl. A01n *9/24;* **C07c** *49/76*

U.S. Cl. 424—331 **3 Claims**

Halogenated phenoxycyclopentenones such as those of the formula



wherein Z is either bromine or chlorine, A is a dibromo- or a dichloromethylene group or a carbonyl group, X is either halogen, nitro, alkyl, phenyl, alkoxy, or carboxy (or when combined with the phenyl ring illustrated, forms a naphthyl group), and n is from 0 to 5, are employed as pesticides, especially to destroy fungi on plants and bacteria.

ELECTRICAL

3,443,017

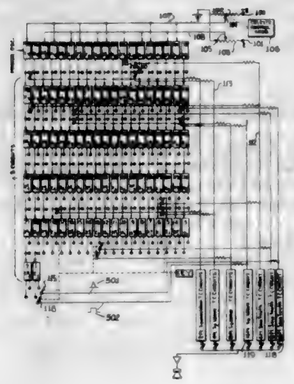
ELECTRONIC ORGAN SYSTEM

Edward M. Jones, Cincinnati, Ohio, assignor to D. H. Baldwin Company, Cincinnati, Ohio, a corporation of Ohio

Filed Dec. 2, 1965, Ser. No. 511,037

Int. Cl. G10h *1/00*

U.S. Cl. 84—1.01 **12 Claims**



An electronic organ employing an array of nineteen master oscillators from each of which are derived tone signals by means of divide-by-three circuits arranged to provide both square and sawtooth waves.

3,443,018

GUITARS OR LIKE STRINGED MUSICAL INSTRUMENTS

Leo Krebs, 4138 Lankershim Blvd., North Hollywood, Calif. 91602

Filed June 10, 1965, Ser. No. 462,834

Int. Cl. G10d *1/08;* **G10h** *3/00*

U.S. Cl. 84—1.16 **3 Claims**

Improvements in electrical stringed musical instruments such as guitars are disclosed including a novel torsion bar in the neck with vernier adjustment to stabilize the neck and strings against warpage and twist, conductive rubber tone, vibrato and volume adjustment means and tactile sensing elements in the neck in positional relation to the frets of such nature that an instrumentalist can create a variety of tonal and volume effects, locate specific frets



and so forth without it being necessary to look at the fret bar.

3,443,019

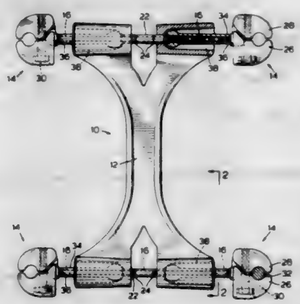
SPACER DAMPER

Robert C. Walker, Cooksville, Ontario, and Gordon J. Clarke, Bramalea, Ontario, Canada, assignors to Lacol Industries Limited, Newmarket, Ontario, Canada

Continuation-in-part of application Ser. No. 666,816, Sept. 11, 1967. This application June 20, 1968, Ser. No. 738,646

Int. Cl. H02g *7/14, 7/12*

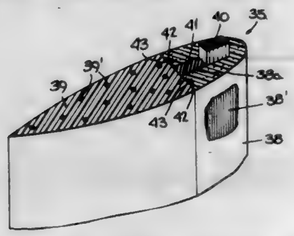
U.S. Cl. 174—42 **4 Claims**



The invention relates to a spacer damper for bundle conductors of an electricity transmission line wherein the conductors are held in clamps at the end of resilient wires, which are adapted to flex under the influence of aeolian vibration whereby in use the energy of the aeolian vibration is dissipated in the flexing of the arms and in

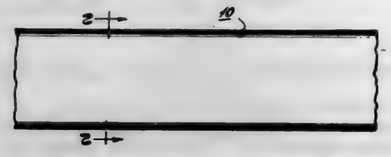
the flexing of the conductor itself due to the effective weight of the spacer damper at the mounting point of the arms on the frame of the spacer damper.

3,443,020
FAIRED CABLE
Henry H. Loshigian, Elmhurst, N.Y., assignor to Uniroyal, Inc., New York, N.Y., a corporation of New Jersey
Filed Nov. 22, 1967, Ser. No. 685,075
Int. Cl. H01b 7/12
U.S. Cl. 174—101.5 15 Claims



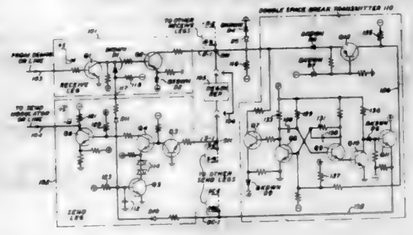
A continuous, longitudinally unsectioned, faired underwater guidance cable of substantial length for submerged detection and exploration devices is disclosed, together with a method of manufacturing such cable, and the structure and method of assembly of end couplings therefor. The cable body has the cross-sectional contours of an airfoil that is symmetric with respect to its chord line and is designed so that its shear center is located in the immediate vicinity of the leading edge of the cable and a considerably greater distance forward of its center of pressure than the centroid of the strength member section, and that its center of gravity is located approximately at or slightly forward of its center of pressure, and that it has a low drag coefficient and low torsional rigidity. The load-bearing relatively less flexible, resin and filament forward strength member preferably is generally channel-like or U-shaped in cross-section and houses the non-load-bearing electrical conducting and insulating elements of the cable, and a non-load-bearing relatively more flexible, isotactic foam aft or tail member which is generally triangularly shaped in cross-section, is formed into an integral entity with the strength member by a continuous sequence of intermittent shaping and molding operations in respective portions of an assembly line-like apparatus to build successive cable portions up step by step.

3,443,021
SUPERCONDUCTING RIBBON
Edward Robert Schrader, Highstown, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Apr. 28, 1967, Ser. No. 634,675
Int. Cl. H01b 7/34, 17/16
U.S. Cl. 174—126 13 Claims



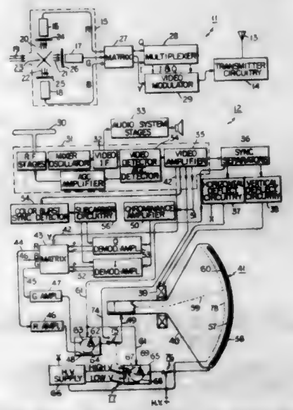
A superconducting ribbon has a flexible base of normal metal. A superconductive material is on the base. The superconductive material is continuous in one direction on the base and discontinuous in the other direction to provide shunt paths. A normal metal is coated on the superconductive material.

3,443,022
HUB COUPLING SYSTEM
Paul Benowitz and Heinz Kahlbrock, Brooklyn, N.Y., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 2, 1965, Ser. No. 476,515
Int. Cl. H01l 15/00; H03k 5/20
U.S. Cl. 178—2 8 Claims



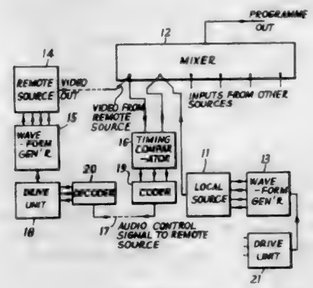
Subscriber data lines are interconnected by way of a common hub. To preclude the recirculation of signals from the subscriber receiving leg back to the sending leg, each subscriber is provided with a control circuit which blocks the retransmission of signals from the hub to the sending leg while data signals are being received from the subscriber. To advise all subscribers that the sending subscriber is being interrupted by another subscriber, a "double space" detector common to all the subscribers detects when two or more send into the hub and in response thereto unblocks all the sending legs and sends a time "break" signal into the hub and therefore to all sending legs.

3,443,023
TWO-COLOR LINE-SEQUENTIAL COLOR TELEVISION
Dexter P. Cooper, Jr., Lexington, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Feb. 7, 1966, Ser. No. 525,761
Int. Cl. H04n 1/46, 9/12
U.S. Cl. 178—5.2 26 Claims



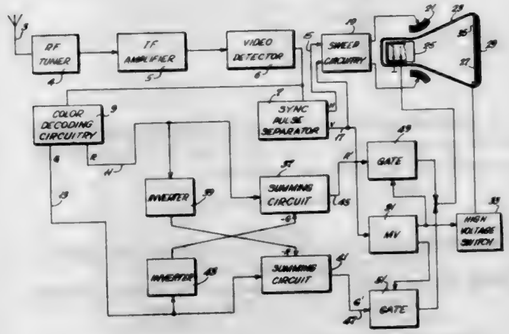
A two-color television system utilizing a ternary interlaced line-sequential scanning arrangement. The lines are traced in a sequence of two lines in one color followed by one line in the second color. For instance, in a red-white system, the lines may be traced in a red-red-white sequence. The ternary sequence may be reversed for compatible black-and-white reproduction to trace the lines in a white-white-red sequence.

3,443,024
SYNCHRONISING OF PERIODIC SIGNALS
Cyril Joseph Allen, Stamford, John Llewelyn Bliss, London, and Ian David Balfour Millar, Wembley, England, assignors to The Marconi Company Limited and Standard Telephones & Cables Limited, Strand, London, England
Filed Feb. 28, 1966, Ser. No. 530,440
Claims priority, application Great Britain, Mar. 5, 1965, 9,540/65
Int. Cl. H04n 1/46, 9/00
U.S. Cl. 178—5.2 7 Claims



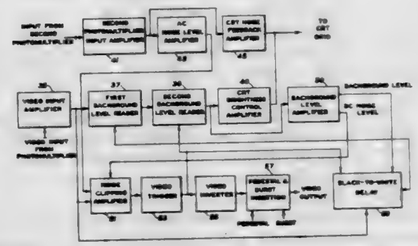
In known telephone slave locking systems the oscillator at a remote station feeding a local station is subject to feedback control from the local station to maintain synchronism between the synchronising waveform available at the local station and the synchronising waveform received at the local station from the remote station. In this invention the phase error at the local station is quantised and the only control signal fed back to the remote station is a code signal calling for a frequency shift at the oscillator at the remote station.

3,443,025
COLOR TELEVISION SYSTEM EMPLOYING SUPERIMPOSED RED AND WHITE IMAGES
Nathan Gold, Brookline, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Feb. 4, 1966, Ser. No. 525,202
Int. Cl. H04n 5/38, 5/49, 9/02
U.S. Cl. 178—5.4 13 Claims



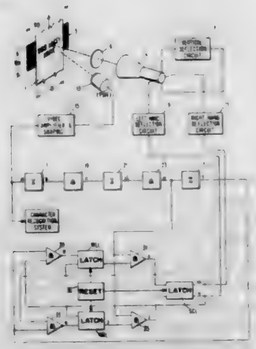
This specification discloses a color television system which produces a full color image of the televised scene by superimposed red and white images. The red image is produced in accordance with a modified red video signal obtained by adding a small amount of inverted green video to the red video. The white image is produced in accordance with a modified green video signal which is obtained by adding a small amount of inverted red video to the green video.

3,443,026
BACKGROUND COMPENSATOR FOR FACSIMILE COMMUNICATION SYSTEM
Stephen E. Townsend, Rochester, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 329,640, Dec. 11, 1963. This application June 7, 1965, Ser. No. 461,693
Int. Cl. H04n 5/38, 7/00; G01j 1/32
U.S. Cl. 178—7.2 3 Claims



A facsimile transmitter for transmitting signals representative of intelligence on a document including means for adjusting the intensity of the light source according to changes in the documents background and additional means compensating for the high frequency fluctuations in the intensity of the light source.

3,443,027
CONTROL SYSTEM FOR FLYING SPOT SCANNERS
David E. Dohler, Endicott, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Nov. 26, 1965, Ser. No. 509,939
Int. Cl. H04n 5/38
U.S. Cl. 178—7.2 5 Claims



A flying spot scanner for scanning a document having a background area adjacent the document and including means for detecting when the scanning beam leaves the document and enters the background area and reversing the direction of the scanning beam.

3,443,028
MODULATED SCANNING SYSTEM

Thomas J. Pavlik, Elk Grove Village, Ill., assignor to A. B. Dick Company, Niles, Ill., a corporation of Illinois

Filed Oct. 13, 1964, Ser. No. 403,475
Int. Cl. H04n *5/38*
U.S. Cl. 178—7.2 **5 Claims**

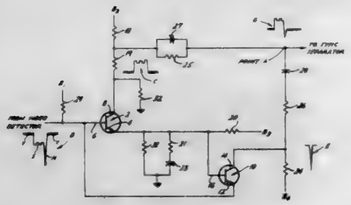


A facsimile scanning system, comprising a cathode ray tube having means for producing an electron beam and a fluorescent screen upon which the beam impinges to produce a spot of light, an optical system for focusing the light from said cathode ray tube on the object to be scanned, means for deflecting the electron beam of said tube along a scanning line, means for modulating the intensity of the light output from said tube to break up said scanning line into segments, a photoelectric device for receiving the light from said object and producing corresponding video signals, and means for differentiating said video signals to produce an output signal which reproduces said object while minimizing distortion due to the phosphor decay time of said fluorescent screen. The means for modulating the intensity of the light output from the cathode ray tube may comprise means for modulating the intensity of the electron beam, or a ruled screen disposed between the cathode ray tube and the object to be scanned. The screen comprises relatively opaque lines alternating with relatively transparent areas extending transversely to the scanning line.

3,443,029
NOISE SUPPRESSION CIRCUIT

Paul G. Wolfe, Oreland, Pa., assignor to Philco-Ford Corporation, a corporation of Delaware

Filed June 15, 1966, Ser. No. 557,747
Int. Cl. H04n *3/16, 5/38;* **H03b** *1/04*
U.S. Cl. 178—7.3 **6 Claims**

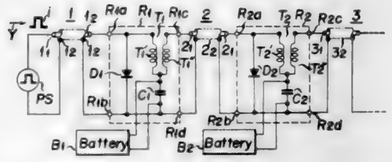


A noise suppression circuit wherein the control and common electrodes of a noise-gated amplifier are connected respectively to the common and control electrodes of another amplifier to which a noisy signal is supplied. Due to these connections, biasing of the other amplifier to a desired threshold conduction voltage automatically biases the noise-gated amplifier so that it has the proper threshold conduction voltage. The threshold conduction voltage of the noise-gated amplifier can be modified by connecting one or more diodes between the common electrode of the other amplifier and the control electrode of the noise-gated amplifier. The output signals of the two amplifiers are summed to produce a composite output signal having inverted noise components which can be removed easily from the composite output signal.

3,443,030
PULSE TRANSMISSION CABLES

Risaburo Sato and Kansei Iwata, Sendai-shi, Japan, assignors to Nippon Telegraph and Telephone Public Corporation, Tokyo, Japan, a corporation of Japan

Filed May 10, 1965, Ser. No. 454,533
Claims priority, application Japan, May 13, 1964, 39/28,701, 39/28,702; May 30, 1964, 39/30,410
Int. Cl. H04l *25/66*
U.S. Cl. 178—70 **4 Claims**

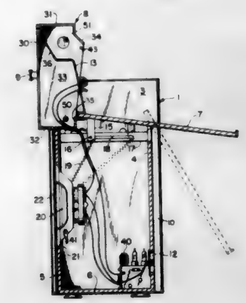


A pulse transmission cable including a plurality of repeaters, each including a tunnel diode as its principal element, shunted across the cable at spaced points therealong. The diodes are biased outside the region of negative resistance so that the diodes function as resistors in response to pulses of amplitude below a predetermined value and function as amplifiers in response to pulses of amplitude exceeding said predetermined value.

3,443,031
PORTABLE COMBINATION PUBLIC-ADDRESS SYSTEM AND LECTERN

Fred C. Bolick, Jr., Atlanta, Ga., assignor to Lanier Electronics Laboratory, Atlanta, Ga., a corporation of Georgia

Filed Nov. 19, 1965, Ser. No. 508,749
Int. Cl. H05k *5/02*
U.S. Cl. 179—1 **8 Claims**



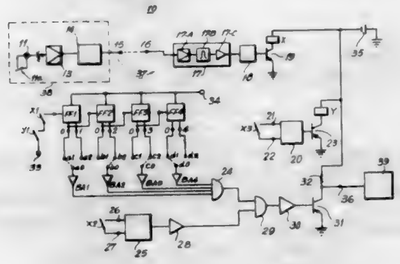
A portable lectern with a working surface held in place by its placement into a slot that runs the length of the moveable top of the lectern enclosure.

3,443,032
CONTROL SYSTEM USING CONTINUOUS TONE AND PULSED CODE SIGNALS

Toshio Mitsui, Tokyo, Japan, assignor to Nippon Electric Company Limited, Tokyo, Japan

Filed June 17, 1966, Ser. No. 558,393
Claims priority, application Japan, June 19, 1965, 40/36,244
Int. Cl. H04m *11/06, 1/70, 3/16*
U.S. Cl. 179—2 **8 Claims**

1. Means capable of controlling equipment is response to receipt of appropriate tone and pulse controlling signals transmitted from a remote location through a communications medium such as a telephone circuit comprising:
first means coupled to the media and being energized responsive to receipt of a tone frequency signal lying within a narrow frequency band;
timing means being turned "ON" upon energization of said first means and including means to generate a first "ON" signal at its output when the duration of energization of said first means is maintained for a predetermined time period;
multistage register means;
second means coupled to said first means being energized by said first means to couple the input of said register means to the communications media;

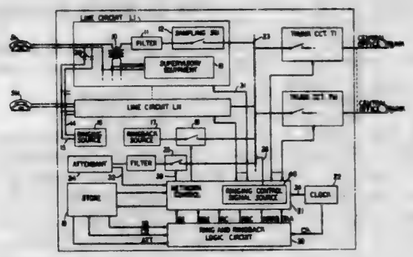


said second means including a plurality of connected flip-flops arranged to develop a count in said register responsive to the pulse controlling signals;
third gating means having a plurality of inputs selectively coupled to output terminals of said register means and being enabled to generate a second "ON" signal upon receipt of a predetermined number of pulses;
an output switch;
fourth gating means having inputs coupled to the outputs of said third gating means and said timing means for operating the output switch when said timing means and said third gating means both produce "ON" signals.

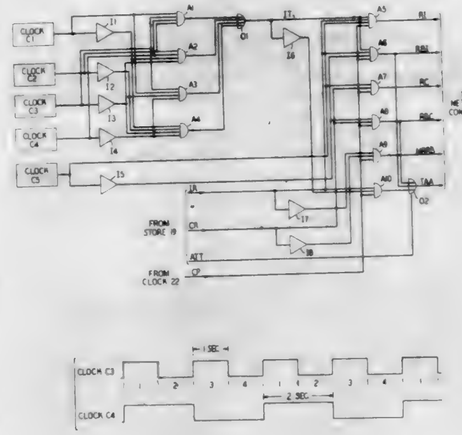
3,443,033
RINGING ARRANGEMENT FOR TIME DIVISION TELEPHONE SYSTEMS

Ronald A. Louis, Red Bank, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Oct. 31, 1963, Ser. No. 320,378
Int. Cl. H01J *3/00;* **H04m** *3/02*
U.S. Cl. 179—15 **11 Claims**



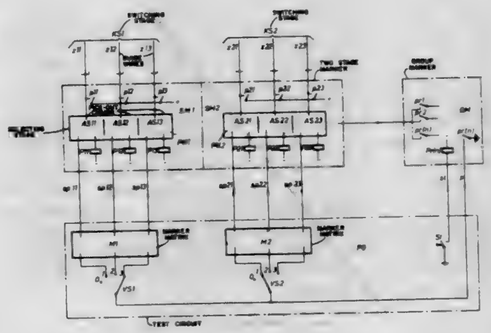
Ringing arrangements for a time division telephone system are described which prevent overloading of a common ringing source. The time slots of the time division system are divided into a predetermined number of groups. Stations served by time slots of any one group are rung during a corresponding interval of a repeated sequence of time intervals. Immediate ringing independent of the time interval sequence avoids delay in signaling called stations. After the immediate ring interval, ringing signals in accordance with the repeated sequence are applied.



3,443,034
TEST CIRCUIT FOR TELEPHONE SWITCHING NETWORK HAVING COMMON CONTROLS

Hilmar Schönemeyer, Ditzingen, and Norbert Kollermann, Sandweg, Germany, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

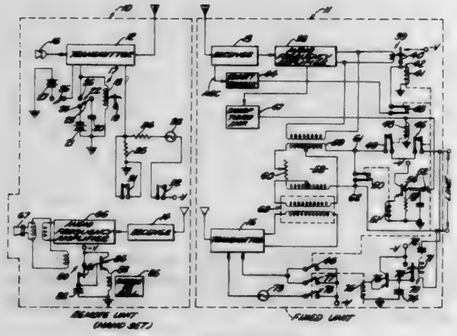
Filed July 13, 1965, Ser. No. 471,520
Claims priority, application Germany, July 23, 1964, St 22,448
Int. Cl. H04m *3/00*
U.S. Cl. 179—18 **4 Claims**



The invention provides a test circuit for a telephone switching network having common controls. The test circuit includes a switch and a matrix interposed between a control point and the common controls. When the switch is set to a particular position, the matrix fans out a busy signal to all except one of the path selection leads available to the common controls. This forces the common controls to select the non-busy marked desired

path. These synthetic busy markings have no effect upon existing paths which are already marked busy—a second busy potential applied in parallel with a first busy potential does not cause any change.

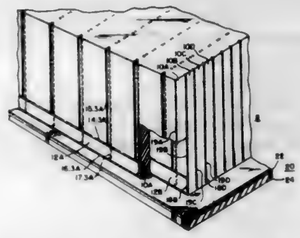
3,443,035
WIRELESS EXTENSION TELEPHONE
Thomas E. McCay, Norman, Okla., assignor, by mesne assignments, to Pioneer Mortgage and Investment Company, Inc., Oklahoma City, Okla., a corporation of Oklahoma
Filed May 21, 1965, Ser. No. 457,773
Int. Cl. H04m *5/00;* **H04b** *1/38, 7/00*
U.S. Cl. 179—41 **4 Claims**



A wireless extension telephone system having a fixed unit directly connected to the conventional subscriber line and a remote unit operatively associated with the fixed unit by means of radio transmission and reception. The fixed unit includes a radio transmitter operating on the same carrier frequency as the receiver in the remote unit and a radio receiver operating on a second carrier frequency which is the same as the transmitter in the remote unit. Line seizure is accomplished at the fixed unit by sending a radio frequency signal from the remote unit wherein this signal is coded by a tone pulse and wherein the ratio receiver at the fixed unit is provided with a decoding means responsive to the tone pulse for energizing a line seizure relay, the line seizure relay being thereafter maintained in an energized condition by means of presence of carrier; dialing is accomplished by sending a series of coded pulses on the carrier from the remote unit and by means of a second decoding means at the fixed unit which is adapted to perform the normal dialing functions on the line; ringing is accomplished by means of a tone generator at the fixed unit and an alarm relay which is responsive to ringing signals on the line to actuate the tone generator and to superimpose a code on the carrier from the fixed unit, and by means of a decoding means at the remote unit which is adapted to receive this code and actuate an alarm means.

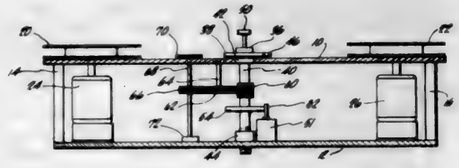
3,443,036
HALL EFFECT MAGNETIC TAPE SCANNING DEVICE
Joachim A. Maass, Belmar, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed Apr. 6, 1965, Ser. No. 446,132
Int. Cl. G11b *5/38*
U.S. Cl. 179—100.2 **3 Claims**

This invention relates to Hall effect devices and particularly to an elongated, multiple-unit, Hall effect device positioned along one edge of a flat substrate, that can be combined with other, similar units in a stack with their



one edges in a common plane to sample the magnetic data on a corresponding surface.

3,443,037
MULTITRACK TAPE RECORDER WITH MECHANICAL TRACK-CHANGE SYSTEM
Bert H. Dann, Altadena, Calif., assignor, by mesne assignments, to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Oct. 23, 1965, Ser. No. 504,040
Int. Cl. G11b *5/56, 5/28*
U.S. Cl. 179—100.2 **8 Claims**

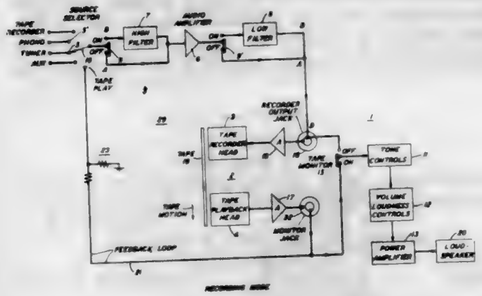


There is described a multichannel tape recorder in which a single head is advanced from channel to channel by mounting the head on a threaded shaft. Rotation of the shaft through one revolution moves the head through a circle, causing the head to move out of contact and back into contact with the tape while advancing across the tape from one channel to the next.

3,443,038
RECORDING SYSTEM WITH SIGNAL RETURN CIRCUIT FOR ALLOWING THE USE OF CERTAIN FILTERS AND AMPLIFIERS IN BOTH RECORD AND REPRODUCE MODES
Fritz L. Mergner, Forest Hills, N.Y., assignor to Flaber Radio Corporation, Long Island City, N.Y., a corporation of New York
Filed Feb. 1, 1962, Ser. No. 170,341
Int. Cl. G11b *5/44, 5/12, 5/02*
U.S. Cl. 179—100.2 **9 Claims**

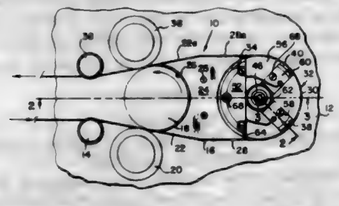
1. The combination with a tape recorder including a recording head, a playback head, means for moving a tape past the heads, each of the heads having its own amplifier, means for supplying a signal to the recording head, and a transducer; of a filter-amplifying circuit, a feedback circuit, means operative when the tape recorder is set for recording to connect the signal supplying means to feed its signal through the filter-amplifying circuit and the recording head amplifier to the recording head while making the feedback circuit ineffective, means for passing a signal derived by means of the playback head from the moving tape through the playback head amplifier to the

transducer, and means operative when the tape recorder is set for playback to feed the derived signal through the



playback amplifier, the feedback circuit and the filter-amplifying circuit to the transducer.

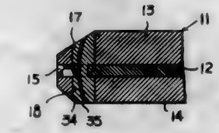
3,443,039
TAPE TRANSPORT SYSTEM WITH STATIONARY HEADS MOUNTED WITHIN A ROTATING STRUCTURE
Perry Alan Bygdnes, 3880 Bret Harte Drive, Redwood City, Calif. 94061
Filed Jan. 27, 1965, Ser. No. 428,340
Int. Cl. G11b *5/10, 5/12;* **B65h** *23/04*
U.S. Cl. 179—100.2 **10 Claims**



A tape transport including an idler wheel comprising spaced coaxial discs rotatable on the tape deck. The discs have cylindrical outer surfaces which form a narrow slot between them. The recorder and playback heads are mounted in the slot on a stationary disc which has an arcuate radial protuberance extending into the slot to further support the tape. A mounting block for the stationary discs has side tape guiding surfaces which extend tangentially from the cylindrical surfaces of the rotating discs, and an arcuate concave surface which closely embraces them. A thin cantilever member extends from the concave surface through the slot to support the stationary disc.

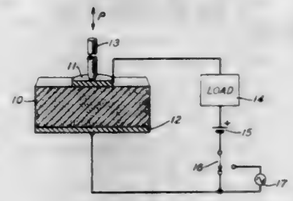
3,443,040
MAGNETIC TRANSDUCER HEAD WITH SINGLE TURN WINDING OF SELF-HARDENING MATERIAL
Toshi Suzuki, Kamakura, and Kaoru Ishii, Yokohama, Japan, assignors to Victor Company of Japan, Limited, Yokohama, Japan, a corporation of Japan
Filed May 4, 1965, Ser. No. 453,006
Claims priority, application Japan, May 7, 1964, 39/25,581
Int. Cl. G11b *5/20*
U.S. Cl. 179—100.2 **3 Claims**

The invention provides a new and novel magnetic transducer head. Prior art had taught the use of loose wires soldered to certain transducer head parts. The mechanical movement of the head shook the wire with a resulting metal fatigue which broke the wire. The heat required to solder the wires, in this prior device, produced defective magnetic heads. The invention avoids both metal



fatigue and solder heating through a use of a self-hardening filling material which rigidly fixes the entire wire without requiring the soldering iron heat.

3,443,041
SURFACE-BARRIER DIODE TRANSDUCER USING HIGH DIELECTRIC SEMICONDUCTOR MATERIAL
Dawon Kahng, Somerville, and Stuart H. Wemple, Madison, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed June 28, 1965, Ser. No. 467,211
Int. Cl. H04r *17/02, 21/02*
U.S. Cl. 179—121 **8 Claims**



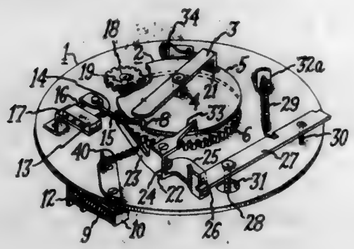
This application describes high-sensitivity electromechanical transducers comprising surface-barrier diodes made of semiconductor materials having dielectric constants between 100 and 1000.

In one specific embodiment disclosed the transducer comprises a crystal of n-type semiconducting potassium tantalate upon which a metal-to-semiconductor rectifying barrier is formed by the vacuum deposition of gold onto one surface of the crystal. More generally, other semiconductors of the perovskite class of ferroelectric materials, and mixtures thereof, such as potassium tantalate niobate, can also be used.

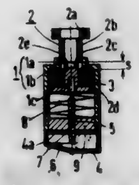
3,443,042
INTERVAL TIMER
Donald M. Ham, Rochester, N.H., and Clifton E. Taylor, North Berwick, Maine, assignors to General Electric Company, a corporation of New York
Filed Feb. 15, 1967, Ser. No. 616,318
Int. Cl. H01h *7/08, 43/10*
U.S. Cl. 200—38 **14 Claims**

Disclosed herein is a timing mechanism comprising a solenoid-activated switch for energizing a motor driven timing arm. The solenoid is also operatively connected to a circuit breaker assembly through a spring biased platen member mounted beneath the timing arm and supporting the shaft on which the timing arm is mounted. The timing arm is maintained in a first plane of rotation prior to energization of the solenoid and drops to a second plane of rotation after energization. The timing arm rides a

cammed surface in the second plane of rotation to the first plane of rotation with the spring biased platen member moving to support the shaft. The platen member thus repositions the timing arm for recycling prior to engagement with a control arm connected to the circuit breaker assembly and in the first plane of rotation.



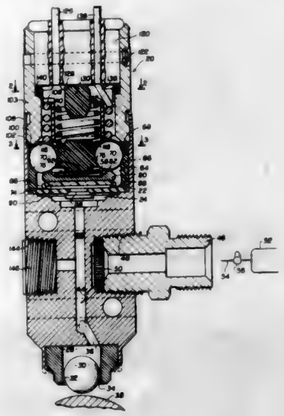
3,443,043
PUSH-BUTTON SNAP ACTION SWITCH UTILIZING A PERMANENT MAGNET MEANS, PARTICULARLY FOR COMMUNICATION EQUIPMENT
Karl Schmid-Zeller and Heinz Thormann, Munich, Germany, assignors to Siemens Aktiengesellschaft, Munich, Germany, a corporation of Germany
Filed Aug. 28, 1967, Ser. No. 663,751
Claims priority, application Germany, Sept. 2, 1966, S 105,666
Int. Cl. H01h *21/06*
U.S. Cl. 200—67 **7 Claims**



A push button switch, particularly for communication equipment, having an actuating key structure, an annular body disposed in coaxial relation with respect to the key structure, said body being positioned in a magnetizable housing structure, and movable therein responsive to key movement, with some play therebetween or equally movable therewith, the annular body being constructed as a permanent magnet or having permanent magnet means to provide a magnetic flux, as a result of which the body is retained, in the nonactuated position, engagement with the housing by magnetic adhesion, and axially movable responsive to movement of said key in actuating direction, operative to initially oppose such key movement as a result of such magnetic adhesion, and upon the release thereof, to effect a quick break movement and contact actuation in response to the magnetic flux concentration in the area of its final actuated position.

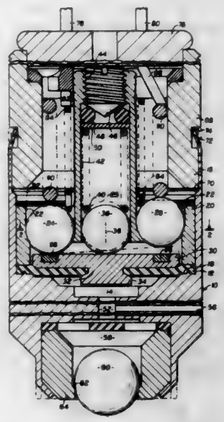
3,443,044
FLUID RESPONSIVE ELECTRIC SWITCH
George Wintriss, Carversville, Pa., assignor to Industrionics Controls, Inc., New York, N.Y., a corporation of New York
Filed Jan. 20, 1967, Ser. No. 610,652
Int. Cl. H01h *35/24*
U.S. Cl. 200—83 **21 Claims**

This invention relates to an electric switch having a diaphragm that divides the interior of the housing into a pressure chamber and a switch chamber. Fluid, such as compressed air, is supplied to the pressure chamber and there is an outlet passage from which the fluid bleeds from the housing unless the flow is totally obstructed. Obstruction of the flow, or release of pressure when the flow has been obstructed, produces a shock wave in the fluid sufficient to operate the switch. The operation is substantially instantaneous and it is not necessary to wait for a mass of fluid to flow into or out of the chamber.



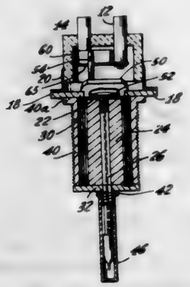
The pressure of fluid under the diaphragm is adjusted with respect to a spring in the switch chamber to obtain a degree of overbalance, and this overbalance is reversed by a shock wave in the fluid. There are specific improvements in the switch itself for adapting it to shock wave operation and for giving it an extremely long life.

3,443,045
ELECTRIC SWITCH WITH TRANSVERSE WIPING ACTION
George Wintriss, Carversville, Pa., assignor to Industrionics Controls, Inc., New York, N.Y., a corporation of New York
Filed May 10, 1967, Ser. No. 637,411
Int. Cl. H01h *1/16*
U.S. Cl. 200—83 **10 Claims**



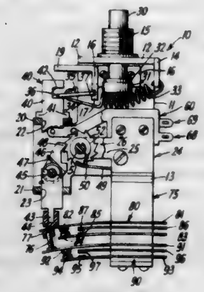
This specification discloses an electric switch with contacts that wipe over one another to keep the surface clean and without the use of a resilient arm for the movable contact. The contacts are at different distances from a normal position of a flexible diaphragm that operates a movable contact structure so that this structure has to move into an oblique position, with the diaphragm distorted, in order to have the movable contact structure touch all of the contacts simultaneously. The movement into this oblique position closes the switch and causes the contacts to wipe one another; and this keeps them clean. The contacts are preferably spherical surfaces, or can be balls.

3,443,046
VACUUM RELAY
Victor E. de Lucia, Santa Monica, Calif., assignor to Torr Laboratories, Inc., Los Angeles, Calif., a corporation of California
Filed June 5, 1967, Ser. No. 643,618
Int. Cl. H01h *9/30*
U.S. Cl. 200—144 **6 Claims**



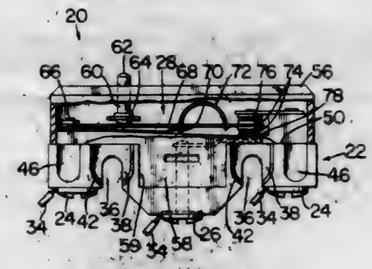
An improved vacuum relay wherein a movable contact is rotated angularly about the axis of the terminal to which said contact is pivotally connected.

3,443,047
STEPPING SWITCH WITH MOMENTARY SWITCH CAPABILITIES
Paul A. Hanold, Fort Branch, Ind., assignor to American Machine & Foundry Co., a corporation of New Jersey
Filed June 20, 1967, Ser. No. 647,387
Int. Cl. H01h *19/14, 19/28*
U.S. Cl. 200—156 **10 Claims**



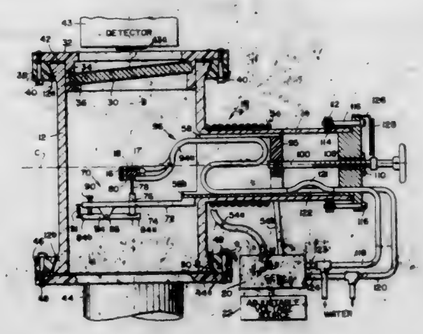
A pushbutton operated stepping switch having a snap action operating linkage movable between a stable unoperated position and an unstable terminal position, and including means biasing the linkage toward its unoperated position and the pushbutton against operation, a plurality of make/break switch means, a rotor with cam means for selectively operating said make/break switch means when said rotor turns incrementally, pawl and ratchet means causing the rotor to turn incrementally when the pushbutton is released after being depressed, and momentary switch means engaged and operated by the linkage when the pushbutton is depressed.

3,443,048
SWITCH CONSTRUCTION WITH MOUNTING SLOTS
Gilbert Rogers and Donald F. Noonan, Grove City, Ohio, assignors to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed June 8, 1967, Ser. No. 651,340
Int. Cl. H01h *9/02*
U.S. Cl. 200—168 **12 Claims**



This application discloses a switch construction having a base with one or more electric conductor fastener constructions at the bottom of the base and extending upwardly into the base and being connected with a switch mounted adjacent the top of the base. One or more mounting slots extend through the base from a medial part of the base downwardly to the bottom of the base to receive one or more mounting fasteners in each of said one or more slots. The mounting fasteners may be placed in the slots of a plurality of such switch constructions, which constructions may be secured together by tightening the fasteners. Any one or more of the switch constructions may be removed by untightening the fasteners, and a substitute switch construction may replace the removed switch construction, if desired. Methods of mounting and unmounting such a plurality of such switch constructions are also thus provided. Interlocking cavities and protrusions are provided along the sides of the base for locking the switch constructions firmly together.

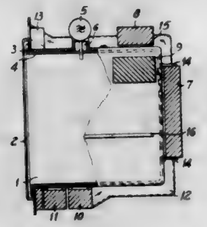
3,443,049
SPECIMEN HEATING AND ROTATING SYSTEM
Lawrence C. Hoagland, Concord, Mass., assignor to Dynatech Corporation, Cambridge, Mass.
Filed Dec. 29, 1966, Ser. No. 605,666
Int. Cl. H05b *5/18, 9/02*
U.S. Cl. 219—10.43 **18 Claims**



A specimen heating and rotating system employs an RF inductor which generates a magnetic field which is symmetric about an axis. An RF energy concentrator is ro-

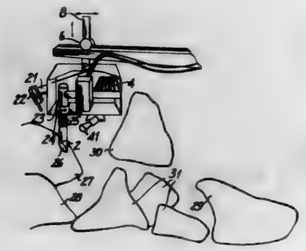
tatably supported coaxially with the magnetic field. The concentrator supports a specimen so that a portion thereof lies on that axis and inductively heats the specimen. The concentrator and specimen are both situated within a vacuum-tight chamber having a window overlooking the specimen surface. The concentrator can be turned on its axis from outside the chamber to rotate the specimen surface about the axis.

3,443,050
APPARATUS FOR HEATING NONMETALLIC SUBSTANCE, PARTICULARLY FOODSTUFFS, BY MICROWAVE ENERGY
Herbert August Püschner, Osterholzer Heerstrasse 175, Bremen, Germany
Filed Feb. 7, 1966, Ser. No. 525,482
Int. Cl. H05b 9/06
U.S. Cl. 219—10.55 4 Claims



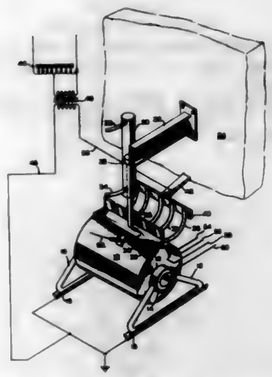
A microwave oven is formed of a unitary casting having a conducting surface enclosing all but the front of the heating chamber and formed with a circular conduit in the top wall upon which the microwave generator is seated. An insert of chromium or plastic lines this casting. An inner conductor extends from the microwave generator along the axis of the circular conduit through the top wall of the casting and inserted into the top of the heating chamber. A noncontacting door closes the front of the chamber.

3,443,051
APPARATUS FOR HEATING MATERIAL BY MEANS OF MICROWAVE DEVICE
Herbert August Püschner, Osterholzer Heerstrasse 175, Bremen, Germany
Filed July 25, 1966, Ser. No. 567,600
Claims priority, application Germany, July 23, 1965, A 49,839
Int. Cl. H05b 9/06
U.S. Cl. 219—10.55 9 Claims



A crane is fitted with a microwave system on the end of an adjustable boom for applying microwave energy to rock material to break apart the rock material.

3,443,052
FOIL HEATING METHOD
Leonard Edward Field, Longfield, Kent, England, assignor to Aluminium Foils Limited, London, England, a corporation
Continuation-in-part of application Ser. No. 430,979, Feb. 8, 1965. This application May 24, 1966, Ser. No. 552,589
Int. Cl. H05b 3/00
U.S. Cl. 219—50 11 Claims



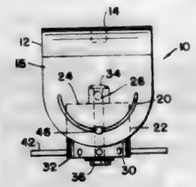
A coil of thin metal strip having a natural thin adherent oxide coating is heated by an electrical current, a substantial proportion of which flows radially between radially spaced connections.

3,443,053
METHOD OF JOINING METALLIC OBJECTS OF DIFFERENT MELTING POINTS
Edwin J. Luetzow, Logansport, Ind., assignor to Switches Incorporated, a corporation of Indiana
No Drawing. Continuation-in-part of application Ser. No. 502,610, Oct. 22, 1965. This application Sept. 29, 1966, Ser. No. 583,081
Int. Cl. B23k 11/16
U.S. Cl. 219—57 11 Claims

Electrical wires such as aluminum are joined to connector elements of lower melting point in fatigue resistant composites which exhibit substantially no voltage drop through the connection by a method wherein a higher melting point, for example, aluminum wire, is brought into physical contact with a lower melting point connector element. Electrical conducting electrodes in contact with the metals cause electrical current to flow and the aluminum wire to heat due to higher contact resistance. When the aluminum wire reaches a temperature higher than the melting point of the connector element, the local area of the element in contact with the wire is rendered molten and the pressure exerted by the electrodes cause the wire to displace the molten metal. Upon cooling of the molten metal, the wire is embedded and securely joined in the lower melting point connector element.

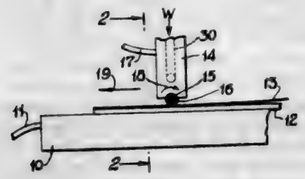
3,443,054
QUICK-CHANGE TOOL FOR ELECTRICAL EROSION MACHINING
Thomas J. O'Connor, 100 Morgan Road, Ann Arbor, Mich. 48104
Continuation-in-part of application Ser. No. 558,695, June 20, 1966, which is a continuation-in-part of application Ser. No. 504,971, Oct. 24, 1965, which in turn is a continuation-in-part of application Ser. No. 250,321, Jan. 9, 1963. This application Jan. 8, 1968, Ser. No. 696,282
Int. Cl. B23k 9/16
U.S. Cl. 219—69 10 Claims

A quick-change tool for use in electrical erosion machining capable of providing substantially universal positioning of a plurality of electrodes, simultaneously secured to the tool. The tool includes a dovetail base plate portion for rapidly and accurately securing the tool to electrical machining apparatus. In one embodiment the tool includes a base plate having a dovetail portion for securing the tool to electrical machining apparatus, a disc or a plurality of discs having a common axis of generation positioned side by side, rotatable about their axis of generation and having a plurality of angularly positioned radially extending peripheral openings therein in which separate electrodes may be secured, which disc or discs are rotatably secured to the base plate, and means for



locking the disc or discs in selected indexed positions. In another embodiment the quick-change tool includes a base plate having a dovetail portion for rapid accurate securing of the tool to electrical machining apparatus, a chuck supported from the base for rotation about one end of the chuck, a disc having a plurality of angularly positioned radially extending peripheral openings therein in which separate electrodes may be secured connected to the other end of the chuck for rotation about its axis of generation which is perpendicular to the axis of rotation of the chuck and means for locking the disc in any rotated position thereof.

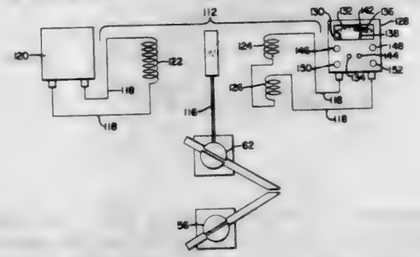
3,443,055
LAMINATED METAL ELECTRODES AND METHOD FOR PRODUCING THE SAME
Ross M. Gwynn, 916 Dornajo Way 95825, and Tim Themy, 7025 Uranus Parkway 95823, both of Sacramento, Calif.
Filed Jan. 14, 1966, Ser. No. 520,596
Int. Cl. B23k 11/06
U.S. Cl. 219—83 20 Claims



A superior electrode, uniquely durable in chlorinating, hypochlorinating and related electrolytic processes comprising a laminated body of platinum metal foil bonded to a compatible metal substrate which is highly resistant to electrolytic oxidation, the bonding being effected by applying along a line of contact between a small diameter cylindrical member of hard conductive metal, rotatable in a massive electric conductor, in engagement with said foil, and a second massive electric conductor in engagement with said substrate, a pressure of about 10 to 300 pounds per linear inch, and an electric current below 12 volts at an amperage to provide at least 3 kva. per linear inch of said line of contact, while advancing said small diameter cylindrical member in a direction perpendicular to said line of contact at a rate to provide a bonding heat sufficient to soften, without melting, the substrate surface.

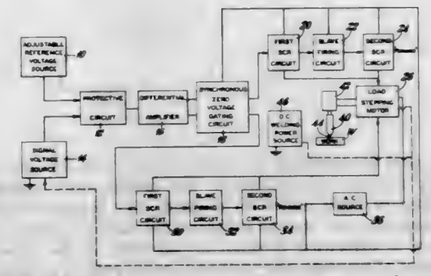
The platinum metal can be platinum, rhodium, iridium or ruthenium or alloys thereof; the substrate metal can be tantalum, titanium, niobium or alloys thereof; and the bonding is preferably effected at a pressure of 50 to 150 pounds per linear inch, using direct current of 0.1 to 5 volts at an amperage to provide 7 to 100 kva. per linear inch.

3,443,056
METHOD AND APPARATUS FOR NON-DESTRUCTIVE TESTING OF RESISTANCE WELDS
Edward J. Ramaley, Denver, and Norman G. Wilcox, Littleton, Colo., assignors to Martin-Marietta Corporation, Baltimore, Md., a corporation of Maryland
Filed June 29, 1964, Ser. No. 378,902
Int. Cl. B23k 11/24, 37/04
U.S. Cl. 219—109 13 Claims



It has been discovered that non-destructive testing of friction welded joints can be accomplished by measuring the reduction in thickness in the joint of the parts welded resulting from the welding operation and comparing the reduction in thickness to a standard reduction which was predetermined to indicate acceptable weld quality. The apparatus for carrying out the discovered method includes means for measuring the downward movement of the movable electrode which provides a signal which is proportional to the reduction in thickness of the parts welded. Mechanical or electrical means compare the signal so generated with a standard which was predetermined to provide an acceptable weld quality. The comparison can be made visually, acoustically, etc.

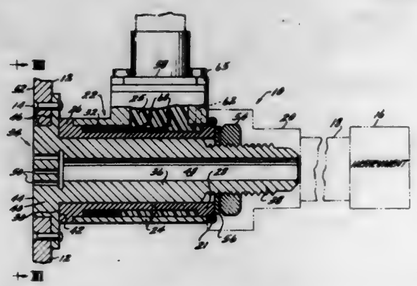
3,443,057
WORK-IN-CIRCUIT ARC WELDING APPARATUS
John P. C. Allen, Fanwood, John D. Bone, Matawan, and Frank J. Pilia, Short Hills, N.J., assignors to Union Carbide Corporation, a corporation of New York
Filed Dec. 14, 1965, Ser. No. 513,754
Int. Cl. B23k 9/10
U.S. Cl. 219—131 6 Claims



The disclosure provides a solid state control system for keeping the arc length constant in an inert gas shielded arc welding nonconsumable electrode set-up. The arc voltage is compared against a reference voltage with the difference voltage supplied as an error signal to highly sensitive control circuitry for activating a step-

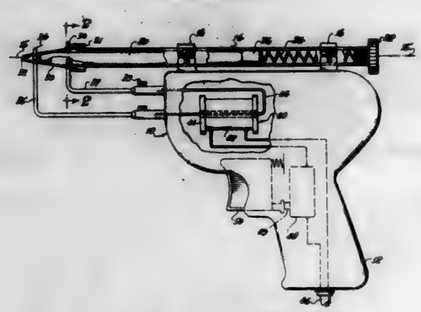
ping motor which in turn raises or lowers the torch to maintain the arc voltage constant.

3,443,058
HEATED STATIC PORT APPARATUS
William V. Johnston, Mercer Island, Wash., assignor to General Electric Company, a corporation of New York
Filed June 5, 1967, Ser. No. 643,536
Int. Cl. H05b *1/00, 3/10*
U.S. Cl. 219—201 2 Claims



Apparatus for mounting on the skin of an aircraft through which air is free to pass between the outside of the aircraft and an air pressure measuring instrument within the aircraft. A removable and replaceable heater element is pressed against a portion of the apparatus which contacts both the aircraft skin and the ambient air in order to prevent the formation of ice which would block the transmission of air pressure to the instrument.

3,443,059
HAND TOOL FOR APPLYING HOT MELT ADHESIVES AND THE LIKE
Robert A. Spencer, Monterey, Calif., assignor to Lockwood Technical, Inc., Sand City, Calif., a corporation of California
Filed Oct. 11, 1965, Ser. No. 494,578
Int. Cl. H05b *1/00, 3/42*
U.S. Cl. 219—233 5 Claims

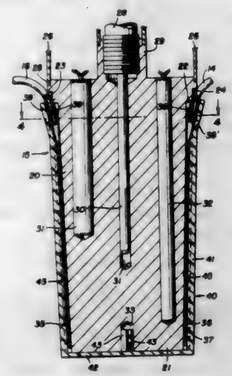


A tool for applying hot melt adhesive and the like to a work surface includes means for continuously urging a column of solid adhesive longitudinally forward toward an oblique wall that is differentially heated. Melted adhesive is dispensed through an aperture at the forward portion of the wall. The wall area in the path of peripheral portions of the column is heated only enough to soften the adhesive without melting it, thus preventing escape of molten adhesive backward along the sides of the column. Such differential heating of the oblique wall permits control of both initiation and termination of adhesive supply entirely through turning the heater on and off.

A preferred heating mechanism utilizes a conical wall with aperture at its apex. An electrical heating current is passed directly through the wall between annular electrodes adjacent the aperture and adjacent the base of the cone. With that arrangement, the required differential heating can be obtained from the varying current density along the length of the cone.

Termination of adhesive supply is accelerated by cooling fins on the exterior of the dispensing nozzle and by specific electrode structure. The column of adhesive is preferably advanced by a toothed drive wheel engaging rack formations of the column, with a tensioned helical spring urging rotation of the wheel.

3,443,060
THERMOSTATICALLY CONTROLLED ELECTRIC BLOOD HEATING APPARATUS
Edward M. Smith, Mansfield, Ohio, assignor, by mesne assignments, to The Gorman-Rupp Company, Mansfield, Ohio, a corporation of Ohio
Filed Feb. 9, 1967, Ser. No. 614,993
Int. Cl. F24h *1/20*
U.S. Cl. 219—302 9 Claims

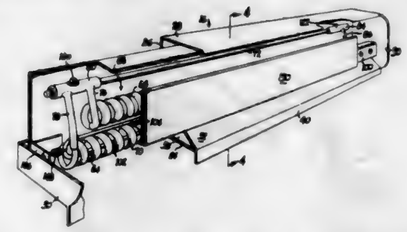


The invention relates generally to devices for heating human blood and maintaining it at a substantially optimum temperatures for transfusion.

An apparatus for maintaining the flow of blood at optimum temperature for transfusions includes a double-walled plastic bag telescoped between inner and outer mandrels, one of which has ribs restricting the bag to form a labyrinth of blood-flow passageways within the bag. The inner mandrel is electrically heated and the temperaure is accurately thermostatically controlled to maintain the blood at the optimum temperature. The apparatus is provided with dual thermostatic temperature control in which a second thermostat takes over control of the electric heater if the first thermostat fails. Indicator means are provided to signal failure of the first thermostat. A temperature guage is provided so that the temperature of the inner mandrel may be monitored.

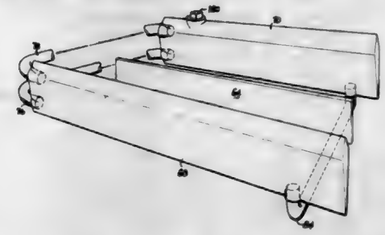
3,443,061
ELECTRIC SPACE HEATER
Russel A. Welch, Sr., St. Clair Shores, Mich., assignor of forty-five percent to Eugene A. Casaroll, Grosse Pointe, and five percent to Paul G. Hogue, Mount Clemens, Mich.
Filed Feb. 28, 1966, Ser. No. 530,499
Int. Cl. H05b *1/00*; F24h *7/06*
U.S. Cl. 219—365 11 Claims

A space heater having a pair of helical tubular liquid cells which are spaced laterally from each other and have opposite ends interconnected to produce parallel flow paths through the cells with a first heating element located in the convolutions of one cell and a second heating element located between the cells. A baffle protects at least



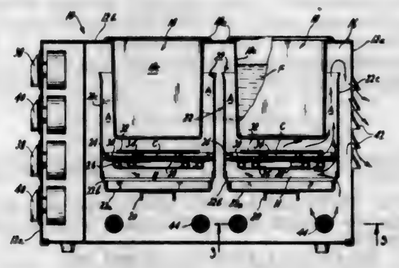
part of the housing and in several embodiments the baffle forms the liquid connection between opposite ends of the liquid cells.

3,443,062
SPACE HEATER
Russel A. Welch, Sr., St. Clair Shores, Mich., assignor of forty-five percent to Eugene A. Casaroll, Grosse Pointe, and five percent to Paul G. Hogue, Mount Clemens, Mich.
Filed June 21, 1966, Ser. No. 559,164
Int. Cl. F24h *7/06*
U.S. Cl. 219—365 11 Claims



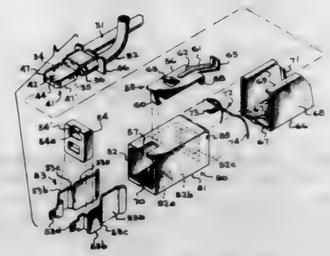
A space heater having a pair of spaced parallel liquid cells supported in a housing with at least one cell in direct heat exchange relation with heating means. The liquid cells have opposite ends interconnected in series convection fluid flow relation by a pair of fluid conduits interconnecting one end of the liquid cells and a single conduit connecting the opposite end of the liquid cells.

3,443,063
FOOD HEATING AND CONDITIONING DEVICE
Victor M. Berger, Bayside, and John L. McDonnell, New Rochelle, N.Y., assignors to Harvic Manufacturing Corp., New York, N.Y., a corporation of New York
Filed Feb. 27, 1967, Ser. No. 618,755
Int. Cl. F27d *11/00*
U.S. Cl. 219—415 5 Claims



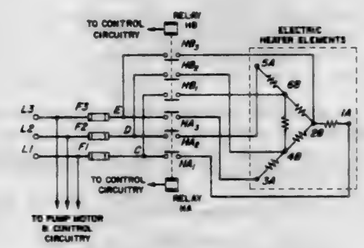
A food heating and conditioning device wherein the food-holding container is suspended into the hollow interior of the device to within close proximity of an electric heating coil and a pair of asbestos panels, defining a convection air flow chamber therebetween, is located between the coil and the container and protects the latter against intense radiation as might scorch the food while also being effective to produce a continuous convection air flow to maintain the food in a heated condition.

3,443,064
ELECTRICAL HEATING UNIT ASSEMBLY
Eberhard Meng, Cottage City, and Howard Eugene Meyer, Laurel, Md., assignors to Electro-Therm, Incorporated, Laurel, Md., a corporation of Maryland
Filed June 20, 1966, Ser. No. 558,793
Int. Cl. H05b *3/08, 3/68*
U.S. Cl. 219—451 10 Claims



An electric heating unit assembly of the type commonly employed for surface heating in electric range tops and the like, having one or more tubular heating elements adapted to support cooling utensils thereon. The heating unit assembly is removably supported in an opening in the range top by a stationary electrical connector means in the form of a single male connector probe, which probe is removably received in a companion female connector socket.

3,443,065
MULTIPLE OUTPUT ELECTRIC HEATER APPARATUS
Sol R. Brandell, New York, N.Y., assignor to American Hydrotherm Corporation, New York, N.Y.
Filed Oct. 12, 1967, Ser. No. 674,953
Int. Cl. H05b *1/02*
U.S. Cl. 219—515 12 Claims



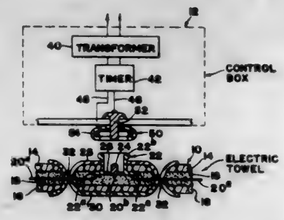
The heating elements of an electric heater are provided with electromagnetically operated, multiple switch contacts to provide three separate and distinct heating element configurations. These configurations are utilized to achieve three separate and distinct power levels for the heater.

3,443,066
HEATED OUTDOOR GARMENT
Joseph P. Weibel, Casper, Wyo., assignor of fifty percent to Richard J. Costello, Casper, Wyo.
Filed Nov. 17, 1966, Ser. No. 595,205
Int. Cl. H05b 3/06
U.S. Cl. 219—527 3 Claims



A protective garment for outdoor use incorporating an integrally associated inner and outer panel having electric heating wires therebetween electrically connected with a battery in the base of the garment and controlled by a rheostat disposd interiorly of the garment with the garment being openable down the front by employing a slide fastener and further including a seat portion that is devoid of heating wires to enable one or more persons to occupy the interior of the garment and be protected from weather elements.

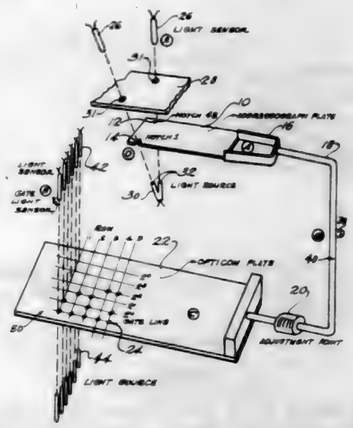
3,443,067
ELECTRIC TOWEL ASSEMBLY
Burton D. Morgan, 302 Aurora St., Hudson, Ohio 44236
Filed Dec. 7, 1966, Ser. No. 599,757
Int. Cl. H05b 3/56
U.S. Cl. 219—529 2 Claims



Apparatus for safely heating a towel which has a flexible heating element contained therein which can be connected to a suitable time and current control box in order to selectively heat the towel.

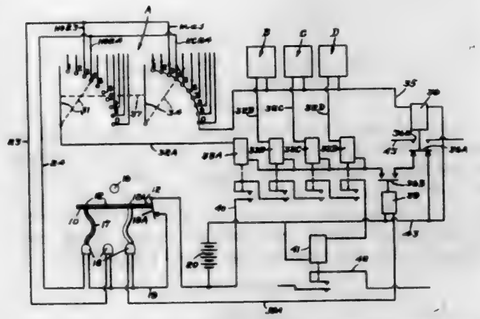
3,443,068
OPTICAL READING SYSTEM
Guy H. Tucker, 1961 Harts Mill Road, Chamblee Ga. 30005, and Joseph H. Mahaffey, Jr., 6835 Sunnybrook Lane, Atlanta, Ga. 30328
Filed Nov. 4, 1964, Ser. No. 408,902
Int. Cl. G06k 7/14; G01n 21/30
U.S. Cl. 235—61.11 5 Claims

An optical reading system employing light sensors electronically related with a decoding and memory addressing arrangement so that the detection of light through a particular element, such as an addressing plate, stencil or



tab card having notches, may be read and stored and retrieved.

3,443,069
SECURITY SYSTEMS
Warren A. Bjorn, 349 Linden St., Wellesley Hills, Mass. 02181
Filed Jan. 22, 1965, Ser. No. 427,391
Int. Cl. G06k 7/00; H04q
U.S. Cl. 235—61.11 5 Claims

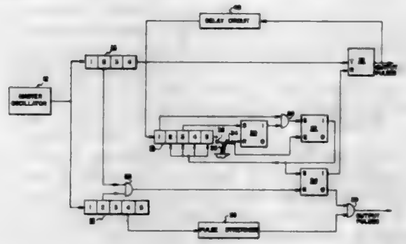


Controls for a security system requiring a card having translucent areas representing a particular code number are disclosed as including circuits closed by light admitted through the translucent areas. Each circuit has parallel leads and these are connected to control and operating leads by manually operable switch means, the control leads including means which when energized maintain the operating leads open unless the switch means is manually set to connect one lead of a light energizer circuit to the operating lead and disconnect the other lead of that circuit from the control lead.

3,443,070
SYNCHRONIZED TIMING SYSTEM FOR DATA PROCESSING
William G. Derby and John R. Nowell, Phoenix, Ariz., assignors to General Electric Company, a corporation of New York
Filed Oct. 22, 1965, Ser. No. 501,195
Int. Cl. G06f 7/38; G06g 7/12
U.S. Cl. 235—92 9 Claims

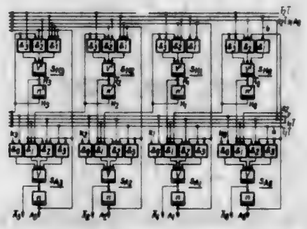
A synchronized timing system for data processing em-

ploys a master oscillator and a pair of frequency divider



circuits to control the phase relationship of timing signals having different frequencies.

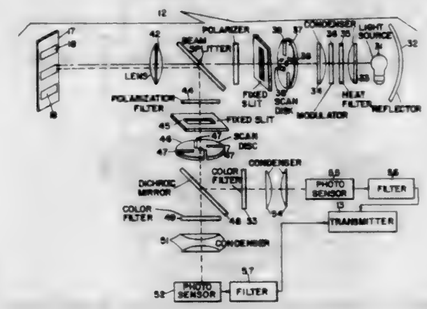
3,443,071
COUNTER
Dieter Petzold, Berlin, Germany, assignor to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, Germany
Filed May 18, 1965, Ser. No. 456,735
Claims priority, application Germany, May 19, 1964, L 47,830; Apr. 26, 1965, L 50,569, L 50,570
Int. Cl. G06g 7/14; H03k 21/32
U.S. Cl. 235—92 36 Claims



A multiple stage counter for forward and reverse binary and decimal counting and capable of being preset to a selected starting number. Each stage has a main and an auxiliary storage unit, there being means for applying counting signals to the main storage unit and means for applying auxiliary counting signals to the auxiliary storage unit. The auxiliary counting signals change their conditions at different times than the counting signals. The main and auxiliary storage units of the stages are connected with each other in such a manner that the changes in the counter stages caused by the counting and auxiliary counting signals take place, respectively, within the storage time for one storage unit.

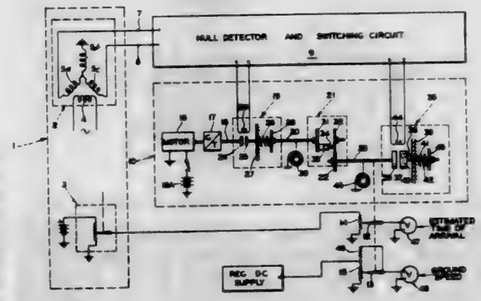
3,443,072
OBJECT IDENTIFICATION SYSTEMS
Hideo Mori, Woodland Hills, Calif., assignor to Abex Corporation, a corporation of Delaware
Filed Dec. 10, 1964, Ser. No. 417,362
Int. Cl. G06c 15/00; G06m 7/00
U.S. Cl. 235—61.11 7 Claims

An optical automatic object-identification system comprising means for developing a light beam of uniform initial polarization and for projecting that beam toward a predetermined point traversed by each object to be identified. Each object carries a code reflector member having a plurality of individual reflector elements each of which reflects the light beam with a polarization change of 90°. A photosensitive detector intercepts the reflected light beam, polarization filter means being employed to



limit the light reaching the detector to light which has been rotated 90° from the initial polarization.

3,443,073
GROUNDSPEED AND ESTIMATED TIME OF ARRIVAL COMPUTER
Richard L. Cohen, Brooklyn, N.Y., assignor to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware
Filed Jan. 21, 1964, Ser. No. 339,254
Int. Cl. G06f 15/50; G06g 7/78
U.S. Cl. 235—150.2 9 Claims

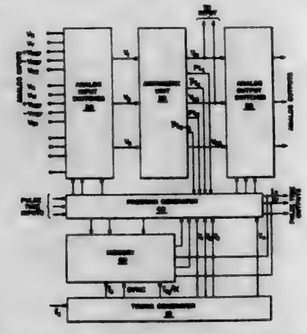


A device for indicating groundspeed and estimated time of arrival of a craft at a destination comprising an averaging device for averaging the speed of the craft during a distance increment and periodically correcting the average speed during succeeding distance increments.

3,443,074
SEQUENTIAL ANALOG-DIGITAL COMPUTER
Hermann Schmid, Binghamton, N.Y., assignor to General Electric Company, a corporation of New York
Filed Oct. 1, 1965, Ser. No. 492,037
Int. Cl. G06g 7/28, 7/30, 7/32
U.S. Cl. 235—150.4 6 Claims

A sequential computer producing analog accuracy and having relatively low speed which includes an analog arithmetic unit controlled by switching, a digital logic sequency programmer, and a simple counter memory. The arithmetic unit made up of integrators, inverters and com-

parators use those components both in operations and as part of input/output operations. The arithmetic unit also



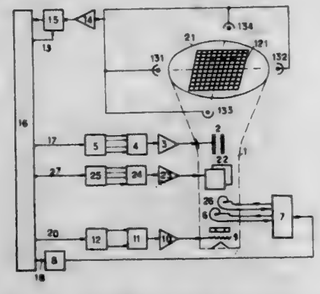
uses time as a primary operating variable to permit use of pulse width signals.

3,443,075

MAN-MACHINE COMMUNICATION SYSTEM

Paul Francois Marie Gloess, Paris, France, assignor to Societe d'Electronique et d'Automatisme, Courbevoie, Hauts-de-Seine, France

Filed Sept. 28, 1964, Ser. No. 399,614
Claims priority, application France, Oct. 8, 1963, 949,904
Int. Cl. G06f 15/20; G08b 5/22; G06g 7/48
U.S. Cl. 235—151 9 Claims



There is disclosed herein a man to machine communication system. A programmed computer provides information to display apparatus such that a pattern of light is displayed on a viewing screen for observation by a human observer. Transducers are also provided for detecting the average light output from the screen and for determining a deviation from the average when a portion or part of the display pattern is obscured by action of the human observer. Variations in average light are applied as signals to the computer through means provided for that purpose such that the computer utilizes the said signals in conjunction with its program to apply resultant signals to the display apparatus for the purpose of changing the light display pattern.

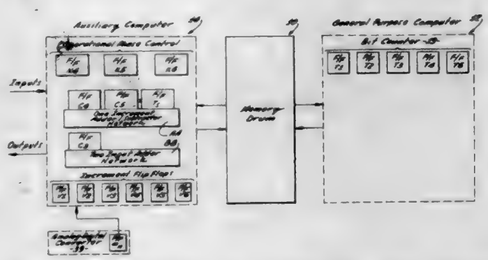
3,443,076

INPUT-OUTPUT AUXILIARY COMPUTER SYSTEM

Robert E. Bible, Rancho Santa Fe, and Robert L. McIntyre and William F. Scott, Glendale, and Arville T. Trostrud, Jr., Encinitas, Calif., assignors to Singer-General Precision, Inc., a corporation of Delaware

Continuation of application Ser. No. 38,930, June 27, 1960. This application Aug. 18, 1964, Ser. No. 390,372
Int. Cl. G06f 3/00
U.S. Cl. 235—167 7 Claims

An auxiliary computer is provided for use with a general purpose computer to extend the capabilities of the general purpose computer. The auxiliary computer shares the same memory with the general purpose computer, and it responds to various commands to enable the general purpose computer, for example, to accept random pulse inputs, to perform high speed integrations, to calculate cut-off velocities, to transmit data-link information, to keep track of real time, and so on.

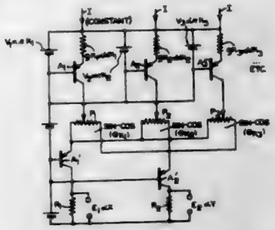


3,443,077

METHOD OF AND APPARATUS FOR CENTER OF GRAVITY COMPUTATION AND THE LIKE

Jerome Lettvin, 22 Hilliard St., Cambridge, Mass. 02138

Filed July 12, 1963, Ser. No. 294,518
Int. Cl. G06g 7/32, 7/48, 7/74
U.S. Cl. 235—184 15 Claims



1. Apparatus for computing the effective "center of gravity" of a plurality of measures having, in combination, at least three electrical conductance elements the respective conductance values of which are adjusted in accordance with three separate measures, an electric circuit connecting the elements as a T network with two of the elements in series and a terminal of the third element common with the series-connecting terminal of the said two elements, means for connecting a constant voltage source in series with the said two elements, means for connecting the other terminal of the said third element to one side of the source, and means for indicating the voltage developed at the said common terminal to determine one of the coordinates of the said center of gravity.

3,443,078

ANALOGUE COMPUTERS FOR LEAST-COST OPTIMIZATION

Leonardo Gastão Noronha, Hassocks, and Norman Derick Watling, Burgess Hill, England, assignors to Electronic Associates Inc., Long Branch, N.J., a corporation of New Jersey

Filed Sept. 16, 1966, Ser. No. 579,977
Claims priority, application Great Britain, Sept. 16, 1965, 39,660/65
Int. Cl. G06g 7/52
U.S. Cl. 235—193 16 Claims

1. an analogue computer comprising:

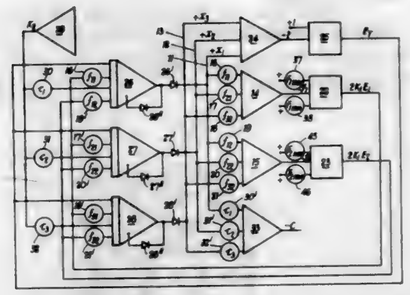
a plurality of conductors each adapted to carry a voltage representing a respective variable to be computed,

a plurality of summing amplifiers, including a last summing amplifier, each having an output point and a plurality of input points,

a respective plurality of first coefficient-setting potentiometers associated with each of the said plurality of summing amplifiers, each of these first coefficient-setting potentiometers connecting a respective one of the said conductors to a respective one of the input points of the summing amplifier with which it is associated,

a further summing amplifier having an output point and a plurality of input points each directly connected to a respective one of the said conductors,

a first plurality of error units each having an output point, a first input point connected to the output point of a respective one except the said last of the said plurality of summing amplifiers, and at least one second input point, each said second input point having connected thereto means for applying thereto a limit-defining signal and the error unit being arranged to provide at its output point a signal proportional to the extent to which a signal applied to the said first input point thereof is beyond a limit defined by a limit-defining signal applied to any said second input point thereof,



a further error unit having an output point, a first input point connected to the output point of the said further summing amplifier, and a second input point having connected thereto means for applying a constant-value signal thereto, the said further error unit being arranged to provide at its output point a signal proportional to the difference between signals applied respectively to its first and second input points,

a constant voltage source,

a plurality of summing integrators each having an output point connected to a respective one of the said conductors, a first input point connected to the output point of the said further error unit, and a plurality of other input points, and,

associated with each summing integrator, a respective plurality of second coefficient-setting potentiometers connecting the said other input points of that integrator respectively to the said constant voltage source and to the output points of each of the said first plurality of error units.

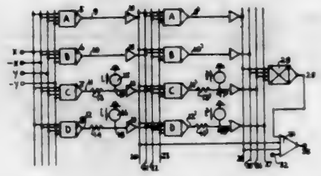
3,443,079

CASCADE MULTIPLIER

Amos Nathan, % Dept. of Electrical Engineering, Technion, Israel Institute of Technology, Haifa, Israel

Filed Sept. 12, 1963, Ser. No. 308,462
Int. Cl. G06g 7/16, 7/12
U.S. Cl. 235—194 15 Claims

1. A cascade multiplier for the production of an output quantity representing the product of first and second variables, comprising first and second means for receiving first and second input quantities representing said variables, respectively; a first stage connected thereto for producing by a process of selection of maximum and minimum of said quantities and their inverses, first and second converted quatities, wherein said first converted quantity corresponds with a first approximation of said output quantity; means adapted to effect a predetermined shift of said second converted quantity to produce a third converted quantity; generating means responsive to said first and third converted quantities for producing therefrom at least one further quantity such that a linear function thereof and of said first converted quantity corresponds with an improved approximation of said output quantity; and linear combining means arranged to receive said first converted quantity and said further quantity for producing said output quantity.

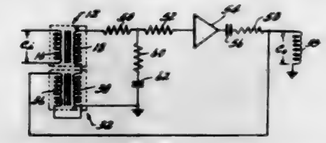


3,443,080

DIVIDING CIRCUIT PARTICULARLY ADAPTED FOR MEASURING PRESSURE RELATIONSHIPS

William R. Spencer, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York

Filed June 7, 1965, Ser. No. 461,796
Int. Cl. G06g 7/16, 7/57
U.S. Cl. 235—196 8 Claims



The disclosure illustrates an electrical dividing circuit for calculating a signal approximating the Mach number of a gas stream flowing through a conduit. A pair of transducers respectively sense the differential between total and static pressure and static pressure, per se, in the conduit. The differential transducer is excited by a fixed input signal. The static pressure transducer is excited by the output of a fixed gain amplifier. The output signals of the two transducers are summed and then fed to a 90° phase shifting device which provides an input to the fixed gain amplifier. The ratio of the input to the output signal represents the relative gains between the two transducers and, therefore, represents the quotient of the differential pressure strength divided by the static pressure strength.

3,443,081

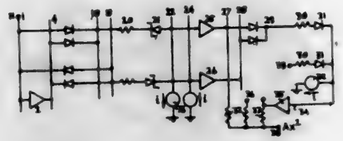
CASCADE SQUARER

Amos Nathan, % Dept. of Electrical Engineering, Technion, Israel Institute of Technology, Haifa, Israel

Filed Sept. 12, 1963, Ser. No. 308,473
Claims priority, application Great Britain, Nov. 13, 1962, 42,808/62
Int. Cl. G06g 7/26, 7/28; G06f 15/34
U.S. Cl. 235—197 20 Claims

1. A cascade squarer for the production of an output quantity representing the square of a variable, comprising first and second input means for receiving first and sec-

ond input quantities representing said variable and its inverse, respectively; a first stage connected to said input means for producing by a process of selection and shift of said input quantities a first converted quantity corresponding with a first approximation of said output quantity; means responsive to said converted quantity for producing therefrom at least one further quantity such that a linear function of said first converted quantity and said further quantity corresponds with an improved approximation of said output quantity; and linear combining means arranged to receive said first converted quantity and said further quantity for producing said output quantity.

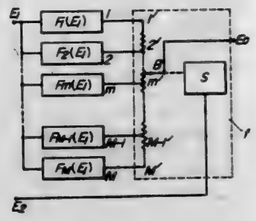


3,443,082

FUNCTION GENERATOR

Ryoichi Abe, Kodaira-shi, Japan, assignor to Hitachi Electronics Company, Ltd., Tokyo, Japan, a corporation of Japan

Filed Nov. 30, 1965, Ser. No. 510,542
Claims priority, application Japan, Jan. 5, 1965, 40/264
Int. Cl. G06g 7/26, 7/28; G06f 15/34
U.S. Cl. 235—197 6 Claims



A function generator for generating as an output voltage a function approximated by lines or surfaces in response to an input voltage, including a plurality of circuits in each of which collectors of two grounded base transistors adapted to be supplied with an input voltage and a bias voltage are connected in common, the said collectors being fed through a resistor with a voltage for operating the transistors, and an output being derived from the said collectors through a diode.

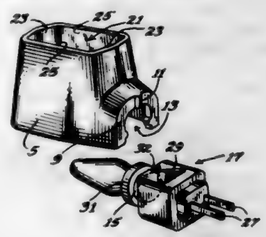
3,443,083

VAPORIZING LIGHT SHIELD AND COMBINED NIGHT LIGHT VAPORIZER

Frank J. Curran, Downers Grove, Ill., assignor to Frank J. Curran Co., a corporation of Illinois

Filed June 27, 1966, Ser. No. 560,428
Int. Cl. F21v 33/00
U.S. Cl. 240—2 3 Claims

A combined night light and vaporizer in which the light shade is formed with an open top receptacle or vaporizing chamber and the light shade has a collar which snaps on to the neck of the light plug and socket and is held in proper position by a cooperating slot and key on the shade and socket elements.

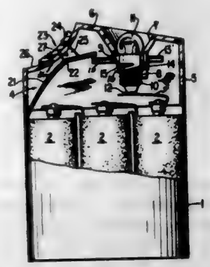


3,443,084

DISPOSABLE FLASHLIGHT

Jean Firmin Jammet, Poitiers, Vienne, France, assignor to Societe des Accumulateurs Fixes et de Traction (Societe Anonyme), Romainville, Seine-St-Denis, France, a company of France

Filed Mar. 18, 1966, Ser. No. 535,453
Claims priority, application France, Dec. 15, 1965, 42,465
Int. Cl. F21l 7/00
U.S. Cl. 240—10.65 14 Claims



A disposable flashlight of the type comprising a conventional battery having resilient terminal blades and a bulb mounted in a common sealed casing. A first terminal of the bulb is in permanent contact with one of the resilient terminal blades, and the other terminal blade is normally in open circuit condition relative to a plate member which is in permanent direct electric contact with the other terminal of the bulb. A slidable switch element is mounted on the casing and is in slidable engagement with the second terminal blade so as to be able to move it into circuit closing contact with said plate member and thus to complete the electric circuit from said battery through said bulb and illuminate said bulb. Upon exhaustion of the battery, the entire device is discarded.

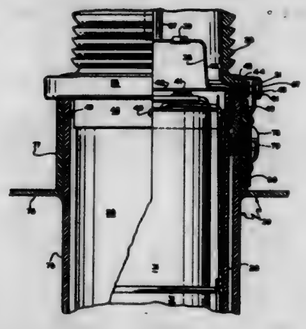
3,443,085

BUOY LIGHT

Ernest R. Steltzer, Lysander, Edward J. Nitsch, Camillus, and Fred F. Stube, Syracuse, N.Y., assignors to R. E. Dietz Company, Syracuse, N.Y., a corporation of New York

Filed Apr. 6, 1967, Ser. No. 628,981
Int. Cl. F21l 7/00, 11/00
U.S. Cl. 240—10.66 4 Claims

A battery-powered light adapted to be supported upright in a buoy, the upper end of the light being a 360 degree lens. The lens and an elongated tubular battery case are secured together by interlocking lugs on a retainer ring around the lens and a collar secured to the top of the case. The electrical components are contained in a dish-shaped container supported between suitable gaskets and lens and collar. A locking tab secured to the buoy is associated with the ring and collar for securing the light to the buoy and for preventing pilferage.

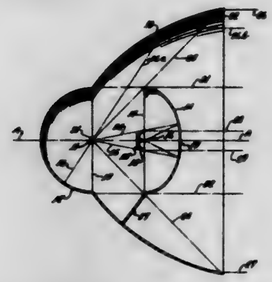


3,443,086

BEAM-FORMING SYSTEM

Vitolds Rikis, Costa Mesa, Calif., assignor to Giannini Scientific Corporation, Amityville, N.Y., a corporation of Delaware

Filed May 16, 1967, Ser. No. 638,821
Int. Cl. F21v 7/09
U.S. Cl. 240—41.1 16 Claims



The disclosure relates to a beam-forming system, for use in searchlights and elsewhere, in which an elliptical reflector is disposed within a parabolic reflector to receive radiation not incident to such parabolic reflector. Reflections from the elipse are directed to a second parabolic reflector and thence in a beam parallel to that from the first-mentioned parabolic reflector. A re-imaging reflector is provided for the radiation source.

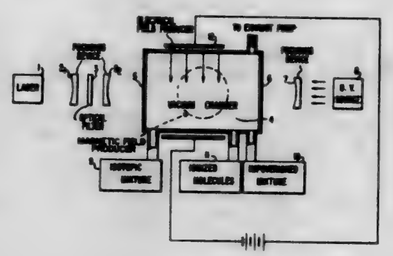
3,443,087

ISOTOPIC SEPARATION PROCESS

Jean Robieux, Chatenay-Malabry, and Jean-Michel Auclair, Limours, France, assignors to Compagnie Generale d'Electricite, Paris, France, a corporation of France

Filed Sept. 16, 1964, Ser. No. 396,860
Claims priority, application France, Oct. 21, 1963, 951,263
Int. Cl. H01j 39/36; B01d 59/44
U.S. Cl. 250—41.9 14 Claims

1. A method for separating isotopes of a gaseous mixture containing a first isotope having a first excitation energy level and a second isotope having an excitation energy level higher than said first excitation energy level which comprises subjecting said gaseous mixture to radiation emitted by a first radiation source at a predetermined frequency that excites the molecules of the first isotope but not the molecules of the second isotope, subjecting said gaseous mixture to radiation emitted by a second radiation source at a predetermined frequency which ionizes the excited molecules of the first isotope but not the non-excited molecules of the second isotope, exposing said gaseous mixture to a field which selectively deflects the ionized molecules in said mixture, and separating said ionized molecules from the nonionized molecules.

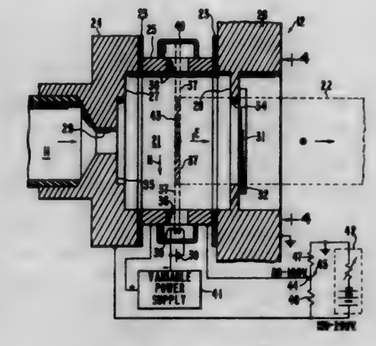


3,443,088

ION SOURCE WITH SIDE AND END WALLS HAVING INDEPENDENT POTENTIALS

Harmon W. Brown, Sunnyvale, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California

Filed Mar. 16, 1966, Ser. No. 534,857
Int. Cl. B01d 59/44
U.S. Cl. 250—41.9 8 Claims



A cycloidal mass spectrometer is disclosed. The mass spectrometer includes an improved ion source. The ion source includes a substantially hollow cylindrical chamber having a cylindrical side wall and a pair of disc shaped end walls. An electron beam is passed through the center of the chamber along a path falling in a midplane parallel to the plane of the end walls. The electron beam serves to ionize gas flowing into the ionizing chamber through one of the end walls to produce an ion beam which exits through a beam defining slot in the other end wall. The cylindrical side wall is operated at a potential intermediate the potentials applied to the end walls such that the ions are produced in a relatively strong accelerating field which rapidly accelerates the ions out of the ionizing beam path. By causing the ionizing beam to cross the ionizing chamber parallel to an equipotential plane

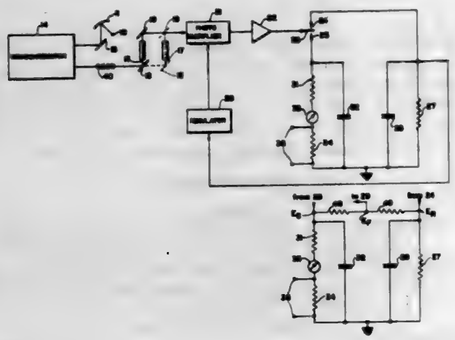
in the central region of the ionizing chamber, the ions are produced in a region of uniform accelerating electric field and by electrons of a well-defined potential. This facilitates obtaining high resolution in the output of the spectrometer and facilitates determination of ionizing and dissociation potentials. Means are also provided for varying the beam potential.

3,443,089

RADIANT ENERGY ANALYZER FOR DIRECTLY MEASURING THE POLARIZATION RATIO OF FLUORESCENT RADIATION

Karl Erik Sundstrom, Chene-Bougeries, Geneva, Switzerland, assignor to Beckman Instruments, Inc., a corporation of California

Filed June 20, 1966, Ser. No. 558,643
Int. Cl. G01n *21/26, 23/12*
U.S. Cl. 250—43.5 **3 Claims**



An improved analyzer capable of recording directly the polarization ratio of fluorescent radiation is disclosed. A double beam ratio recording spectrophotometer of the type illustrated in U.S. Patent 2,868,060 is modified to allow fluorescent measurements in the reference and sample beam paths. The reference and sample signal channels are modified by interconnecting the storage capacitors through equal resistors to form a junction to provide a signal proportional to the average or D.C. value of the detector output. This signal is fed back to control the dynode voltage of the photomultiplier to maintain the average constant. By setting the analyzer in one beam path 90° out of phase with the analyzer in the other beam path the resulting signal in the sample channel will be directly proportional to the polarization ratio.

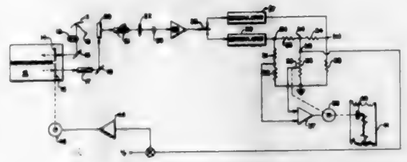
3,443,090

RADIANT ENERGY ANALYZER FOR DIRECTLY MEASURING THE POLARIZATION RATIO OF FLUORESCENT RADIATION

Karl Erik Sundstrom, Chene-Bougeries, Geneva, Switzerland, assignor to Beckman Instruments, Inc., a corporation of California

Filed June 20, 1966, Ser. No. 558,776
Int. Cl. H01j *39/00*
U.S. Cl. 250—43.5 **6 Claims**

A radiant energy analyzer capable of directly measuring the polarization ratio of fluorescent radiation is disclosed. A standard double beam ratio recording spectrophotometer may be readily modified to provide an analyzer capable of measuring directly the polarization ratio of fluorescent radiation by utilizing a single beam of the analyzer, providing polarized radiation at the sample cell, directing fluorescent radiation to the spectrophotometer detector and placing an analyzer therebetween, rotating the analyzer in synchronism but at half the frequency of the signal sorting demodulator of the spectrophotometer. In this way the signals in the reference and sample signal channels are respectively proportional to the fluorescent components parallel and perpendicular to the plane of polarization of the incident radiation. By interconnecting



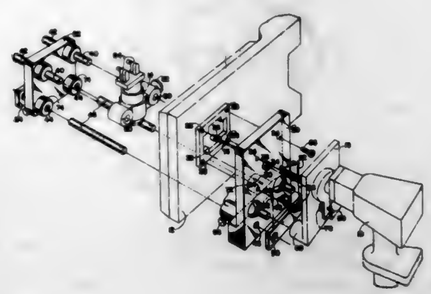
the signal channels to provide a sum of these signals, placing the sum across the slidewire of the position potentiometer of a recorder, feeding back to maintain the sum signal substantially constant while feeding one of the other signals to the differential amplifier of the recorder, the position of the recording servo is proportional to the ratio of the difference to the sum of the signal inputs.

3,443,091

SINGLE APPARATUS WITH MEANS TO PERFORM A BACK-REFLECTION OR TRANSMISSION DIFFRACTION METHOD OF X-RAY PHOTOGRAPHY

Philip D. Bartlett, Worcester, and Melvin Friedman, Arlington, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed May 2, 1966, Ser. No. 546,756
Int. Cl. G01n *23/02, 23/20;* **H01j** *37/20*
U.S. Cl. 250—51.5 **6 Claims**



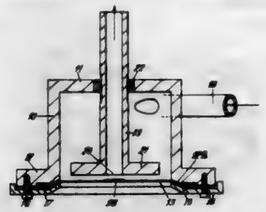
The present application is concerned with apparatus for permitting a rapid positional interchange of a cassette and a sample specimen holder relative to an X-ray tube to enable, optionally, either a back-reflection or a transmission diffraction method of X-ray photography. In brief, the apparatus includes a single cassette having a central aperture and adapted to both types of diffraction method, a sample specimen holder, individual supporting members for the cassette and specimen holder, means slidably interconnecting the supporting members, attaching means identified with the X-ray tube, and individual manually-releasable attaching means identified with each of the supporting members. The manually-releasable attaching means are complementary to that identified with the X-ray tube, and permit rapid attachment to or release from the latter to make readily possible either type of X-ray photography.

3,443,092

CONTINUOUS X-RAY FLUORESCENT ANALYSIS OF THE SOLID COMPONENT OF A SLURRY

Kenneth Garfield Carr-Brion and Doris Audrey Jenkinson, Stevenage, England, assignors to National Research Development Corporation, London, England, a corporation of Great Britain

Filed June 16, 1966, Ser. No. 557,933
Claims priority, application Great Britain, June 22, 1965, 26,414/65
Int. Cl. G01n *23/20*
U.S. Cl. 250—51.5 **15 Claims**



Method and apparatus for testing continuously the concentration of a given element in the solid component of a slurry in which the solid component is at least partially separated centrifugally from the slurry, the solid component so separated being moved in a continuous layer across and in contact with a window of said apparatus, and the solid component in said layer being analyzed by means of radiation transmitted through said window.

3,443,093

DENTAL X-RAY PACKET HAVING A UNIFORM OVERALL THICKNESS AND METHOD OF MAKING SAME

Terry N. Lindenmuth and Charles W. Pierson, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed July 7, 1966, Ser. No. 563,532
Int. Cl. G01n *23/04;* **H01j** *37/22;* **B65d** *85/48*
U.S. Cl. 250—69 **6 Claims**



Conventional dental X-ray film packs which vary in overall thickness at different portions along their length by reason of a difference in the number of layers of material resulting from the package structure, have the metal foil thereof knurled or embossed to different depths at the thinner portions to increase the thickness of those portions to that of the thickest portion so that the overall thickness of the entire pack is substantially the same. This improves the stacking properties of such packs and prevents them from jamming up in the discharge slots of dispensers provided for dispensing them one at a time from a stack.

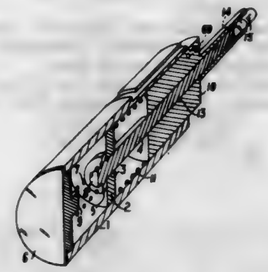
3,443,094

SCINTILLATION OBSERVER FOR A SPECIMEN SUBJECTED TO RADIATION

Guy Portal, Epinay-sur-Seine, and Marc Aouizerate, Massy, France, assignors to Commissariat à l'Energie Atomique, Paris, France

Filed Nov. 22, 1966, Ser. No. 596,201
Claims priority, application France, Nov. 10, 1965, 41,863
Int. Cl. G01t *1/20;* **H01j** *39/18*
U.S. Cl. 250—71.5 **8 Claims**

1. A device for observing the scintillation of a specimen, said device comprising a specimen-holding unit constituted by a cylindrical casing, an axial cylindrical push-rod fitted in said casing and applied by means of a spring against the base of said casing, and a cylindrical chuck which is adapted to slide over said push-rod, said cylindrical chuck being adapted to hold a specimen to be studied and provided with a driving element so as to permit the sliding motion of said cylindrical chuck within said casing and a detector unit comprising a chamber for receiving said specimen-holding unit, a pasageway which forms an axial extension of said chamber, a recess at the end of said passageway, a radiation source disposed



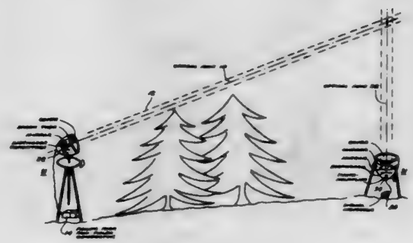
in said recess, a detector proper, a window provided in a wall of the pasageway opposite to said detector, a shutter adapted to mask said window and a device for withdrawing said shutter at the moment of positioning of the specimen-holding unit within the receiving chamber, the specimen to be inspected which is carried by the terminal cylindrical chuck of said holding unit being held in position in the passageway at the level of the window and applied against the adjacent seating of the radiation source under the action of said push-rod and said cylindrical chuck being withdrawn at the same time as said shutter.

3,443,095

GEODETIC RANGING SYSTEM

Frank Früngel, Herwigredder 105a, Hamburg-Rinen, Germany

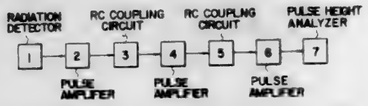
Filed Jan. 4, 1965, Ser. No. 423,079
Int. Cl. G01t *1/16*
U.S. Cl. 250—83.3 **12 Claims**



A geodetic ranging system for locating the direction of a particular geographical point. A transmitter and a receiver adapted to ultraviolet rays, are located at the two points in question. The transmitter transmits a very short ultraviolet wave length signal, within the region of 1,800 to 2,500 angstroms. The peaks of the signals are in the megawatt range and the rise time of the transmitter pulses are of the order of magnitude of nanoseconds. The transmitted signal is designed so that it may be readily distinguished from ordinary white noise and thus make the

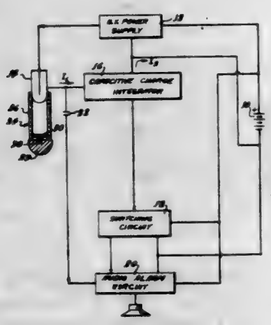
arrangement useable in both daylight as well as night time applications. The receiver may be directed vertically upward while the transmitter is rotated in both azimuth and elevation so that the transmitter beam intersects the axis of the receiver. The arrangement is particularly applicable to situations wherein the geographical point to be located is inaccessible as a result of natural obstructions in the form of trees and hills.

3,443,096
CIRCUIT ARRANGEMENT FOR USE IN RADIATION MEASUREMENTS AND THE LIKE PURPOSES
Teruichi Tomura, Kodaira-shi, Tokyo-to, Japan, assignor to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan
Filed Feb. 25, 1965, Ser. No. 435,132
Claims priority, application Japan, Feb. 29, 1964, 11,169, 11,170, 11,171
Int. Cl. H01j *39/00*
U.S. Cl. 250—83.3 2 Claims



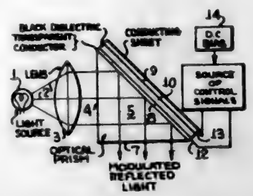
A radiation measuring circuit has a radiation detector with a first group of amplifier and RC coupling circuit; a second group of amplifier and RC coupling circuit for the first RC coupling circuit; a third amplifier for the second RC coupling circuit that includes a direct current coupling arrangement in the main feedback loop, and a pulse height analyzer provided for the output of the third amplifier.

3,443,097
POCKET RADIATION DOSIMETER UTILIZING CAPACITOR INTEGRATOR
Marvin L. Smith, Kennewick, Wash., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Jan. 5, 1968, Ser. No. 695,971
Int. Cl. G01t *1/18*
U.S. Cl. 250—83.6 5 Claims



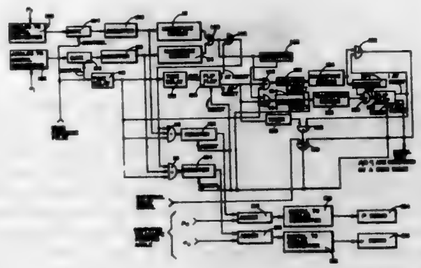
A pocket radiation dosimeter comprises a radiation counter tube and a capacitor integrator connected to integrate the output of the counter tube. An alarm actuates responsive to a predetermined storage voltage of the capacitor integrator and a radiation source coupled to the counter tube provides therefrom a compensatory signal for electrical leakage of the capacitor integrator.

3,443,098
ELECTROSTATICALLY CONTROLLED LIGHT MODULATOR
Bernard L. Lewis, Satellite Beach, Fla., assignor to Radiation Incorporated, Melbourne, Fla., a corporation of Florida
Filed Oct. 21, 1965, Ser. No. 500,030
Int. Cl. H04b *9/00*
U.S. Cl. 250—199 26 Claims



A light modulator using a flat sheet of pliable dielectric material which is flowable under pressure but which returns to its original shape as the pressure is released, superposed on a totally internally reflecting flat surface having optical irregularities. Various means are provided to apply pressure to force the dielectric sheet into total contact over the entire reflecting surface despite the optical irregularities.

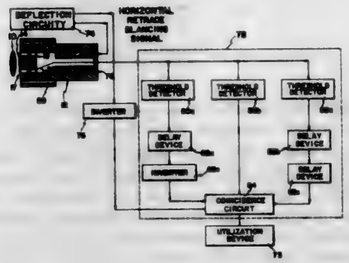
3,443,099
SIGNAL VERIFYING DEVICE
William D. Ashcraft, Placentia, Calif., assignor to North American Rockwell Corporation
Filed Feb. 3, 1964, Ser. No. 342,209
Int. Cl. G01j *1/20*; H01j *39/12*
U.S. Cl. 250—203 13 Claims



13. In combination:
a telescope, gimbaled about two axes at right angles to the optical axis thereof, said axes being designated the σ and μ axes;
means for scanning said telescope in a roulette pattern;
photo-electric means positioned within said telescope and adapted to sense light passed by said means for scanning;
resolving means for generating signals which are measures of the position of said means for scanning relative to the optical axis, measured in σ and μ coordinates;
gate means, connected to be responsive to signals from said photo-electric means and adapted to pass signals from said resolving means when light is detected by said photo-electric means;

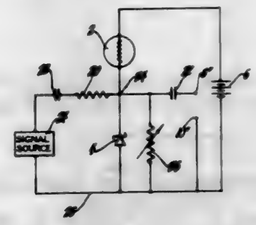
first and second registers, connected to the output of said gate means to register the position of said means for scanning when light is sensed by said photo-electric means;
magnitude sensing means, connected to the outputs of said first and second registers to generate a signal when the signals in said first and second registers exceed a predetermined magnitude;
third and fourth registers, adapted and connected to receive information from said first and second registers;
servo means connected to said third and fourth registers and adapted to move the optical axis of said telescope to coincide with the position of the light sensed by said photo-electric means;
switching means, adapted to be set by signals from said photo-electric means to cause said roulette pattern scanning means to intercept said optical axis at a rapid rate compared to the rate of interception of any other portion of the field of view of said telescope;
logic means connected to said magnitude sensing means and said photo-electric means and adapted to separate signals generated by said photo-sensing means within a predetermined distance of said optical axis from signals generated by said photosensing means outside of said predetermined distance, and adapted to count the number of times light is intercepted within said predetermined distance of the optical axis of said telescope and the number of times light is intercepted outside of said predetermined distance of the optical axis of said telescope, to compare said counted interceptions, and to generate a signal indicating that said originally detected light does or does not originate at a persistent light source.

3,443,100
APPARATUS FOR DETECTING MOVING BODIES BY PAIRED IMAGES
David L. Fried, Woodland Hills, Calif., assignor to North American Rockwell Corporation
Filed Jan. 22, 1965, Ser. No. 427,245
Int. Cl. H01j *39/12*; G02b *1/00*; G01j *1/20*
U.S. Cl. 250—206 11 Claims



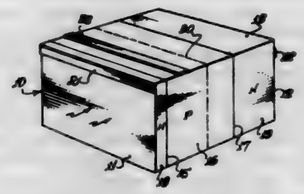
This invention relates to the identification of moving targets; and more particularly to the identification of illuminated moving satellites. The composite star-satellite object-field is imaged onto a pickup tube to produce a primary image-field; and after a suitable time-interval is again imaged to produce a displaced image-field, so that each object has a double image. The pickup tube's output signal, corresponding to initial and displaced image-fields, is analyzed to determine whether any of the double-images have a displacement that differs from the intentional displacement. Suitable circuitry is used to detect abnormal displacements, these corresponding to a moving body.

3,443,101
LIGHT SENSITIVE CIRCUIT EMPLOYING A ZENER DIODE IN SERIES WITH THE PHOTOCONDUCTIVE DEVICE
Robert R. Bockemuehl, Bloomfield Hills, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 9, 1965, Ser. No. 478,327
Int. Cl. H01j *39/12*
U.S. Cl. 250—206 4 Claims



A light sensitive control system employing in series a Zener diode and a semiconductor photo device. The Zener diode and photo device are together connected across a DC source. Changes in ambient light are sensed by the photo device and cause an output control signal to be developed across the Zener diode. An AC source, when connected across the Zener diode, enables the presence of light to be reflected by whether or not the output control signal is alternating.

3,443,102
SEMICONDUCTOR PHOTOCELL DETECTOR WITH VARIABLE SPECTRAL RESPONSE
Stephen Kaye, Pasadena, Calif., assignor to Electro-Optical Systems, Inc., Pasadena, Calif., a corporation of California
Filed Oct. 28, 1964, Ser. No. 407,025
Int. Cl. H03k *3/42*; H02h *3/28*; H01j *39/12*
U.S. Cl. 250—211 10 Claims

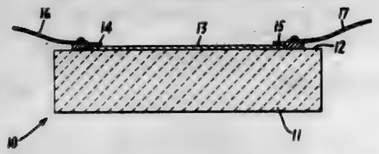


A semiconductor photocell detector including preferably two rectifying junctions disposed substantially parallel to that surface of the semiconductor body which is exposed to incident radiation. The long wavelength cutoff frequencies of the detector may be varied by varying the reverse bias applied to one of the two junctions.

3,443,103
PHOTOCONDUCTIVE CELL HAVING HIGH STABILITY AND DARK RESISTANCE
Tavorath K. Lakshmanan, Matawan, N.J., assignor to Weston Instruments, Inc., Newark, N.J., a corporation of Delaware
Filed Mar. 16, 1966, Ser. No. 534,690
Int. Cl. H01j *39/12*
U.S. Cl. 250—211 9 Claims

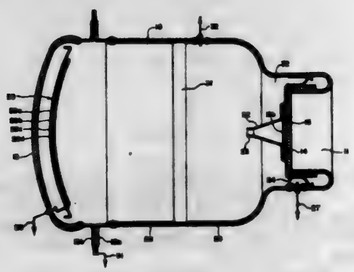
In the particular embodiment of the invention described herein, a photoconductive cell is prepared by mixing cadmium selenide with four percent by weight of

cadmium chloride and 0.02% by weight of cupric chloride, and then heating the mixture at 800° C. for thirty



minutes. After cooling, the mixture is ground and applied to a substrate and then heated at 600° C. for ten minutes.

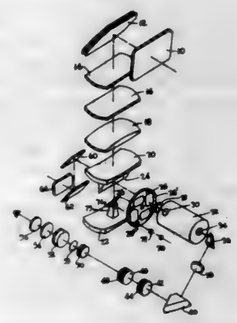
3,443,104
IMAGE INTENSIFIER TUBE WITH SHADING COMPENSATION
Wilfrid F. Niklas, Golf, Ill., assignor to The Rauland Corporation, Chicago, Ill., a corporation of Illinois
Filed Feb. 17, 1966, Ser. No. 528,173
Int. Cl. H01j *31/50*
U.S. Cl. 250—213 2 Claims



An improved electron optical system is described for an image intensifier tube. In the preferred embodiment, means for alleviating defects in the output image in the form of uneven illumination and/or peripheral distortion, commonly referred to as "shading," are provided by coating the interior wall surface of a cylindrical image intensifier tube with a thin conductive band which is axially split approximately at its center. The two wall electrodes thus formed have identical diameters which are greater than the diameter of the photoemissive cathode and have a total width approximately equal to one-half of the length of the tube. The potential gradient at the photocathode surface is adjusted by controlling the potentials applied to the wall electrodes to counteract asymmetries of the system resulting from mechanical misalignment, stray magnetic fields, undesired electrostatic fields, or the like and thereby optimize the brightness distribution and peripheral resolution of the output image.

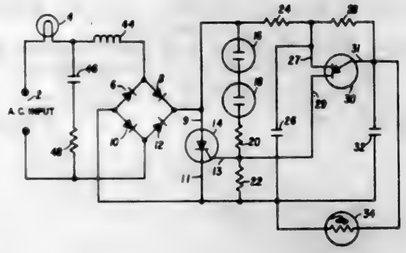
3,443,105
PERISCOPIC NIGHT SIGHT HAVING A FILTER DISC FOR REGULATING THE INTENSITY OF THE INPUT TO A MULTISTAGE IMAGE INTENSIFIER
Wright H. Scidmore, Langhorne, and James W. Shean, Levittown, Pa., assignors to the United States of America as represented by the Secretary of the Army
Filed Mar. 7, 1967, Ser. No. 621,745
Int. Cl. H01j *39/12*
U.S. Cl. 250—213 5 Claims

A compact periscope having a high power night sighting capability and an unaided binocular day vision capability in which a manually rotatable filter disc provides compensation for differing ambient levels of target



illumination to permit use with a high-gain multistage image intensifier.

3,443,106
RADIATION SENSITIVE POWER CONTROL SYSTEM
Kenneth L. Ebershoff, Phoenix, Ariz., and Kenneth H. Miller, Austin, Tex., assignors to Davis Electronics Corporation, Austin, Tex., a corporation of Texas
Filed Feb. 13, 1964, Ser. No. 344,690
Int. Cl. H01j *39/12*; H02b *1/24*; H01h *35/00*
U.S. Cl. 250—214 12 Claims

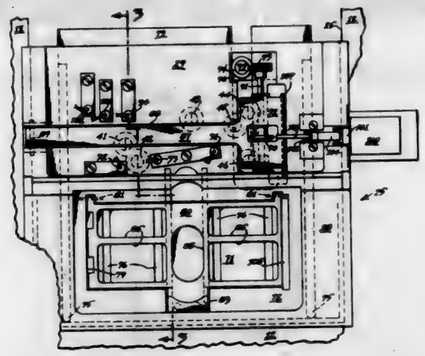


This invention relates to a system for controlling the electrical power delivered to a load, and more particularly to a system for controlling the power responsive to light incident on a photosensitive device. A semiconductor controlled rectifier is connected to an AC voltage source and the load, and control means are connected to the controlled rectifier for generating a gate signal at controlled times during each half cycle of the AC voltage supply to cause power to be supplied to the load, which control means includes a photosensitive device whose impedance varies as a function of light incident thereon.

3,443,107
RADIATION SENSITIVE CURRENCY TESTING DEVICE
Donald D. Modglin, Nashville, Tenn., assignor to Automated Machines Corporation, Nashville, Tenn., a corporation of Tennessee
Filed May 28, 1965, Ser. No. 459,850
Int. Cl. G01n *21/30*
U.S. Cl. 250—219 5 Claims

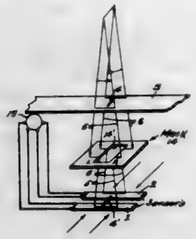
The denomination and genuineness of paper currency is determined by means of apparatus using light sources

and photoelectric cells on opposite sides of the currency. After the currency is read and verified the operator has



the choice of recovering it or leaving it in the apparatus which then performs its designed function.

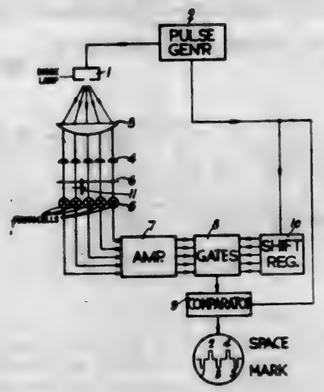
3,443,108
DUAL BEAM SCANNING APPARATUS HAVING DUAL BEAMS SCANNING DUAL PHOTOCELLS IN OPPOSITE DIRECTIONS WITH RESPECT TO A CENTERLINE
Harvey G. Burmeister, Alamogordo, N. Mex., assignor to the United States of America as represented by the Secretary of the Army
Filed Oct. 31, 1966, Ser. No. 591,381
Int. Cl. G01n *21/30*; G05b *21/00*
U.S. Cl. 250—219 6 Claims



Scanning beams sweep an image on a film as the image is advanced to a viewing area. The dual beams are received by sensors below the film and the sensors control the drive motor advancing the film. When the image on the film reaches the point where it should be stopped the dual beams' effect on the sensors is such that the drive motor is stopped in proper position for viewing.

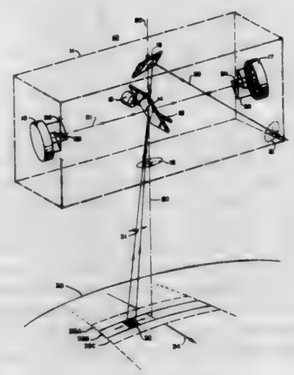
3,443,109
ELECTRO-OPTICAL READING DEVICE UTILIZING A PULSED SEMICONDUCTOR DIODE LAMP
Ronald Francis Johnston Broom and Cyril Hilsum, Baldock, and Donald Bayley and John Dennis Ralphs, Crowborough, England, assignors to National Research Development Corporation, London, England, a corporation of Great Britain
Filed Dec. 10, 1963, Ser. No. 329,565
Int. Cl. H01j *39/12*; G01n *21/30*; H01s *3/00*
U.S. Cl. 250—217 3 Claims

An optical reader device including a pulsed semiconductor diode lamp focussed through an information bearing medium, such as a punched paper tape or encoder, onto a plurality of photocells, which read the tape by detecting changes in the radiation received as the information



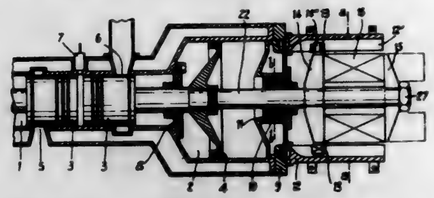
bearing member moves past the cells. The radiation detectors are gated by the pulse source so that they are sensitive to the modulated radiation.

3,443,110
SCANNER HAVING ROTATING DOUBLE-SIDED REFLECTOR
Dennis Kelsall, West Concord, Mass., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Nov. 2, 1966, Ser. No. 591,661
Int. Cl. H01j *39/12*
U.S. Cl. 250—220 4 Claims



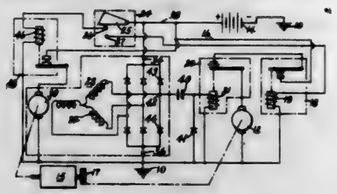
A meteorological radiation scanning system having a rotating double sided planar reflector. A pair of radiation detectors located at the focus of different focusing reflectors are mounted on opposite sides of the axis of rotation of the planar reflector. Radiation entering the device through a pair of openings is scanned by the planar reflector to simultaneously expose the detectors to different fields of view during each cycle of revolution of the planar reflector. Twice during each cycle of revolution the detectors are autocollimated by the planar mirror.

3,443,111
ALTERNATOR
Louis Monpetit, l'Etang-la-Ville, France, and Robert Huber, Zumikon, Switzerland, assignors to Societe des Generateurs Jarret (Societe Anonyme), Paris, France
Filed Jan. 23, 1967, Ser. No. 611,058
Claims priority, application France, Jan. 27, 1966, 47,428
Int. Cl. H02p 9/14; H02k 33/00
U.S. Cl. 290—1 19 Claims



Alternator in which the prime mover includes an internal combustion engine of the free piston type whose piston rod carries the field. The latter is reciprocable relative to the armature which is secured to fixed ways for followers provided on the field. The field comprises two or more packages of metallic laminations and clamping means for securing such packages directly to the piston rod.

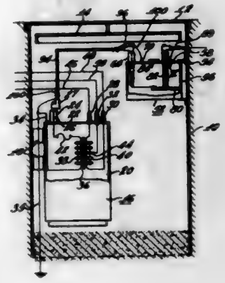
3,443,112
ELECTRIC CRANKING MOTOR AUTOMATIC DISCONNECT CIRCUIT
Gerald O. Huntzinger, Anderson, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 9, 1965, Ser. No. 513,162
Int. Cl. F02n 11/08, 11/14; H02p 9/04
U.S. Cl. 290—38 4 Claims



An electric cranking motor automatic disconnect circuit wherein the energizing circuit for the cranking motor is completed upon the closure of a pair of normally open auxiliary relay contacts. An electrical signal of a frequency which is a function of engine speed is applied across a frequency sensitive network included in the energizing circuit of the operating coil of a second relay having a pair of normally closed contacts which are connected in series with the armature of the cranking motor in one embodiment and in series with the operating coil of the auxiliary relay in another embodiment.

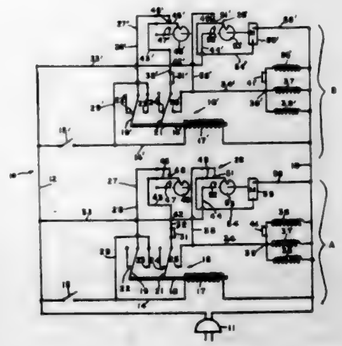
3,443,113
UNDERGROUND ELECTRICAL DISTRIBUTION SYSTEM
Ernest A. Goodman, Churchill Borough, William H. Mutschler, Jr., Bethel Park, and John M. Anderson, Avalon, Pa., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Sept. 19, 1966, Ser. No. 580,319
Int. Cl. H02j 3/00; H01f 27/02; H02g 9/10
U.S. Cl. 307—17 8 Claims

In an underground electrical distribution system a flush-mounted vault having a removable cover houses a sealed transformer (removably mounted on the wall or on the floor) and a sealed sectionalizing switch (removably mounted on the wall) each of which is separately removable without disturbing the other. The switch and transformer have their terminal studs located on top so that necessary cables can be removably connected thereto. Grounding means are provided for the two tanks and for



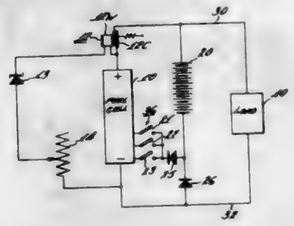
a shielded cable interconnecting the switch and transformer. Switch operating means are located on top of the switch tank. A viewing port is also located on top of the switch tank. In some embodiments, a fuse is provided in the transformer tank, in the switch tank, or in a separate sealed housing.

3,443,114
MULTI-CIRCUIT CONTROL SYSTEM
Edwin A. Morrison, Highland Park, Ill., assignor to Culligan, Inc., Northbrook, Ill., a corporation of Delaware
Filed Feb. 17, 1966, Ser. No. 528,225
Int. Cl. H02j 3/14
U.S. Cl. 307—41 10 Claims



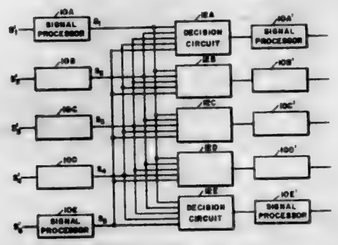
A multi-circuit control system for actuating two or more pieces of equipment, such as water softeners, so that only one piece of equipment is actuated at any one time, and the pieces of equipment may be actuated in sequence. The control system utilizes a pair of substantially identical circuits, each having a pulsing or signalling source, which actuates a relay, a switch actuated by the relay to energize a holding circuit, a lockout relay, the piece of equipment for that circuit, and a motor rotating a cam means. The cam means actuates a microswitch which operates a holding circuit. The lockout relay operates an interlock in the other circuit so that signal for the other circuit will not actuate the equipment controlled by the other circuit until the first circuit has completed its cycle.

3,443,115
MEANS FOR PARALLELING DIRECT CURRENT SOURCES HAVING DIFFERENT OUTPUT CHARACTERISTICS
Julius W. Timmerman, Jr., Brookfield, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed June 15, 1966, Ser. No. 557,668
Int. Cl. H02j 9/02
U.S. Cl. 307—66 10 Claims



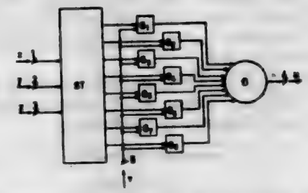
Means for paralleling a fuel cell and a battery to power an electrically driven vehicle such as a fork lift truck having widely varying current requirements includes means for permitting current flow from battery to load only when the current level is sufficiently high to cause the fuel cell voltage to fall below that of the battery and means for disconnecting the fuel cell from battery and load when the fuel cell voltage falls below a predetermined level. During periods of operation when the fuel cell voltage exceeds that of the battery, a diode is conductive to charge the battery from the fuel cell.

3,443,116
BISTABLE MAGNETIC DECISION SUMMING DEVICE
William C. Mann, Laurel, and Leland E. Hayden, Halethorpe, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 7, 1964, Ser. No. 343,290
Int. Cl. H01f 27/42, 29/42, 31/06
U.S. Cl. 307—88 6 Claims



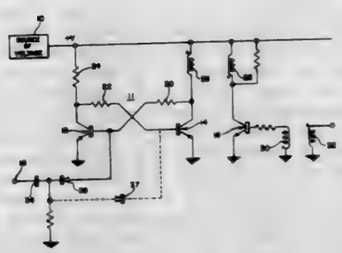
A magnetic decision circuit wherein each input core of a plurality of input cores receives one of a group of redundant binary signals. A drive signal is provided on an output winding associated with each core only when the input signal changes binary states. The output windings of the cores are linked to a summing magnetic core having two stable states of magnetization and which will assume a first of said states when a predetermined number of first polarity drive signals are provided and will assume the second of said states when a predetermined number of opposite polarity drive signals are provided. The threshold for switching the summing core may be chosen such that the core will switch when a majority of all the input signals are correct or the threshold may be chosen such that an output signal will be provided with only one correct working input.

3,443,117
SELF-ADAPTING SIGNAL TRANSFORMER
Jan Frederik Schuh, Emmasingel, Eindhoven, Netherlands, assignor to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 5, 1965, Ser. No. 445,593
Claims priority, application Netherlands, Apr. 7, 1964, 6403655
Int. Cl. H01f 27/42
U.S. Cl. 307—88 2 Claims



A signal transformer which is programmed by an external signal to provide a bivalent output in response to different combinations of signals on input terminals of the device.

3,443,118
MONOSTABLE MULTIVIBRATOR PULSE SHAPER
Roland T. Rogers, West Milford, N.J., assignor, by mesne assignments, to Amerace Esna Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 7, 1966, Ser. No. 532,360
Int. Cl. H03k 3/284
U.S. Cl. 307—88 6 Claims



1. A monostable multivibrator pulse shaper for delivering a usable count pulse from an oscillator to the input of a magnetic core counter comprising:
a source of positive voltage;
a magnetic memory comprising a toroidal core of square loop, magnetic material and a plurality of windings wound on the core;
a monostable multivibrator having a stable state and a quasi-stable state and comprising a first transistor and a second transistor;
a third transistor;
means connecting the source of positive voltage to the transistors of the monostable multivibrator and to the third transistor such that in the stable state of the monostable multivibrator, the first transistor conducts and the second transistor and the third transistor do not conduct and such that in the quasi-stable state of the monostable multivibrator the second transistor conducts and the first transistor does not conduct;

input means for applying an input pulse to the base of one of the transistors of the monostable multivibrator to cause the monostable multivibrator to change from its stable state to its quasi-stable state;

a first winding of the magnetic memory being connected to the second transistor such that when the second transistor conducts, full voltage appears across said winding to maintain the first transistor nonconducting;

a second winding and a third winding of the magnetic memory being connected to the third transistor such that when the input pulse ceases, the change in current flow through the first winding induces current flow in the second winding and the third winding in such directions as to bring the third transistor into conduction; and

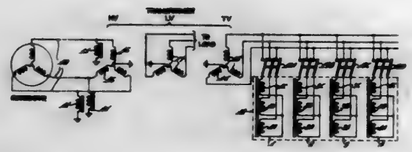
a fourth winding of the magnetic memory being placed such that an output pulse appears across it when the third transistor is conducting.

3,443,119

SHUNT REACTOR FOR TRANSMISSION LINE

Edward T. Norton, East Troy, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

Filed Feb. 28, 1967, Ser. No. 619,475
Int. Cl. H02h *1/04, 3/22*
U.S. Cl. 307—93 **19 Claims**



Overvoltages on a long, high voltage power transmission line, having a power transformer with a primary winding connected to one end of the line and a tertiary winding, are controlled by a shunt reactor having a casing enclosing a plurality of three phase reactor units and switching means for selectively connecting the reactor units to the tertiary winding. The reactor units are immersed in oil within the casing, and cooling means circulate the oil and dissipate the losses for the coils and magnetic yoke means of all the reactor units when all units are energized. Consequently the cooling means has adequate capacity to prevent the temperature rise of the coils and magnetic yoke means of a single reactor unit from exceeding its thermal rating when only the single reactor unit is in service even though excited above rated voltage, no loss of installed kvar. capacity occurs when all units are energized, and a substantial reduction in initial cost and in size is effected in comparison to a conventional dry type shunt reactor installation.

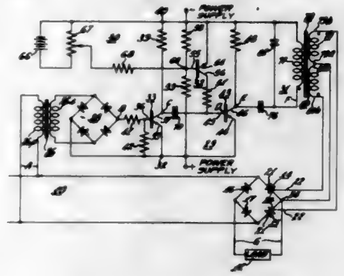
3,443,120

PULSE GENERATING SYSTEM FOR GATING SILICON CONTROLLED RECTIFIERS

Tom N. Thiele, Oconomowoc, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

Continuation-in-part of application Ser. No. 114,260, June 1, 1961. This application July 1, 1965, Ser. No. 473,889
Int. Cl. H03k *3/64, 3/26*
U.S. Cl. 307—106 **15 Claims**

A circuit for gating a controlled rectifier at a preselected point in each half cycle to control the power delivered by the rectifier to an electrical load includes a full wave rectifier for generating unidirecional pulses, a capacitor, switching transistor means responsive to the current zero between pulses for connecting the capacitor to a power source, variable impedance means including the emitter-collector circuit of a transistor for discharging the capacitor at a selected rate, monostable pulse forming transistor means for switching from a stable to



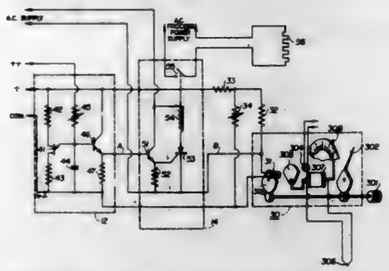
an unstable state in response to a predetermined level of charge on the capacitor and for changing back to the stable state when the capacitor has discharged to a second predetermined level, and differentiating means responsive to the change of the monostable means from the unstable to the stable state to produce a gating pulse for the controlled rectifier.

3,443,121

TIME PROPORTIONING TEMPERATURE CONTROL SYSTEM

Stephen P. Weisbrod, Mayfield Heights, Ohio, assignor to API Instruments Company, Chesterland, Ohio, a corporation of Ohio

Filed Dec. 20, 1965, Ser. No. 515,116
Int. Cl. H01h *35/00*
U.S. Cl. 307—117 **5 Claims**



A time-on proportioning control system has a comparator such as a meter relay, output from which is taken to a second comparator for comparing with a saw-tooth wave. The result is applied to a relaying device for controlling "power-on" as a percentage of each saw-tooth cycle.

3,443,122

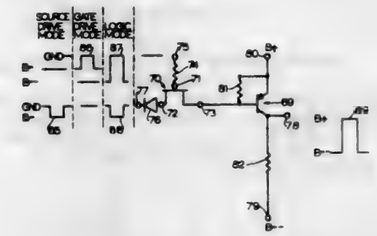
GATING CIRCUIT UTILIZING JUNCTION TYPE FIELD EFFECT TRANSISTOR AS INPUT DRIVER TO GATE DRIVER

John O. Bowers, Jr., Maitland, Fla., assignor, by mesne assignments, to General Dynamics Corporation, a corporation of Delaware

Filed Nov. 3, 1965, Ser. No. 506,238
Int. Cl. H03k *19/08*
U.S. Cl. 307—205 **5 Claims**

A two stage inverting gate driver circuit is described. The circuit is adapted to be embodied in an integrated circuit in a common substrate. A field effect transistor

is directly coupled to a conventional transistor in a manner such that the field effect transistor is normally inhibited and the conventional transistor is normally cut off. When a command level is applied to the field effect transistor, source-drain current flows to the base of the con-



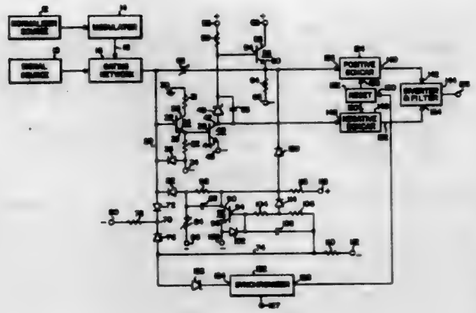
ventional transistor rendering it fully conductive. The voltage level produced at the output of the conventional transistor is dependent exclusively upon its operating power supply voltage and is independent of the command input to the field effect transistor.

3,443,123

APPARATUS FOR NORMALIZING A PHASE OR ANGLE RADAR INFORMATION SIGNAL TO REMOVE AMPLITUDE VARIATIONS

Warren L. Leyde, Seattle, and John E. Osterhaug, Edmonds, Wash., and Leland T. Thomasson, Arlington, Mass., assignors to Honeywell, Inc., Minneapolis, Minn., a corporation of Delaware

Filed June 21, 1965, Ser. No. 465,630
Int. Cl. H03k *5/20, 1/14*
U.S. Cl. 307—232 **6 Claims**



A normalizer which normalizes a signal with a reference signal is disclosed wherein the signal is divided by the reference signal in a pulse modulator and gating network and the pulse representation is integrated and filtered.

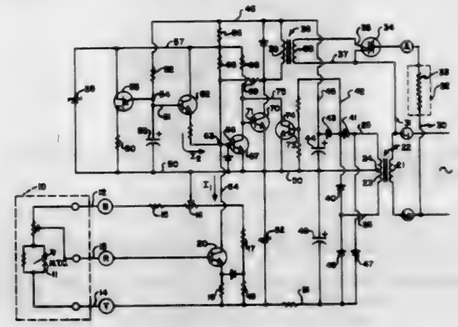
3,443,124

MODULATING CONDITION CONTROL SYSTEM

Balthasar H. Pinckaers, Edina, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed Sept. 9, 1966, Ser. No. 578,321
Claims priority, application Germany, Aug. 9, 1966, 60,192
Int. Cl. H03k *17/56*
U.S. Cl. 307—252 **9 Claims**

A solid state modulating condition control system responsive to temperature which operates a solid state power handling semiconductor means. The sensed condition is combined with a ramp signal to provide a control pulse to fire the power handling semiconductor



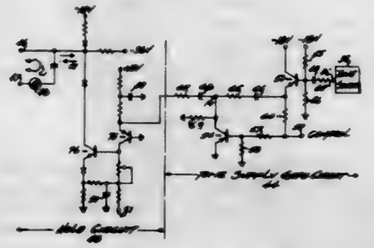
means when the applied line voltage phase is near zero. This is accomplished by combining an unfiltered full wave signal to short out the control except at or near the zero phase point.

3,443,125

TONE SUPPLY GATE CIRCUIT

Alfred M. Hestad, Chicago, Ill., assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland

Filed May 26, 1966, Ser. No. 553,200
Int. Cl. H03k *17/56*
U.S. Cl. 307—253 **7 Claims**



1. A gate circuit for supplying control signals to a principal circuit carrying useful signals, said gate comprising path means for transmitting said control signals while blocking said useful signals from said principal circuit, an isolated segment interposed in said path means, means for applying direct ground to said isolated segment while said gate is non-conductive, and means for applying resistive ground to said isolated section while said gate is conductive.

3,443,126

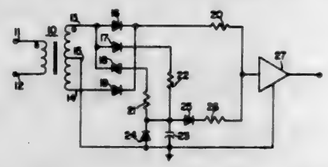
SINE WAVE TO SQUARE WAVESHAPING CIRCUIT

Lawrence L. Meyer, Houston, Tex., assignor to General Electric Company, a corporation of New York

Filed May 31, 1966, Ser. No. 553,898
Int. Cl. H03k *5/08*
U.S. Cl. 307—261 **3 Claims**

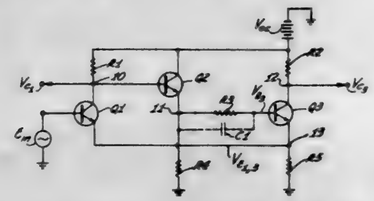
1. A circuit for squaring a sinusoid comprising a rectifier for rectifying said sinusoid, squaring means coupled to said rectifier to produce a square wave having a period equal to that of said sinusoid, signal storage means, means coupling the first half cycle of said sinusoid to said signal storage means, means coupling the signal stored by said signal storage means to said squaring means whenever the

amplitude of the stored signal exceeds the amplitude of the output of said rectifier, and means for discharging



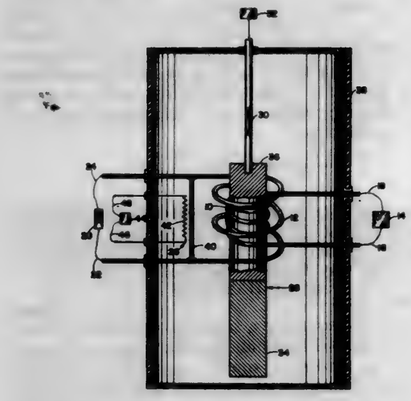
said signal storage means during the second half cycle of said sinusoid.

3,443,127
BUFFERED EMITTER-COUPLED TRIGGER CIRCUIT
Rhoderick H. Zimmerman, Canoga Park, Calif., assignor to Litton Systems, Inc., Beverly Hills, Calif.
Filed Dec. 6, 1965, Ser. No. 511,871
Int. Cl. H03k *3/26*
U.S. Cl. 307—290 **4 Claims**



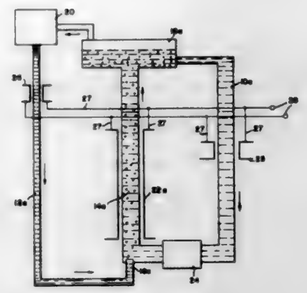
An emitter-coupled trigger circuit employing a buffer stage to intercouple first and second trigger stages. The buffer stage serves to reduce the impedance loading of the second trigger stage on the first trigger stage and to assure precise, but not excessive, cutoff of the second stage when the first stage is strongly conductive; thereby reducing hysteresis in the trigger circuit while at the same time reducing the complexity of circuit design.

3,443,128
SUPERCONDUCTING ALTERNATOR
John C. Fakan, North Olmsted, Ohio, assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Sept. 14, 1965, Ser. No. 487,343
Int. Cl. H02k *17/00*
U.S. Cl. 310—10 **7 Claims**



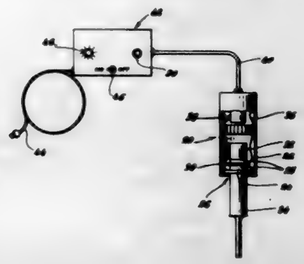
An alternator having windings of a superconductive material is cooled below the critical temperature. Actuation of a persistent current switch enables a field winding to be charged whereupon it acts as a permanent magnet. A reciprocating piston alternately places a ferromagnetic material and a diamagnetic material in the center of the alternator to change the magnitude of the field within the output winding thereby causing electrical power to be delivered to the load.

3,443,129
VAPOR-LIQUID CYCLE MHD POWER CONVERSION
Andrew G. Hammitt, Spring Lake, N.J., assignor to TRW Inc., Redondo Beach, Calif., a corporation of Ohio
Filed Mar. 17, 1966, Ser. No. 535,380
Int. Cl. H02k *45/00*; **G21d** *7/02*
U.S. Cl. 310—11 **4 Claims**



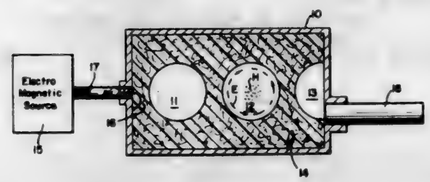
The working fluid of the MHD is a conductive liquid propelled by a vapor portion of the liquid or the vapor of a second liquid.

3,443,130
APPARATUS FOR LIMITING THE MOTIONAL AMPLITUDE OF AN ULTRASONIC TRANSDUCER
Andrew Shoh, Stamford, Conn., assignor, by mesne assignments, to Branson Instruments, Incorporated, Stamford, Conn., a corporation of Delaware
Continuation-in-part of application Ser. No. 265,751, Mar. 18, 1963. This application Dec. 8, 1964, Ser. No. 416,816
Int. Cl. H01v *7/00*
U.S. Cl. 310—8.1 **10 Claims**



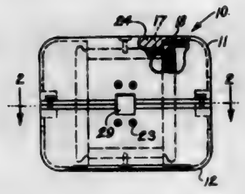
The disclosed embodiments relate to electrical circuit apparatus for driving a electrostrictive transducer in a manner to maintain its amplitude of vibration substantially constant or at least below a predetermined safe maximum despite variations in acoustical load. This is achieved by supplying the transducer with substantially constant current so as to maintain the transducer motional current and thus its motional amplitude substantially constant despite variations in the acoustical load to which it is coupled.

3,443,131
BROADBAND EXCITER FOR ELECTROACOUSTIC AND MAGNETOACOUSTIC TRANSDUCERS
Henry G. Oltman, Jr., Woodland Hills, Calif., assignor to TRW Inc., Redondo Beach, Calif., a corporation of Ohio
Filed Feb. 8, 1967, Ser. No. 614,612
Int. Cl. H01v *7/00*
U.S. Cl. 310—8.1 **7 Claims**



A broad band exciter, having a plurality of electromagnetically coupled dielectric resonators, is excited into resonance by a source of electromagnetic energy. An acoustic transducer is positioned adjacent one of the dielectric resonators for converting the coupled electromagnetic energy into acoustic energy.

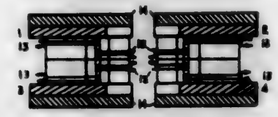
3,443,132
DYNAMOELECTRIC MACHINE WITH LONGITUDINALLY SPLIT HOUSING
Robert E. Walker, Great Lakes, Ill. (USS Buchanan DDG–14, % FPO, San Francisco, Calif. 96601)
Filed Apr. 19, 1966, Ser. No. 543,632
Int. Cl. H02k *15/14*
U.S. Cl. 310—42 **2 Claims**



A dynamoelectric machine in which the housing is formed of cast, identical, longitudinally extending halves, each half having a recess, which recesses complement one another to form an opening through which wires can extend. The stator yoke to receive the stator core is integral with the housing halves, and additional recesses at either side of the yoke provides support for the stator winding end turns.

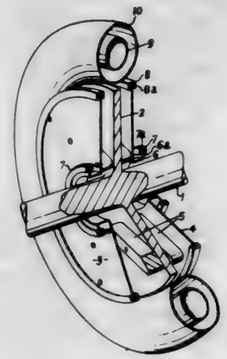
3,443,133
STATOR FOR AXIAL AIRGAP ELECTRIC ROTARY MACHINES
Jacques Henry-Baudot, Antony, Hauts-de-Seine, France, assignor to Printed Motors Inc., New York, N.Y.
Original application Feb. 4, 1961, Ser. No. 89,228, now Patent No. 3,304,598, dated Feb. 21, 1967. Divided and this application Oct. 21, 1966, Ser. No. 588,365
Claims priority, application France, Feb. 25, 1960, 819,800
Int. Cl. H02k *1/12*
U.S. Cl. 310—154 **3 Claims**

A permanent magnet stator structure for an axial airgap rotary electric machine is disclosed which is formed in two halves, each half comprising in turn a pair of semi-cylindrical plate-like members having a series of magnetic poles of alternating polarity arranged in a semi-circle thereon and terminating at opposite ends of the radial edges of the semi-circular plate-like members in a half



pole. The pairs of semi-cylindrical members are first joined in spaced relation to each other to form two halves of a stator and the two thus formed halves are joined on their diameters to form the complete stator.

3,443,134
HOMOPOLAR DYNAMOELECTRIC MACHINE
Brian O. Dowsett and Anthony D. Appleton, Newcastle-upon-Tyne, England, assignors to International Research & Development Company Limited, Fossway, Newcastle-upon-Tyne, England
Filed Feb. 28, 1966, Ser. No. 530,442
Claims priority, application Great Britain, Mar. 9, 1965, 10,062/65
Int. Cl. H02k *31/02*
U.S. Cl. 310—178 **12 Claims**

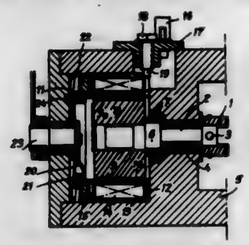


A homopolar machine having superconducting field coils is disclosed in which the rotor is of disc form and in a preferred construction has two conducting discs mounted on opposite sides of a support disc. A screening coil, also superconducting, can be arranged outside the annular field coil which surrounds the rotor.

3,443,135
ROTARY-MAGNET VARIABLE-VOLTAGE ALTERNATOR, ESPECIALLY APPLICABLE TO THE POWER-TRANSMISSION CONTROL OF AUTOMOBILE VEHICLES
Claude-Edmond Lombard, Billancourt, France assignor to Regie Nationale des Usines Renault, Billancourt, France, a French works
Filed May 9, 1966, Ser. No. 548,462
Claims priority, application France, May 12, 1965, 16,784
Int. Cl. H02k *21/12*
U.S. Cl. 310—191 **8 Claims**

An alternator particularly useful in servo-control systems for operating the power transmission of an automobile engine. There is provided means for maintaining the

output voltage of the alternator between a set of predetermined limits, the means comprising a set of pole pieces of the same polarity wherein only a limited number of



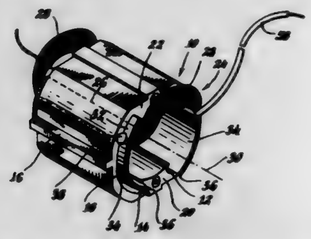
such pole pieces are movable. There is also provided means for varying the output of the alternator in response to the load on the engine.

3,443,136

SINGLE FIELD COIL MOTOR STATOR AND METHOD OF MAKING THE SAME

Arthur H. Freeman, Brockport, N.Y., and Hugh M. Forman, Waukesha, Wis., assignors to General Electric Company, a corporation of New York

Filed Mar. 28, 1967, Ser. No. 626,465
Int. Cl. H02k 19/26
U.S. Cl. 310—194 6 Claims



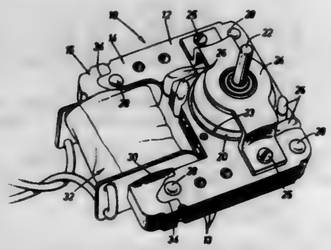
A single field coil motor stator wherein the coil sides are provided with insulating liners with heat sealable support tabs that extend to a second field pole. After the coil is wound, the liners sealed to the coil sides, and the coil bent into an arc, the coil is inserted over one stator field pole and the end turns bent radially outward. Cement is placed between liner and stator core, and the assembly is heat cured.

3,443,137

LAMINATIONS AND MAGNETIC CORE FOR MOTOR STATORS AND TRANSFORMERS

Russell A. McElroy, Guelph, Ontario, Canada, assignor to Dominion Electrohome Industries Limited, Kitchener, Ontario, Canada

Filed May 15, 1967, Ser. No. 638,479
Int. Cl. H02k 1/00, 1/06
U.S. Cl. 310—216 10 Claims



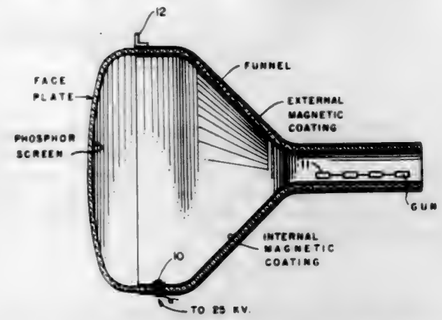
A two-part lamina of which one part has a protuberance and the other part has a complementary recess for receiving said protuberance. The protuberance is defined by two parallel side walls, and an outward wall consisting of a straight portion forming an obtuse angle with one side wall and a rounded portion between the straight portion and the other side wall. The lamina may be used to construct magnetic cores for motor stators and transformers.

3,443,138

MAGNETIC SHIELDING MEANS FOR CATHODE RAY TUBE

James W. Schwartz, Western Springs, Ill., assignor to National Video Corporation, Chicago, Ill., a corporation of Illinois

Filed Nov. 8, 1966, Ser. No. 592,812
Int. Cl. H01j 29/06, 1/52, 23/10
U.S. Cl. 313—64 7 Claims



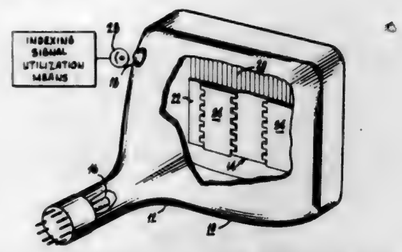
This invention relates to a cathode ray tube and, more particularly, to a television picture tube equipped with a unique magnetic shield in the form of a coating applied at least to the interior of the tube.

3,443,139

COLOR CATHODE RAY TUBE WITH RADIATION-EMITTING STRIP-LIKE INDEXING AREAS HAVING SERRATED EDGES

Roger D. Thompson, Lancaster, Pa., assignor to Radio Corporation of America, a corporation of Delaware

Filed Apr. 19, 1968, Ser. No. 722,682
Int. Cl. H01j 29/18
U.S. Cl. 313—92 10 Claims



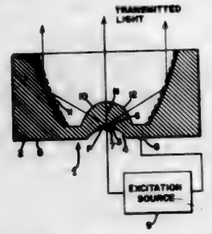
There is disclosed a color picture tube of the feedback or sensing type wherein the electron sensitive screen comprises a series of groups of different color emitting phosphor strips and a series of serrated-edge indexing strips or exposed strip-like areas extending parallel to the color phosphor strips and perpendicular to the direction of beam scan. Beam-produced radiation from the indexing strips is utilized to synchronize the application of color signals to the beam with the instantaneous position of the beam on the screen. The serrated edges of the indexing strips may be simple rectangular teeth of suitable length, stepped teeth, or sinusoidal teeth.

3,443,140

LIGHT EMITTING SEMICONDUCTOR DEVICES OF IMPROVED TRANSMISSION CHARACTERISTICS

Samuel W. Ing, Jr., Webster, and Harold A. Jensen, Liverpool, N.Y., assignors to General Electric Company, a corporation of New York

Filed Apr. 6, 1965, Ser. No. 445,953
Int. Cl. H05b 33/02, 33/12
U.S. Cl. 313—108 5 Claims



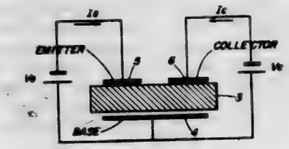
Light emitting diode constructed integral with a semiconductor body that is geometrically shaped to efficiently transmit emitted light with substantial directionality. In one embodiment the body is shaped as a hemispheroid surrounded by a reflective paraboloid, with the diode formed at the center of curvature of the hemispheroid. In another embodiment the body is shaped as a truncated paraboloid having a planar front surface, the diode being formed at the focal point of the paraboloid.

3,443,141

ELECTROLUMINESCENT FROM COOLED, HOMOGENEOUS GALLIUM SULFIDE CRYSTAL

Emanuel Mooser and John Low Brebner, Geneva, Switzerland, assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

Filed Aug. 4, 1966, Ser. No. 570,309
Int. Cl. H01j 1/63, 63/04
U.S. Cl. 313—108 5 Claims



The invention relates to devices and processes in which an extraordinary property of gallium sulfide is employed advantageously. The devices and processes utilize the newly discovered property of gallium sulfide, namely that electroluminescence once started in the gallium sulfide will continue under conditions less extreme than those required for the electroluminescence.

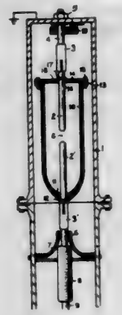
3,443,142

SPARK GAPS FOR INCORPORATION IN ENCLOSURES CONTAINING GAS UNDER PRESSURE

Georg Koppl, Birr, and Mathias Sanders, Neuenhof, Switzerland, assignors to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company

Filed Apr. 10, 1967, Ser. No. 629,673
Claims priority, application Switzerland, May 17, 1966, 7,118/66
Int. Cl. H05f 3/04
U.S. Cl. 313—182 5 Claims

An encapsulated gas insulated electrical switch installation is provided with a spark gap located within the completely closed and gas filled housing which contains the switching equipment, the spark gap being designed to break down at a certain limiting voltage in order to ground and protect the equipment. To minimize the adverse effects caused by decomposition of the gas as a result of an arc-over of the spark gap, the electrodes which establish the spark gap are placed within a comparatively small auxiliary container located within the equipment housing, and this container is placed in communication with the interior of the housing through a



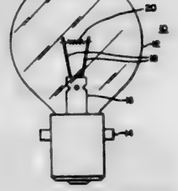
small pressure equalizing port in the container wall. When arc-over occurs at the gap, decomposition of the gas is substantially limited to that part of the gas which is confined within the auxiliary container, thus leaving the larger, remaining portion of the gas within the housing practically uncontaminated.

3,443,143

TUNGSTEN-BASE ALLOY AND FILAMENT

Ronald C. Koo, East Orange, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 29, 1967, Ser. No. 626,867
Int. Cl. H01j 19/06
U.S. Cl. 313—311 4 Claims



Tungsten-base alloy includes rhenium or osmium or mixtures thereof in solid solution as well as finely divided, dispersed particles of zirconium or hafnium borides or nitrides or mixtures thereof. The alloy, which can be used as an incandescible filament, displays high strength at high temperatures and reasonably good ductility at low temperatures.

3,443,144

INFRARED INCANDESCENT LAMP

Robert W. Freese, Jr., Manchester, N.H., assignor to Sylvania Electric Products Inc., a corporation of Delaware

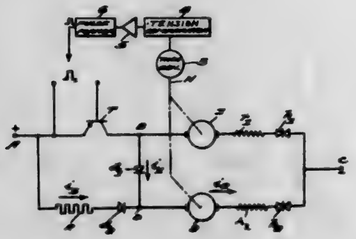
Filed Dec. 31, 1964, Ser. No. 422,683
Int. Cl. H01h 1/28; H01k 9/00, 1/18
U.S. Cl. 313—315 5 Claims



This invention concerns infrared incandescent electric lamps having an oval-shaped quartz envelope, with two

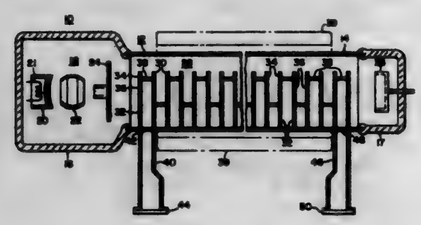
parallel tungsten filaments, extending the length of the lamp, and are mounted within said envelope.

3,443,145
SUPPLY DEVICE FOR AUTOMATIC CONTINUOUS WELDING INSTALLATIONS
Pierre Margrain, Chatenay-Malabry, France, assignor to Etablissements E. Ragonot, Malakoff, France, a body corporate of France
Filed May 12, 1967, Ser. No. 638,083
Claims priority, application France, May 13, 1966, 61,552
Int. Cl. H05b *31/18*
U.S. Cl. 314—69 3 Claims



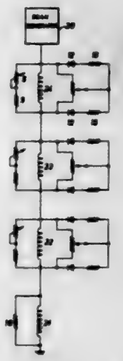
A power supply arrangement for a principal motor pushing electrode wire through a sheath to the work in continuous welding operations and which is connected electrically in parallel with an auxiliary motor drawing the wire at the exit end of the sheath comprises a transistor operating in commutation in the circuit between the two paralleled motors and the supply voltage source and a circuit for connecting the auxiliary motor directly to the supply voltage source during periods when the transistor is blocked, this circuit including a resistor and a diode and there being another diode connected between the collector of the transistor and the auxiliary motor for feeding the auxiliary motor when the transistor is conductive thus bypassing the resistor and the diode connected therewith.

3,443,146
CONDUCTIVE ELEMENTS INTERCONNECTING ADJACENT MEMBERS OF THE DELAY STRUCTURE IN A TRAVELING WAVE TUBE
Daniel C. Buck, Horseheads, N.Y., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 16, 1966, Ser. No. 527,817
Int. Cl. H01j *25/38*
U.S. Cl. 315—3.5 11 Claims



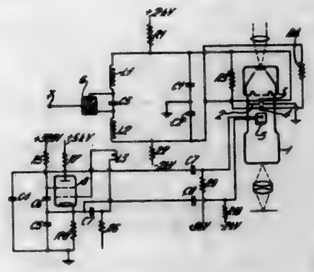
A traveling wave tube which includes a slow wave propagating structure having the electrical properties of a contra-wound helix, and a plurality of heat conductive members disposed between the slow wave propagating structure and a heat radiating surface to efficiently dissipate the heat.

3,443,147
TELEVISION CATHODE RAY TUBE APPARATUS
Hans-Dieter Schneider, Groszgerau, Germany, assignor to Fernseh GmbH, Darmstadt, Germany
Filed July 18, 1967, Ser. No. 652,164
Claims priority, application Germany, July 16, 1966, F 49,710
Int. Cl. H03k *5/00*; H01j *29/70*
U.S. Cl. 315—27 8 Claims



In a television cathode ray tube apparatus a circuit arrangement for obtaining independent correction of the amplitude and linearity deviations of the deflection waveform for the serially connected deflection coils of pickup tubes in a television apparatus by means of potentiometers in shunt to the deflection coils, the sliders of which are connected with both ends of the potentiometer by a diode resistor combination.

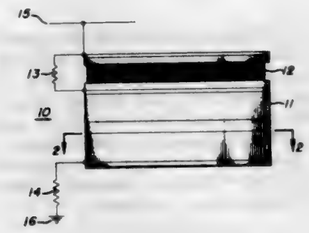
3,443,148
CAMERA TUBE DEFLECTION SYSTEM FOR PROVIDING BEAM SHUTTER ACTION
Alexander Edward Huston, Reading, and David Alwyn Procter, Basingstoke, England, assignors to United Kingdom Atomic Energy Authority, London, England
Filed Oct. 30, 1967, Ser. No. 679,045
Claims priority, application Great Britain, Nov. 3, 1966, 49,402/66
Int. Cl. H01j *29/52*
U.S. Cl. 315—30 4 Claims



One form of high-speed image-tube camera includes an image-tube having an aperture plate and a pair of deflector plates at each side thereof, and a waveform generating circuit for applying relatively phase-displaced waveforms to the pairs of deflector plates to provide pairs of stationary images. The invention provides an improved waveform generating circuit for such a camera comprising an inductor connected in parallel with a capacitor,

the inductor being divided into two series-connected portions by a triggerable switch, connections for charging the capacitor symmetrically about a reference potential, and connections for applying the voltage waveform across the capacitor to both pairs of deflector plates, the connections including means, e.g. resistors, for producing a phase displacement between the waveforms applied to the two pairs of plates.

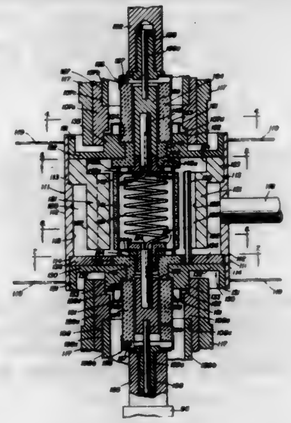
3,443,149
SPARK GAPS
Ramon B. Hazen, Medina, Ohio, assignor to The Ohio Brass Company, Mansfield, Ohio, a corporation of New Jersey
Filed Mar. 20, 1967, Ser. No. 624,375
Int. Cl. H01j *7/44*, *13/46*
U.S. Cl. 315—36 11 Claims



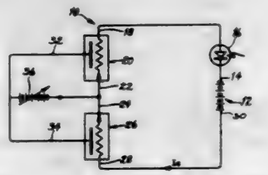
1. A spark gap comprising two gap plates of rigid ceramic material, a pair of two gap electrodes arranged between the plates, the adjacent faces of the plates being spaced apart to constitute an arc gap chamber for receiving an arc formed between the two gap electrodes, and the two electrodes diverging apart from the closest point thereof for continuous elongating movement of an arc in the arc chamber and movement along the arc electrodes, and means closing the peripheral extremity of the gap chamber comprising interengaging ridge and recess means extending along the peripheral extremities of the gap plates and defining the radial limit of the gap chamber, the arc gap chamber including as parts thereof an arc elongation chamber comprising parallel surfaces of the gap plates coextensive with the arc gap electrodes, extending to adjacent the ridge and recess means and an arc outer chamber comprising converging surface portions of the gap plates communicating with the arc elongation chamber adjacent the radial extremity of the gap plates, the gap plates comprising porous ceramic material which is permeable transversely through the walls thereof from the interior of the outer chamber to the exterior of the gap plates.

3,443,150
CROSSED-FIELD DISCHARGE DEVICES AND MICROWAVE OSCILLATORS AND AMPLIFIERS INCORPORATING THE SAME
James E. Staats, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed June 2, 1966, Ser. No. 554,806
Int. Cl. H01j *25/50*
U.S. Cl. 315—39.51 30 Claims

A crossed-field discharge device is disclosed comprising a hollow anode structure including a pair of coaxial annular members connected together at one end and a cathode structure disposed within the inner anode member and defining therewith an axially extending interaction space, the pair of anode members defining therebetween an axially extending annular space communicating with the interaction space, the anode structure having axially extending anode recesses therein in which are mounted rods supported independently both of said anode structure and said cathode structure; oscillators and amplifiers incorporating the crossed-field discharge device therein are also disclosed.



3,443,151
ELECTRICAL CONTROL CIRCUITS
William C. Myers, Ballwin, and David L. Granteer, St. Louis, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Nov. 30, 1965, Ser. No. 510,639
Int. Cl. H05b *37/02*, *39/04*, *41/36*
U.S. Cl. 315—169 9 Claims

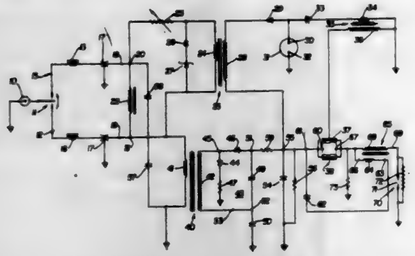


An electrical control circuit for electroluminescent (E.L.) devices including a pair of opposite-conductivity field effect transistors whose source-drain current paths are connected in series with a power supply and the E.L. device. One field effect transistor is of the enhancement type while the other is of the depletion type. The control or gate electrodes of each field effect transistor are connected to a variable control voltage source. The series combination of the two field effect transistors provides a combined peaking current-vs.-voltage transfer characteristic for a predetermined range of control voltages.

3,443,152
ELECTRICAL PULSE GENERATING APPARATUS
Louis H. Segall, Sidney, and Irving E. Linkroum, Hancock, N.Y., assignors to The Bendix Corporation, a corporation of Delaware
Filed Apr. 10, 1967, Ser. No. 629,467
Int. Cl. H05b *37/02*, *39/04*, *41/36*
U.S. Cl. 315—209 11 Claims

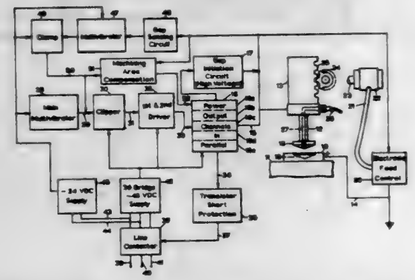
An electrical pulse generating system wherein untimed pulses of two levels of energy may be selectively supplied to a single load from a common source of electrical energy. The source is selectively connectable to different input terminals of two permanently linked condenser discharge circuits to selectively supply the source energy to one circuit or to divide the energy between the two cir-

cuits for charging the storage condensers in said circuits to preselected levels. One circuit is a power circuit for supplying pulses at one level of energy to the load independently of the other circuit through a control gap, and



the other circuit is a trigger circuit selectively adapted for energization simultaneously with the power circuit to trigger the control gap when the power circuit is charged to supply a different level of pulse energy to the load.

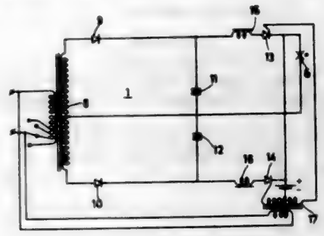
3,443,153
E.D.M. POWER SUPPLY WITH CURRENT ADJUSTING CIRCUITRY RESPONSIVE TO GAP CONDITION
Philip E. Berghausen, Cincinnati, Ohio, assignor to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed Oct. 23, 1967, Ser. No. 677,124
Int. Cl. H05b *37/02*
U.S. Cl. 315—224 **10 Claims**



An electrical discharge machining power supply circuit having means for detecting undesirable machining results upon a workpiece is provided with a supervisory control that automatically adjusts the amount of current output to the machining gap in accordance with the area of the work over which machining is occurring. The supervisory control receives an output signal from the detecting means and the output from the supervisory control varies in accordance therewith to adjust the main power output circuit to increase or decrease the current output capacity to the machining gap.

3,443,154
CONTROL CIRCUIT FOR FLASHING AN ARC DISCHARGE LAMP
Piet Hoekstra and Jan Bernardus Reint Teisman, Emmasingel, Eindhoven, Netherlands, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 20, 1965, Ser. No. 488,505
Claims priority, application Netherlands, Sept. 22, 1964, 6411006
Int. Cl. H05b *41/14, 37/00*
U.S. Cl. 315—240 **13 Claims**

6. A circuit for flashing an arc discharge lamp comprising, a source of alternating voltage of a first given frequency, first and second capacitors, first and second unidirectional conducting gating means, means individually interconnecting said voltage source with said first and second capacitors by means of said first and second gating means, respectively, first means for selectively opening each of said first and second gating means at said first frequency so as to charge said capacitors during alternate half cycles of said alternating voltage, third



and fourth unidirectional conducting gating means, means individually interconnecting said lamp with said first and second capacitors by means of said third and fourth gating means, respectively, and second means for selectively opening each of said third and fourth gating means at a second different frequency and in phase opposition thereby to alternately discharge said capacitors across said lamp to cause the lamp to flash at a frequency that is a multiple of said second frequency.

3,443,155
METHOD FOR MAKING A DUSTPROOF AND SHOCKLESS STATIC BAR
Harold Schweriner, Lansdale, Pa., assignor to The Simco Company, Inc., Lansdale, Pa., a corporation of Pennsylvania
Filed May 18, 1966, Ser. No. 551,015
Int. Cl. H05f *3/00*
U.S. Cl. 317—2 **3 Claims**

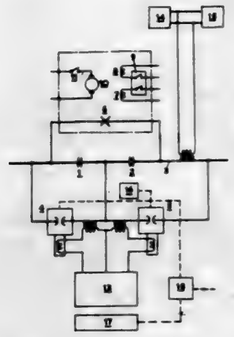


A dustproof and shockproof static bar formed by winding a wire conductor into a plurality of discharge elements of pigtail configuration having a coiled sleeve portion and a point continuous therewith and radially extending outwardly therefrom. The sleeve portions are then molded together with insulative rings therebetween into a tubular sheath of integral construction having alternate spaced conductive portions adapted to be capacitively coupled to the wire conductor of an insulative cable.

3,443,156
CONTROL CIRCUIT FOR SWITCHING DEVICES PROTECTING CAPACITORS SERIES-CONNECTED IN HIGH VOLTAGE LINES
John William Gatiss and William John Joyce, Stafford, England, assignors to The English Electric Company Limited, and British Insulated Callender's Cables Limited, both of London, England, and both British companies
Filed Sept. 27, 1966, Ser. No. 582,301
Claims priority, application Great Britain, Sept. 27, 1965, 40,946/65
Int. Cl. H02h *7/16, 3/00*
U.S. Cl. 317—12 **9 Claims**

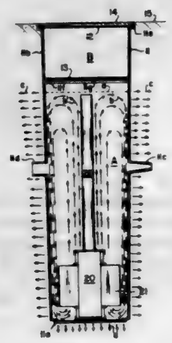
This invention relates to a control circuit for switching devices protecting capacitors connected in series in

multiphase high voltage lines. The switching devices comprise a spark gap adapted to break down immediately in response to an overvoltage so as to protect its associated capacitor and a "by-pass" switch provided subsequently to "short-out" the spark gap so as to relieve its duty if the overvoltage persists. In addition, the by-pass switch is



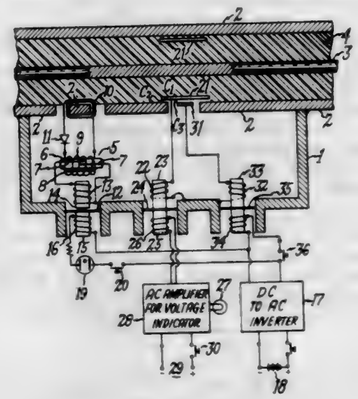
closed in response to other faults affecting the line or the control circuit itself, e.g., a fall in pneumatic pressure, and a mechanism is further provided by which the operation of a switching device in one phase results in the operation of the corresponding switching devices in all the other phases.

3,443,157
DIRECT BURIAL TRANSFORMER
Roy E. Uptegraff, Jr., Scottdale, Pa., assignor to R. E. Uptegraff Manufacturing Company, Scottdale, Pa., a corporation of Pennsylvania
Continuation-in-part of application Ser. No. 492,748, Oct. 4, 1965. This application Dec. 29, 1967, Ser. No. 707,342
Int. Cl. H02h *7/04, 7/14*
U.S. Cl. 317—15 **23 Claims**



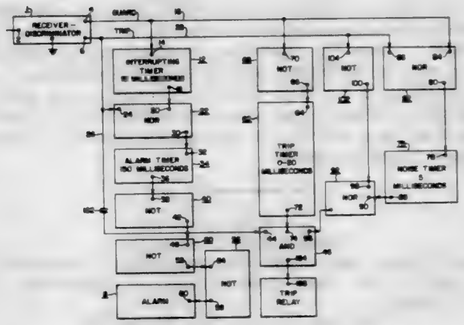
An electrical transformer construction is provided for direct to ground heat dissipation. The wall of its pot or housing defines a lower convection chamber for containing the transformer winding and auxiliary equipment, and defines an upper chamber for suitable control means that is sealed-off from a convection fluid used in the lower chamber. The transformer is of a wall construction and elongated design such that it eliminates the necessity for the use of air currents and permits the pot or housing to be fully buried in the ground with its wall in a direct heat transfer relation with the earth or ground.

3,443,158
FAULT CURRENT RECORDER AND INDICATOR FOR ELECTRICAL CIRCUITS
Richard H. Arndt, Lenox, Mass., assignor to General Electric Company, a corporation of New York
Filed Sept. 8, 1966, Ser. No. 577,971
Int. Cl. H02h *1/02, 3/28;* **G01r** *31/08*
U.S. Cl. 317—18 **25 Claims**



A fault current recorder and indicator for an electric power cable termination that is characterized by utilizing a magnetically actuated switch means to sense a fault current condition and store information regarding the occurrence of such a condition, in combination with readout means for ascertaining the nature of the information stored by the switch means.

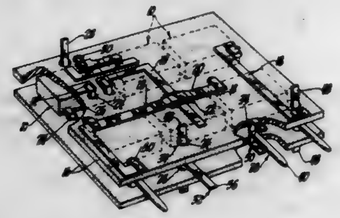
3,443,159
FREQUENCY SHIFT RELAYING APPARATUS
Conrad T. Altfather, Basking Ridge, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 6, 1966, Ser. No. 548,164
Int. Cl. H02h *3/38*
U.S. Cl. 317—36 **11 Claims**



1. In a relaying network, first and second signal actuated input means, a first output means, a plurality of timers, each said timer being operable to time out a time interval, a first control network interconnecting both of said input means and said first output means and includ-

ing a first and a second of said timers, said first timer having a lesser time interval than said second timer, said first control network being effective to place said first output means in a first condition solely when upon the expiration of said time interval of said second timer, said first control network including first circuit means interconnecting said first timer to said first input means and to said second timer, said circuit means being responsive to the expiration of said time interval of said first timer for preventing the timing out of said time interval of said second timer, said circuit means being responsive to a first energized condition of said first input means to initiate the timing of said time interval of said first timer, said network including second circuit means interconnecting said second timer to said second input means, said second circuit means being responsive to a first energized condition of said second input means to prevent the timing out of said time interval of said second timer, said first control network being effective to place said first output means in its said first condition solely upon the expiration of a concurrent time interval that both of said input means have been removed from their said first conditions, said concurrent interval being at least equal to said time interval of said second timer.

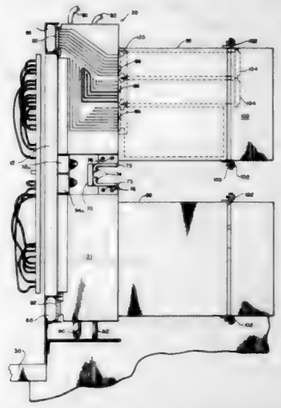
3,443,160
ELECTRONIC MODULE ASSEMBLY AND CONNECTOR MEANS THEREFOR
Edmond A. Salera, Santa Barbara, Calif., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 10, 1966, Ser. No. 533,295
Int. Cl. H02b *1/04*
U.S. Cl. 317—101 **7 Claims**



Terminal connectors are provided for an electronic module having spaced circuit boards. The connector includes a ribbon-like conductor extending through aligned apertures in the circuit boards. The conductor ends selectively make a contact with circuit conductors. A terminal pin is welded to the ribbon-like conductors at a point between the circuit boards and extends outwardly of the circuit board peripheries.

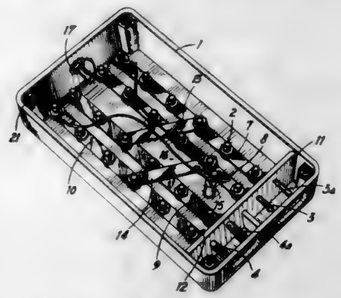
3,443,161
COMPUTER CIRCUITS
Jay B. King, Ann Arbor, Mich., assignor to Applied Dynamics, Inc., Ann Arbor, Mich., a corporation of Michigan
Filed Apr. 18, 1967, Ser. No. 631,665
Int. Cl. H02b *1/04, 9/00*
U.S. Cl. 317—101 **26 Claims**

An electrical distribution system for connecting large numbers of conductors in a small space, such as at the back of a patchbay or switchboard in a manner to facilitate modular expansion wherein pluralities of etched circuit cards having their planes perpendicular to the patchbay or switchboard are sandwiched together to form pluggable assemblies, to allow conductors leading from the patchbay or switchboard front edges of the cards to



be fanned out to other edges of the cards and distributed to adjacent cards of the same sandwich assembly.

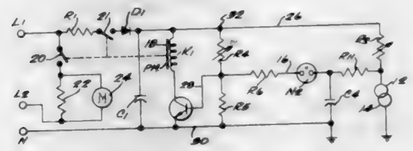
3,443,162
CURRENT DISTRIBUTOR
Jean-Claude Nudelmont, Courbevoie, France, assignor to Professional General Electronic Products, Courbevoie, France
Filed Mar. 30, 1967, Ser. No. 627,021
Claims priority, application France, Apr. 19, 1966, 58,070
Int. Cl. H02b *1/06;* **H01r** *13/46*
U.S. Cl. 317—118 **10 Claims**



A current distributor allowing simultaneous coupling of several load devices to either high or low load current supply, said distributor including sockets for receiving male plugs associated with the load devices which have connecting pins of varying spacing and configuration, and dimensions.

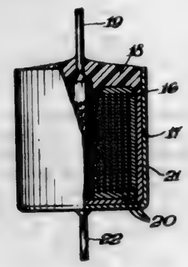
3,443,163
MOISTURE SENSING CONTROL USING SWITCHING TRANSISTOR FOR VOLTAGE REGULATION
Wilbert E. Beller, Park Ridge, and Abed G. Kahale, Roselle, Ill., assignors to Controls Company of America, Melrose Park, Ill., a corporation of Delaware
Filed Feb. 21, 1967, Ser. No. 617,696
Int. Cl. H01h *47/32*
U.S. Cl. 317—148.5 **4 Claims**

The moisture sensing control for clothes dryers charges a capacitor as moisture level decreases (resistance of leakage path increases) until neon bulb fires to pulse the base of a switching transistor to pass enough voltage through a coil in the collector circuit to cause a magnetic latch to open and shut down the dryer. A voltage network forward biases the transistor to pass a small amount of



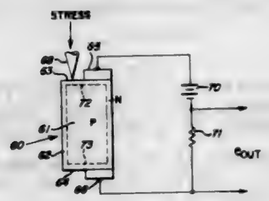
current through the coil—less than required to open the latch—which varies with variation of supply voltage to thereby function as a voltage regulator.

3,443,164
ROLLED ALUMINUM SLUG CAPACITOR
Henry D. Hazzard, Williamstown, Mass., assignor to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts
Filed Mar. 13, 1967, Ser. No. 622,724
Int. Cl. H01g *9/02*
U.S. Cl. 317—230 **10 Claims**



An aluminum foil capacitor has a highly etched porous foil permeable to liquid which is rolled in unformed state on a porous mandrel through which the porous rolled foil can be impregnated. Impregnation of the rolled foil includes the introduction of a forming electrolyte, film-forming the foil and subsequently providing an intimate electrical contact of a conductive material with the dielectric film. The contacting conductive material is either a wet electrolyte or a flowable electrically conductive material introduced into the porous rolled foil.

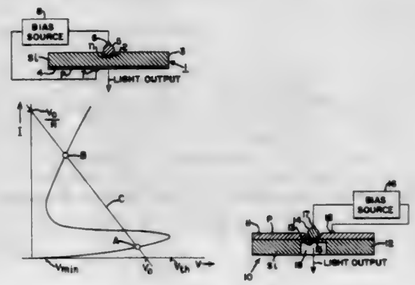
3,443,165
PIEZOJUNCTION DEVICE WITH AN ENCAPSULATING P-N JUNCTION
Wilhelm Rindner, Lexington, Mass., and Roger F. Nelson, Mountain View, Calif., assignors to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed Nov. 14, 1963, Ser. No. 323,621
Int. Cl. H01l *3/00*
U.S. Cl. 317—234 **6 Claims**



1. A strain transducer diode device comprising a first region of semiconductor material, a second region of semi-

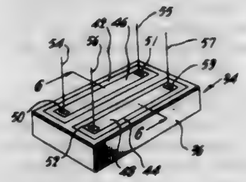
conductor material of different conductivity characteristics completely encapsulating said first region, said device having a barrier therein located between said first and second regions, a first ohmic connection to a surface of said second region, a second ohmic connection to a surface of said second region at a distance spaced apart from said first ohmic connection, and means for stressing said second region to produce a strain in said barrier.

3,443,166
NEGATIVE RESISTANCE LIGHT EMITTING SOLID STATE DIODE DEVICES
Samuel W. Ing, Jr., Webster, and Harold A. Jensen, Liverpool, N.Y., and Barry J. Stern, Hammond, Ind., assignors to General Electric Company, a corporation of New York
Filed Apr. 27, 1965, Ser. No. 451,122
Int. Cl. H01l *3/00, 5/00;* **H03k** *3/42*
U.S. Cl. 317—234 **8 Claims**



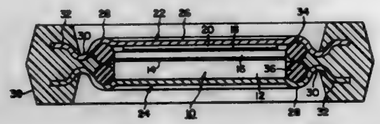
A negative resistance p-si-n diode device that is constructed so as to provide light emission out an end surface thereof. In one specific embodiment employing gallium arsenide, an extremely thin *p* region is zinc diffused into the semi-insulating region, on the order of .05 mil in thickness, so that the light generated in the vicinity of the p-si boundary during the state of high conduction is transmitted through the p region with relatively little attenuation. The device has application to computer circuitry in providing logic, memory and display functions.

3,443,167
STRAIN GAGE
Robert K. Willardson, Arcadia, and Harry Robbins, Los Angeles, Calif., assignors to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Aug. 27, 1965, Ser. No. 483,119
Int. Cl. H01l *3/00, 5/00*
U.S. Cl. 317—234 **10 Claims**



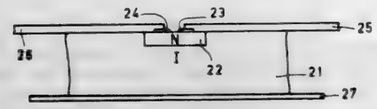
A temperature-compensated strain gage of semiconductor material having two regions of the same conductivity type but of opposite-sign resistivity-temperature coefficients. The regions are in parallel electrical relation and act in unison to temperature-compensate the strain gage.

3,443,168
RESIN ENCAPSULATED, COMPRESSION BONDED, DISC-TYPE SEMICONDUCTOR DEVICE
Henry R. Camp, Irwin, and Emil P. Polivka, New Stanton, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 26, 1966, Ser. No. 567,921
Int. Cl. H01l 5/02, 9/00
U.S. Cl. 317—234 9 Claims



This disclosure relates to a resin encapsulated semiconductor device in which a portion of contact members are held in a compressive electrical contact with a semiconductor wafer assembly as a result of having a second portion of the contact members embedded in the resin encapsulation.

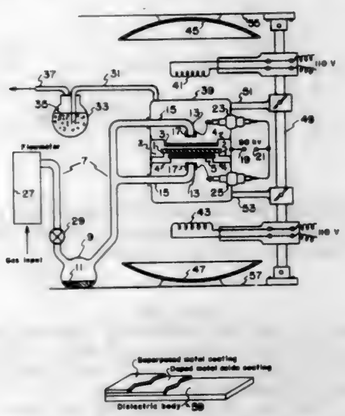
3,443,169
SEMICONDUCTOR DEVICE
Clive Arthur Peirson Foxell, Chesman, and John Gilbert Summers, Harrow, England, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Aug. 26, 1966, Ser. No. 575,355
Claims priority, application Great Britain, Aug. 26, 1965, 36,655/65
Int. Cl. H01l 3/00, 5/00
U.S. Cl. 317—234 11 Claims



A surface-oriented Gunn-effect device is described. In one embodiment, the device is built into a single crystal epitaxial deposit in a cavity of a semi-insulating substrate. In another embodiment, a plurality of such surface-oriented devices built into a common substrate are connected in parallel. In still another embodiment, the surface-oriented Gunn-effect device is combined with a varactor diode or mixer diode by way of a microstrip transmission line to form a microwave integrated circuit.

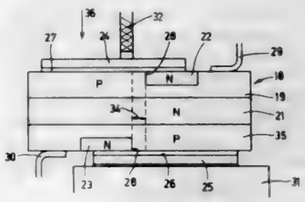
3,443,170
OHMIC CONTACT TO A SUBSTRATE OF INSULATING MATERIAL HAVING A DOPED SEMICONDUCTIVE OXIDE PROVIDING A STEPPED ENERGY GAP
Charles F. Pulvari, 2014 Taylor St. NE., Washington, D.C. 20018
Continuation of application Ser. No. 523,431, Jan. 27, 1966. This application Feb. 9, 1968, Ser. No. 705,263
Int. Cl. H01l 3/00, 5/00
U.S. Cl. 317—234 6 Claims

An ohmic contact for transferring electrical energy into a substrate of insulating material selected from the class consisting of metal oxide dielectrics, piezoelectric ceramics, piezoelectric crystals, ferroelectric ceramics, ferroelectric crystals, ferrielectric ceramics and ferrielectric crystals is obtained by a thin layer of semiconductor oxide doped with metal impurities, such as a doped tin oxide, in direct contact with the substrate and a metal layer overlying and in direct contact with the semiconductor oxide. The ohmic contact results from selecting the semiconductor oxide layer so that the top of the energy gap of the semiconductor oxide is between the conduction band level of the substrate and the Fermi



level of the metal layer and the conduction bands of the semiconductive oxide and of the substrate overlapping.

3,443,171
SYMMETRICAL SWITCHING CONTROLLED RECTIFIER WITH NON-OVERLAPPED EMITTERS
Ralph David Knott, Groenford, and Gerald David Bergman, Bushey Heath, England, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Continuation of application Ser. No. 566,641, July 20, 1966. This application June 3, 1968, Ser. No. 739,925
Claims priority, application Great Britain, July 23, 1965, 31,445/65
Int. Cl. H01l 5/02
U.S. Cl. 317—234 4 Claims

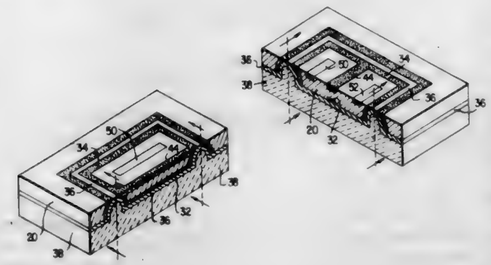


A four-junction bilateral switching device employing two shorted emitters obtained by metallic contacts which overlap and short-circuit the emitter-base junctions at opposite sides of the device. The opposed emitters are laterally spaced from one another such a distance that the charge carriers during conduction along one side of the device do not substantially leak into the adjacent side of the device, which could reduce the ability of the device to withstand applied reverse voltages.

3,443,172
LOW CAPACITANCE FIELD EFFECT TRANSISTOR
Ronald L. Koepp, Creve Coeur, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Nov. 16, 1965, Ser. No. 508,027
Int. Cl. H01l 11/14
U.S. Cl. 317—235 12 Claims

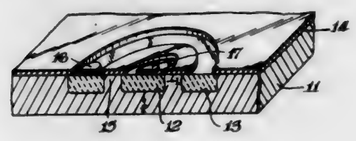
1. A low capacitance field transistor unit comprising,
(a) a layer of polysilicon having inwardly sloping edges in its upper portion, said edges surrounding a

substantially flat plateau forming the upper surface of said polysilicon layer,
(b) a silicon dioxide coating covering the edges and plateau of said polysilicon,
(c) a silicon semiconductor covering said coating and having an upper plane which intersects the top of the silicon dioxide coating covering the top of said edges,
(d) a small thickness of P-type conductivity in said semiconductor adjacent to the silicon dioxide covering said edges,
(e) a first channel of P-type conductivity in said semiconductor lying on the silicon dioxide coating over the plateau and extending to the small thickness of P-type conductivity in opposite sides of the plateau,



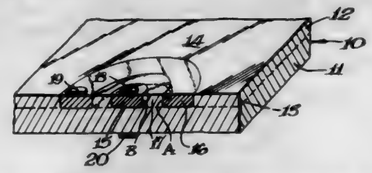
(f) a second channel of P-type conductivity in said semiconductor being substantially parallel with said first channel and overlying but not touching same, said second channel having an upper surface flush with the surface of said semiconductor and having a length which extends to said small thickness on opposite sides of said plateau, said semiconductor other than said small thickness and said first and second channels being of N-type conductivity,
(g) first and second metal contacts ohmically connected to said semiconductor surface on opposite sides of said upper channel, and
(h) an ohmic contact connected to said second channel.

3,443,173
NARROW EMITTER LATERAL TRANSISTOR
Wei K. Tsang and Karl M. Busen, Williamstown, Mass., assignors to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts
Filed May 17, 1966, Ser. No. 550,696
Int. Cl. H01l 11/10, 15/00
U.S. Cl. 317—235 5 Claims



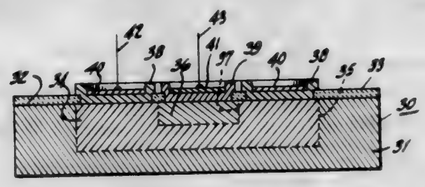
Diffused P-type emitter and collector regions are closely spaced in an N-type body at a major surface thereof. The highest useful lateral injection is provided by an emitter which has a lateral area much greater than its planar area, and a collector which has a lateral area at least as great as the emitter lateral area. The N-type body is treated to provide high charge carrier lifetime so as to reduce vertical injection from the emitter.

3,443,174
L-H JUNCTION LATERAL TRANSISTOR
Karl M. Busen, Joseph Lindmayer, William C. Schneider, and Wei K. Tsang, Williamstown, Mass., assignors to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts
Filed May 17, 1966, Ser. No. 550,697
Int. Cl. H01l 11/00
U.S. Cl. 317—235 4 Claims



Laterally spaced emitter and collector regions of equal impurity concentration and of one conductivity type extend through a homogeneous layer of low impurity concentration of the opposite conductivity type into engagement with a high impurity concentration region of said opposite conductivity type. The impurity concentration in the high impurity concentration region is greater than the impurity concentration in the emitter and collector regions. The impurity concentration in the low impurity concentration layer is less than the impurity concentration in the emitter and collector regions. By means of this construction the vertical emitter current into the high impurity concentration region is negligible in comparison to the lateral emitter current into the low impurity concentration base layer between the emitter and the collector.

3,443,175
PN-JUNCTION SEMICONDUCTOR WITH POLYCRYSTALLINE LAYER ON ONE REGION
Bohdan R. Czorny, Bound Brook, and Eric F. Cave, Somerville, N.J., assignors to Radio Corporation of America, a corporation of Delaware
Filed Mar. 22, 1967, Ser. No. 625,061
Int. Cl. H01l 11/02
U.S. Cl. 317—235 8 Claims



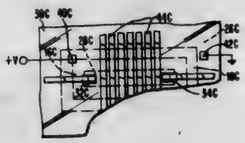
A junction device comprising a semiconductive body which includes at least two regions of different conductivity types, a PN junction between the two regions, and a layer of polycrystalline semiconductive material on one of the two regions. The polycrystalline layer is of the same conductivity type as the region of the body which underlies the layer.

3,443,176
LOW RESISTIVITY SEMICONDUCTOR UNDERPASS CONNECTOR AND FABRICATION METHOD THEREFOR
Benjamin Agusta and Martin S. Hess, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Mar. 31, 1966, Ser. No. 539,123
Int. Cl. H01l 11/10, 15/00
U.S. Cl. 317—235 8 Claims

A low resistivity semiconductor underpass connector for integrated semiconductor circuits.

In an integrated circuit structure having a semiconductor substrate of a first type conductivity carrying an

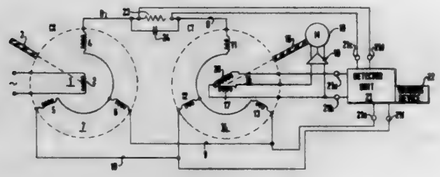
epitaxial layer of opposite type conductivity, a buried low resistivity region of said opposite type conductivity located in the surface portion of said substrate abuts a diffused low resistivity central region of said first type conductivity extending from the upper surface of said epitaxial layer to the buried low resistivity region. A diffused outer isolation region of said first type conductivity in said epitaxial layer is spaced from and surrounds said central region, enclosing between said central region and said outer isolation region a portion of said epitaxial layer which abuts the periphery of said buried region to



form an inner isolation region around said central region. The isolated central region is the underpass connector to which a pair of spaced, metal electrical contacts are connected.

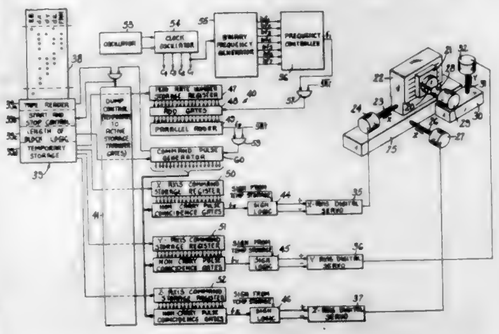
The semiconductor connector is formed by the same diffusion steps utilized in the formation of the integrated circuits, the buried region being created by the diffusion operation used in simultaneously forming buried layers for active devices in the integrated circuit, and the central region and outer isolation being created by the diffusion operation used in forming the isolation for the active and passive devices.

3,443,177
SYNCHRO CONTROL SYSTEMS AND SYNCHRO DEVICES FOR USE THEREIN
Gordon L. McWilliam, The White House, The Avenue Churchdown, Gloucestershire, England; Dennis W. Dudley, 13 Tretawn Gardens, Tewkesbury, Gloucestershire, England; and Terence J. Grimwood, Cottesbrook, Bentham, Shurdington, Cheltenham, Gloucestershire, England; and John Berwick Holmes, 1 Auchenmaid Drive, Largs, Ayrshire, Scotland
Filed Dec. 10, 1965, Ser. No. 513,015
Claims priority, application Great Britain, Dec. 11, 1964, 50,456/64; Oct. 20, 1965, 44,430/65
Int. Cl. H02p *1/54, 5/46, 7/74*
U.S. Cl. 318—18 **15 Claims**



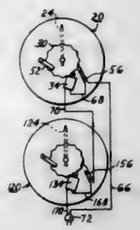
A self-monitoring synchro system comprises a synchro control transformer having an energized three-phase stator and a rotor which includes a monitor winding inclined to the normal servo-nulling winding. A detector operates a warning device if the induced signal-level in the monitor winding departs from a range consistent with correct servo-nulling of the rotor. Direct current is injected in the stator-energization circuit and the detector monitors the resultant potentials at spaced circuit-points to give warning of circuit-discontinuity.

3,443,178
SERVO SYSTEM
Johann F. Reuteler, Elmwood, Conn., assignor to Pratt & Whitney Inc., West Hartford, Conn.
Filed Mar. 4, 1964, Ser. No. 349,216
Int. Cl. H02p *1/54, 5/46*
U.S. Cl. 318—18 **27 Claims**



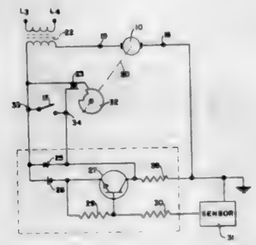
This disclosure relates to a servo system having both position and velocity loops. A feedback signal indicative of both extent of movement and velocity is derived. This feedback signal is compared with a command signal to derive a representation of position error and a velocity signal proportional to the position representation. The proportional velocity signal is then compared with the feedback signal to provide a representation of the difference therebetween and a second velocity signal is then derived. The first and second velocity signals are then combined in a predetermined relation to provide a resultant signal for moving the object at the desired velocity.

3,443,179
RECIPROCATING MOTOR RATCHET AND PAWL REMOTE POSITION INDICATOR
Edward L. Parr, El Cajon, Calif., assignor to Wendell L. Thompson, Burbank, Calif.
Filed Oct. 18, 1965, Ser. No. 497,036
Int. Cl. G05b *1/04*
U.S. Cl. 318—21 **2 Claims**



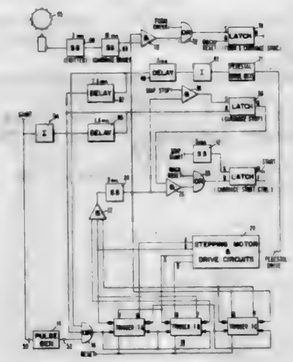
An electrically actuated indicating system for indicating data from and to remotely disposed stations. The system includes indicators which can function either as masters or as slaves. Each indicator includes a manually actuated hand which turns a ratchet wheel, the teeth of which actuate a switch for controlling a motor having a reciprocating armature. The motor is pivotally mounted and the armature is biased toward the teeth of the ratchet wheel. The motors are connected in series circuit relation.

3,443,180
MOTOR CONTROL SYSTEM FOR A TIMER
James A. Hirsch and Robert F. Shelton, Indianapolis, Ind., assignors to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware
Filed Sept. 7, 1965, Ser. No. 485,289
Int. Cl. H02p *1/58, 1/04, 3/00*
U.S. Cl. 318—102 **10 Claims**



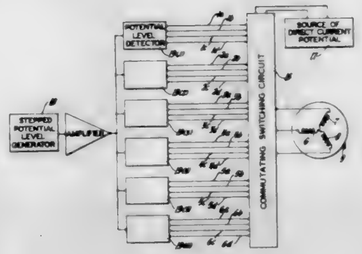
A device for controlling the operation of an appliance including means for controlling motor of a timer and a motor of the appliance. The means including sensing means coupled to a power source responsive to a state of the appliance whereby energizing power from the power source to the motor means of the timer is applied. A switching means operated by the motor means of the timer and coupled to the motor means of the appliance and to the motor means of the timer for energizing the motor means of the appliance and for maintaining the motor means of the timer energized during selected time intervals. Another switching means operated by the motor means of the appliance and coupled to the motor means of the appliance and to the motor means of the timer for maintaining the motor means of the timer and the motor means of the appliance energized.

3,443,181
DRIVE CIRCUIT FOR CARRIAGE STEPPING MOTOR
Eugene T. Kozol, Binghamton, and Joseph P. Pawletko, Endwell, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Mar. 28, 1966, Ser. No. 537,913
Int. Cl. H02k *29/02;* **H02p** *3/08*
U.S. Cl. 318—138 **6 Claims**



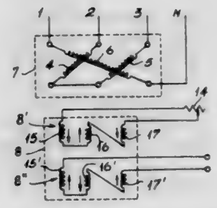
A counter driven by pulses from a ramp-controlled variable frequency pulse generator applies a predetermined number of pulses at gradually decreasing intervals to a stepping motor. At the predetermined count the pulse generator is stopped and delay circuits apply independently of the pulse generator a predetermined number of stop pulses to the motor at successively greater intervals to bring the motor to a stop.

3,443,182
SYSTEM FOR OPERATING ALTERNATING CURRENT INDUCTION TYPE MOTORS FROM A DIRECT CURRENT POTENTIAL SOURCE
Donald E. Graham, Trotwood, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 20, 1966, Ser. No. 580,822
Int. Cl. H02k *29/04*
U.S. Cl. 318—138 **7 Claims**



A system or producing switching signals for triggering silicon controlled rectifier commutating switches conductive in the proper sequence to operate an alternating current induction motor from a direct current potential source. A potential level detector circuit adjusted to be responsive to a specific potential level to produce an output signal is provided for each silicon controlled rectifier commutating switch. The output circuit of a stepped potential level generator is applied to the input circuitry of all of the potential level detectors in parallel whereby successive trigger signals are produced with each successive step of the stepped potential level generator output wave form.

3,443,183
REGULATED THREE-PHASE ASYNCHRONOUS ELECTRIC MOTORS
Fernando Pagano, M.T. de Alvear 2210, Ciudadela, Buenos Aires, Argentina
Continuation-in-part of application Ser. No. 376,542, June 19, 1964. This application Nov. 25, 1966, Ser. No. 596,906
Int. Cl. H02k *17/02*
U.S. Cl. 318—222 **14 Claims**

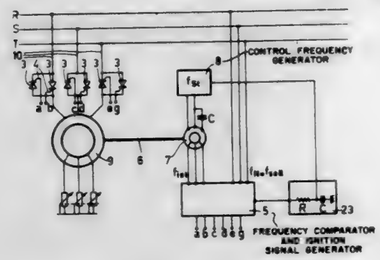


A regulated, three-phase, four wire, asynchronous electric motor including means for inducing a current in the neutral conductor whereby speed and braking regulation of said motor is achieved.

3,443,184
CIRCUIT ARRANGEMENT FOR CONTROLLING THE SPEED OF A COMMUTATOR OR INDUCTION MOTOR

Jurgen Lennarich, Hamburg, Germany, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

Filed July 28, 1966, Ser. No. 568,435
Claims priority, application Germany, Sept. 4, 1965, F 37,606
Int. Cl. H02p 1/26, 3/18, 5/38
U.S. Cl. 318—227 14 Claims

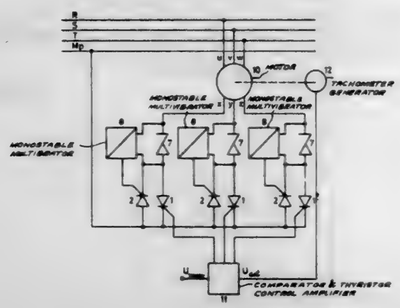


A speed control circuit for an alternating current motor wherein the motor windings are fed alternating current via controlled rectifiers. An induction machine, adapted to operate as a frequency converter, has the rotor thereof mounted to be driven by the controlled motor and its stator windings supplied from a variable frequency generator. The output from the rotor of the induction machine is compared with the current supplied to the motor, the resultant output being utilized as ignition signals for the controlled rectifiers.

3,443,185
CIRCUITRY AND METHOD OF STRIKING THYRISTORS IN INVERSE-PARALLEL OPERATION

Kurt Wilhelm Gunter Sowa, Frankfurt am Main, Germany, assignor to Richard Heim, Efferen, Kreis Cologne, Germany

Filed Aug. 2, 1966, Ser. No. 569,612
Claims priority, application Germany, Aug. 3, 1965, H 56,746
Int. Cl. H02p 7/62
U.S. Cl. 318—227 5 Claims

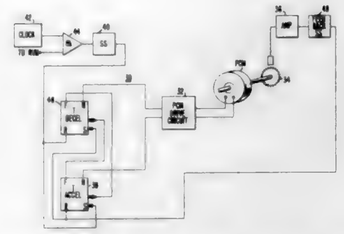


Method and apparatus for triggering a pair of thyristors in inverse parallel comprising circuitry including a resistor in parallel with a Zener diode for sensing the triggering of the first thyristor and a delay circuit for triggering the second thyristor a predetermined time after the triggering of the first thyristor.

3,443,186
REVERSING MOTOR DRIVE FOR TYPE BAR

Van C. Martin, Boulder, Colo., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Mar. 28, 1966, Ser. No. 537,912
Int. Cl. H02p 1/22, 1/40, 3/20
U.S. Cl. 318—257 7 Claims

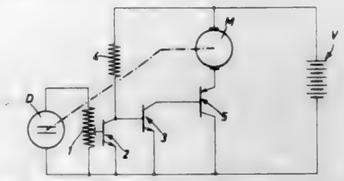


1. A control circuit for a direct current motor comprising:
- a clock having an oscillator driving a multistage counter of bistable devices to produce clock pulses,
- a source of feedback pulses having a rate dependent on the motor speed,
- circuit means including a first bistable device having on and off states operative to connnect the motor to a source of electrical energy to develop forward torque in the motor in the on state,
- circuit means including a second bistable device having on and off states operative to connect the motor to a source of electrical energy to develop reverse torque in said motor in the on state,
- means connecting the speed dependent pulse source to said first bistable device to switch said first device to the off state,
- other means connecting the speed dependent pulse source to the multistage counter selectively operable to reset the bistable devices of said counter to different values,
- means connecting the counter to said second bistable device operative to switch said second device to the off state,
- circuit means interconnecting the first and second bistable devices and respectively connecting the first and second bistable devices to the counter and to the source of feedback pulses operative to switch the first and second bistable devices to the on state.

3,443,187
SYSTEMS FOR REGULATING THE SPEED OF DIRECT-CURRENT MOTORS AND APPLICATIONS THEREOF

Marcel Beaulieu, 60 Rue Auguste-Comte, Fontenay-Sous-Bois, Val-de-Marne, France

Filed Jan. 19, 1966, Ser. No. 521,642
Claims priority, application France, Jan. 29, 1965, 3,810
Int. Cl. H02p 5/06; H02k 27/20
U.S. Cl. 318—327 1 Claim

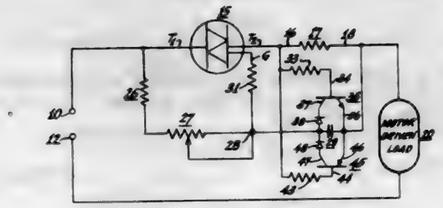


Speed-regulating system for direct-current motors which are supplied from a direct-current source and suitable for use in mechanisms of the class of motion picture cameras, phonograph turntables and tape recorders, comprising an electromechanical generator for producing a regulating current characterized in that the D.C. motor is positively coupled to an electromechannical current generator whose voltage is a function of the speed of the motor and controls an electronic relay which is inserted in the motor supply circuit, the arrangement being such that the motor supply current is an inverse function of the speed of the motor.

3,443,188
SWITCHING CIRCUITS

Austin J. Mortimer, Oldwick, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Feb. 27, 1967, Ser. No. 618,801
Int. Cl. H02p 5/00; H02k 27/20; G05b 5/01
U.S. Cl. 318—332 6 Claims

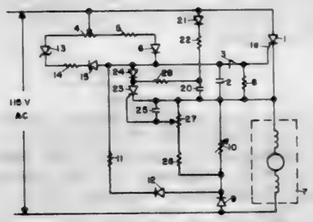


There is disclosed a switching circuit for use with a motor-driven load wherein changes in the load factor are automatically compensated for by an increase in supplied power to the input terminals of the motor. The circuit utilizes a triac, an RC time constant circuit, and a feedback element, wherein changes in power requirements of the motor are sensed by the feedback element which then operates to compensate the net effect of the time constant circuit used to trigger the triac in a manner whereby the conduction angle of the triac is advanced or retarded as the case may be.

3,443,189
MOTOR CONTROL AND OVERLOAD PROTECTION

Benjamin F. Gilbreath, 427 Lynn St., Richardson, Tex. 75080

Filed Mar. 24, 1967, Ser. No. 625,823
Int. Cl. H02p 5/12, 7/24, 7/58
U.S. Cl. 318—345 11 Claims

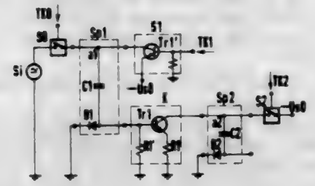


An apparatus for controlling the speed of motor driven tools through the use of proportional power control. A thyristor, i.e., silicon controlled rectifier is energized from an alternating current source and supplies power to an inductive load. Variable control is provided for unidirectional power supplied through a half wave silicon controlled rectifier to a rotating machine which has substantial inductance. The control system permits the motor to be operated over a wide range and provides a high degree of feedback at near zero speed without taps on the motor. Overload protection for the system is also provided.

3,443,190
CIRCUIT FOR THE TRANSFER OF STORED VOLTAGES

Hans-Martin Christiansen, Munich-Solln, Germany, assignor to Siemens Aktiengesellschaft, a corporation of Germany

Filed Mar. 1, 1965, Ser. No. 435,830
Claims priority, application Germany, Mar. 5, 1964, S 89,856
Int. Cl. H02j 5/00; H03k 3/00, 17/60
U.S. Cl. 320—1 13 Claims

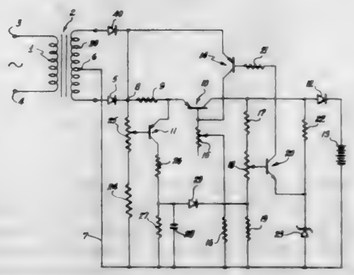


A circuit for use in electrical signal and measuring technology in which a first potential source storage unit is connected to a second storage unit over a current amplifier having a low-ohmic input and a high-ohmic output and where a switch is present so that a controlled transfer of energy from the first storage unit to the second can be obtained.

3,443,191
BATTERY CHARGER WITH LOW CURRENT CUTOFF

Lewis A. Medlar, Lansdale, Pa., assignor to Fox Products Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Sept. 15, 1966, Ser. No. 579,774
Int. Cl. H02j 7/10
U.S. Cl. 320—24 4 Claims



1. An apparatus for providing a controlled charging current to a battery comprising the combination of:
- input circuit means connectable to a source of alternating current;
- rectifier circuit means connected to said input circuit means and having a DC output terminal for providing rectified current at said output terminal;
- a battery to be charged;
- a first transistor having base, emitter and collector electrodes,
  - the emitter-collector circuit of said first transistor being connected in series circuit relationship between said DC output terminal and said battery;
- a first voltage divider circuit connected in parallel circuit relationship with said battery;

a second voltage divider circuit connected in parallel circuit relationship with said battery;

a second transistor having base, emitter, and collector electrodes,

the base-emitter circuit of said second transistor being connected between an intermediate point on said first voltage divider circuit and an intermediate point on said second voltage divider circuit;

first circuit means interconnecting said collector electrode of said second transistor and said base electrode of said first transistor,

said second transistor and said first circuit means being responsive to increasing battery terminal voltage as divided by said first and second voltage divider circuits to control the conductivity of said first transistor and to diminish charging current to said battery to a preselected low level;

a third transistor having base, emitter and collector electrodes; and

second circuit means including said third transistor connected between said DC output terminal and said second voltage divider,

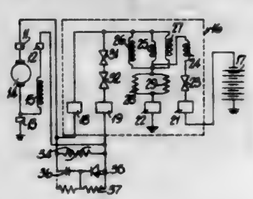
said second circuit means being responsive to charging current flow at said preselected low level to render said first transistor nonconductive.

3,443,192

ARC SUPPRESSION CIRCUIT FOR ROAD VEHICLE BATTERY CHARGING SYSTEM

Roger William Nolan, Redditch, and Brian Gilbert, Sutton Coldfield, England, assignors to Joseph Lucas (Industries) Limited, Birmingham, England, a British company

Filed Oct. 4, 1966, Ser. No. 584,239
Claims priority, application Great Britain, Oct. 18, 1965, 44,017/65
Int. Cl. H02j 7/04; H02h 3/20
U.S. Cl. 320—61 **9 Claims**



In a battery charging system, a generator charges the battery and the voltage regulator limits the output voltage of the generator by opening a pair of contacts in series with the generator field winding whenever the output voltage of the generator exceeds a predetermined value. In order to increase contact life, a voltage-sensitive resistor, which has a resistance which decreases as the voltage across it increases, is connected across the field winding or the contacts to limit the voltage developed across the contacts.

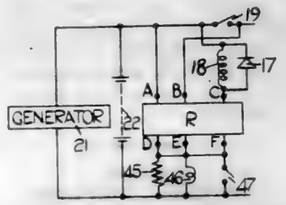
3,443,193

BATTERY CHARGING SYSTEMS FOR USE IN ROAD VEHICLES

Maurice James Wright, Birmingham, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England

Filed Nov. 28, 1966, Ser. No. 597,449
Claims priority, application Great Britain, Dec. 15, 1965, 51,983/65
Int. Cl. H02j 7/10
U.S. Cl. 320—64 **4 Claims**

This circuit relates to a generator control system the control aspect of which is divided into two parts. The first part is a voltage sensing stage which is connected directly across the battery so as to conduct at all times. The second part is an output drive stage which controls



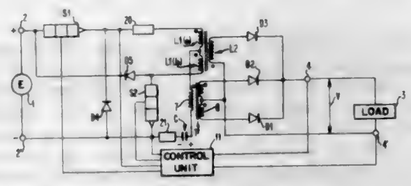
the field. The latter stage is coupled to the battery through the ignition switch so that it will dissipate power only when the ignition switch is closed.

3,443,194

DC-TO-DC CONVERTER WITH CONTINUOUS FEED TO THE LOAD

John R. Cielo, Kingston, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Sept. 14, 1967, Ser. No. 667,698
Int. Cl. H02m 3/32
U.S. Cl. 321—2 **13 Claims**



Disclosed are improved DC-to-DC converter circuits which have regulated output voltages to compensate for source and load variations. The regulation is achieved by controlling the ratio of the "ON" to "OFF" time of the power source and other power reservoirs. The converter features besides the "ORING" of power to the load, the inclusion of transient inhibiting inductors in series with the switching transistors and transformer primary whenever those transistors are conducting. The "ORING" of power to the load is achieved through the transient inhibiting inductors which act as storage reservoirs to store energy while power is being delivered through them from a source, through a transformer, and rectifier to a load and which supplies its stored energy to the load through an isolated winding when the power source is not delivering power to the load.

3,443,195

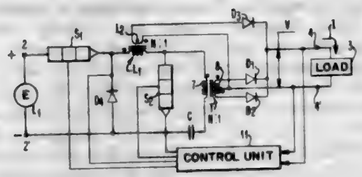
DC-TO-DC CONVERTER WITH CONTINUOUS FEED TO THE LOAD

Harry S. Hoffman, Jr., Saugerties, and Hua-Tung Lee, Ashokan, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Sept. 14, 1967, Ser. No. 667,762
Int. Cl. H02m 3/02
U.S. Cl. 321—2 **7 Claims**

Disclosed is a DC-to-DC converter circuit which has a regulated output voltage to protect against source and load variations. The regulation is achieved by controlling the "ON" and "OFF" time of the power source. The converter features the "ORING" of primary power to the load. The "ORING" of power to the load is achieved through a primary storage inductor which stores energy while power is being delivered through it from a source,

through a transformer, and rectifier to a load and which supplies its stored energy to the load through an isolated



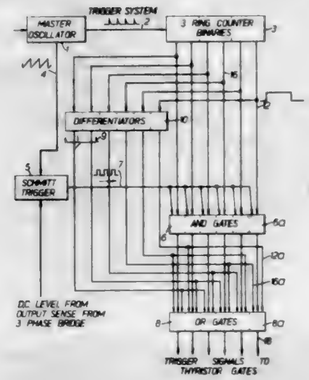
winding when the power source is not delivering power to the load.

3,443,196

STATIC INVERTER WITH PULSE-WIDTH MODULATION REGULATION

Terence P. Horner, Ilford, Essex, England, assignor to The Plessey Company Limited, Ilford, England, a British company

Filed Jan. 23, 1967, Ser. No. 611,153
Claims priority, application Great Britain, Feb. 9, 1966, 5,775/66
Int. Cl. H02m 7/04, 1/12
U.S. Cl. 321—5 **9 Claims**



A regulated static inverter arrangement wherein a regulated output waveform is provided by thyristors which are conduction controlled with triggering pulses derived from a master oscillator by a gating system, the phase relationship between the triggering pulses being such that no third harmonics are present in the output waveform and wherein regulation is achieved by pulse width control of certain trigger pulses in dependence upon the energy content of the output waveform.

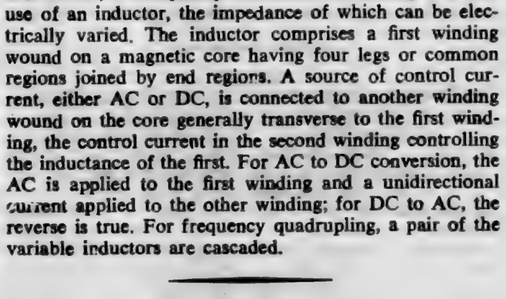
3,443,197

POTENTIAL REGULATOR CIRCUIT FOR PERMANENT MAGNET TYPE ALTERNATORS

Louis J. Raver and Maurice V. Shaw, Anderson, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Aug. 13, 1965, Ser. No. 479,478
Int. Cl. H02m 1/08, 7/00
U.S. Cl. 321—18 **4 Claims**

A potential regulator circuit for regulating the output potential of a rectified alternating current electrical generating system wherein the primary winding of a pulse transformer in series with the collector-emitter electrodes of a transistor and a unijunction transistor type relaxation oscillator, biased in such a manner that it oscillates only when the rectifier output potential is of a magnitude less than a predetermined maximum, are connected in parallel across the direct current output circuitry of the system rectifier which contains at least one silicon controlled rectifier. A secondary winding of the pulse transformer is connected across the gate-cathode electrode of each silicon controlled rectifier contained therein. Each output



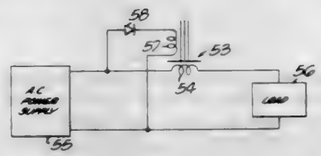
pulse of the relaxation oscillator is applied to the base electrode of the transistor to trigger this device conductive to complete an energizing circuit for the primary winding of the pulse transformer whereby the resulting series of pulses are transformer coupled to each silicon controlled rectifier device in the rectifier circuit.

3,443,198

VARIABLE INDUCTOR CONVERSION SYSTEM

Leslie K. Wanlass, Newport Beach, Calif., assignor, by mesne assignments, to Wanlass Electric Company, Santa Ana, Calif., a corporation of California

Application May 14, 1965, Ser. No. 455,939, now Patent No. 3,403,323, Sept. 24, 1968, which is a continuation-in-part of application Ser. No. 857,083, Dec. 3, 1959. Divided and this application Aug. 5, 1968, Ser. No. 750,443
Int. Cl. H02m 7/68, 5/16
U.S. Cl. 321—25 **27 Claims**



Conversion systems in which conversion of AC to DC, DC to AC, or frequency conversion is accomplished by use of an inductor, the impedance of which can be electrically varied. The inductor comprises a first winding wound on a magnetic core having four legs or common regions joined by end regions. A source of control current, either AC or DC, is connected to another winding wound on the core generally transverse to the first winding, the control current in the second winding controlling the inductance of the first. For AC to DC conversion, the AC is applied to the first winding and a unidirectional current applied to the other winding; for DC to AC, the reverse is true. For frequency quadrupling, a pair of the variable inductors are cascaded.

3,443,199

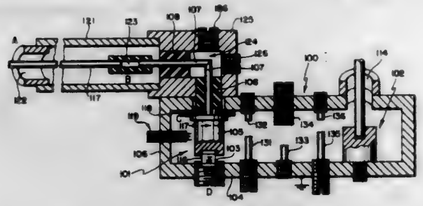
WAVE FREQUENCY MULTIPLIER EMPLOYING A NONLINEAR DEVICE IN A BAND-PASS FILTER

Fredrick P. Collins, Carlisle, and Roland Everett Clark, West Acton, Mass., assignors to Microwave Associates, Inc., Burlington, Mass., a corporation of Massachusetts

Filed Dec. 30, 1966, Ser. No. 606,410
Int. Cl. H02m 5/16
U.S. Cl. 321—69 **13 Claims**

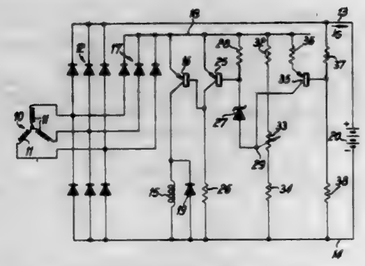
An electric wave frequency multiplier having a band-pass filter of the comb-line or interdigital type in which

the input post has a varactor in series and is tuned to the output frequency. The input frequency is coupled to the input post over an input circiuit in series with the input



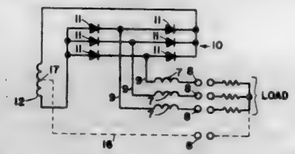
post and varactor which is tuned to the input frequency. The band-pass of the filter includes the output frequency but rejects adjacent harmonics.

3,443,200
EXCITATION SYSTEM FOR GENERATORS
Edgar Kuhn, Gerlingen, Germany, assignor to Robert Bosch G.m.b.H., Stuttgart, Germany
Filed Dec. 14, 1966, Ser. No. 601,586
Claims priority, application Germany, Dec. 30, 1965, B 85,205
Int. Cl. H02p 9/26; H02h 7/06
U.S. Cl. 322—24 14 Claims



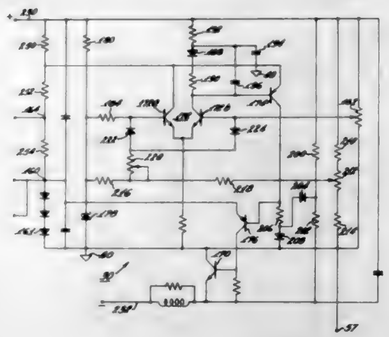
A controlled excitation system for a generator to insure constant load voltage. A set of rectifiers is connected to the load windings to supply the field current through a controlled series transistor, and to establish a reference voltage. The control voltage for the series transistor is derived by circuitry responsive to changes in said reference voltage and responsive to the difference between the load voltage and the reference voltage.

3,443,201
SELF-REGULATING BRUSHLESS PERMANENT MAGNET AC GENERATOR
Andrew Williams, 2943 Ventura Drive, Santa Barbara, Calif. 93105
Filed Oct. 28, 1966, Ser. No. 590,241
Int. Cl. H02k 7/06, 9/10
U.S. Cl. 322—28 16 Claims



1. A self regulating brushless permanent magnet alternating current generator comprising a magnetically conductive shaft, a permanent magnet rotor mounted on the shaft, a slug conductive to magnetic flux having half as many poles as the rotor mounted on the shaft adjacent to the rotor, a nonmagnetic spacer mounted on the shaft between the rotor and the slug to isolate the rotor from the slug, an annular stator containing a winding, said stator being disposed around and radially equidistant from the rotor and the slug, end bells conductive to magnetic flux arranged around the ends of the shaft in contact with the stator but separated from the shaft by an air gap, and means mounted in the end bell and electrically connected to the stator winding for energizing the slug and creating a separate regulating flux path through the shaft, stator, and end bell to induce a voltage in the stator winding which can be made to over compound, level compound, or under compound the inherent voltage induced by the rotor for a specified load current.

3,443,202
TEMPERATURE COMPENSATED TRANSISTORIZED POWER SUPPLY REGULATING MEANS
Clifford H. Moulton, Portland, Oreg., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed May 16, 1966, Ser. No. 550,230
Int. Cl. G05f 1/56
U.S. Cl. 323—22 4 Claims

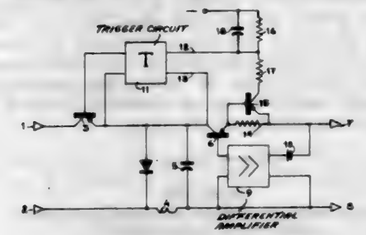


A power supply regulator having a power transistor between the input and output of the supply. A potentiometer samples the output voltage and a Zener diode provides a reference voltage. An error amplifier provides an error signal which is applied to the power transistor thru error signal amplifying transistors when the sampled output voltage varies from the reference voltage. The Zener diode is inherently temperature compensated to provide a maximum output at a given temperature which falls off above or below that temperature. A temperature sensitive resistor provides "end compensation" for the Zener diode. A temperature compensating diode compensates for temperature effecting the error signal amplifying transistors.

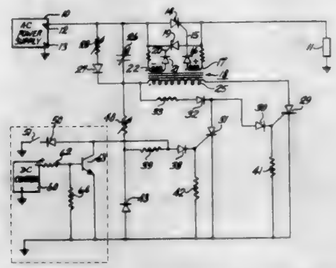
3,443,203
VOLTAGE REGULATOR INCLUDING A SWITCHING PREREGULATOR
Cornelis J. Krayenbrink, Zoetermeer, Netherlands, assignor, by mesne assignments, to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Sept. 29, 1966, Ser. No. 582,831
Claims priority, application Netherlands, Sept. 30, 1965, 6512723
Int. Cl. G05f 1/40, 1/52, 1/60
U.S. Cl. 323—22 9 Claims

A voltage regulator that includes a switching preregulator and a buffer capacitor connected across the input terminals. A series regulator and a resistor are connected

in series between the buffer capacitor and the output terminals. The voltage across the series regulator and the voltage across the resistor are applied to the input of a trigger circuit in opposite sense. The trigger circuit supplies a switching signal to the switching preregulator that controls the switching thereof in a manner that causes the voltage across the series regulator to vary inversely with the load current.



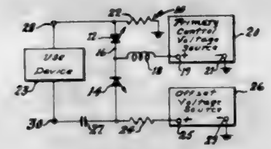
3,443,204
APPLICATION OF POWER AT ZERO REFERENCE TIME
Edward S. Baker, Seattle, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed July 21, 1966, Ser. No. 566,983
Int. Cl. G05f 3/04
U.S. Cl. 323—24 13 Claims



1. A power supply control system comprising in combination: first and second controlled rectifiers each having a gate electrode and having the anode and cathode of one rectifier connected respectively to the cathode and anode of the other for controlling full wave power from an alternating power supply to a load; a transformer having a primary winding and first and second secondary windings respectively coupled with said gate electrodes; a unidirectional current control device connected in series circuit with said primary winding for controlling the flow of current therethrough; first timing circuit means connected to the anode of one of said rectifiers, to said primary winding, and to said device for providing a voltage to said primary winding and said device which leads the phase of the voltage on the anode of said one rectifier by a first amount, and second timing circuit means connected to said primary winding, said device, and to said first timing circuit means for decreasing the amount of said phase lead following conduction of said one rectifier.

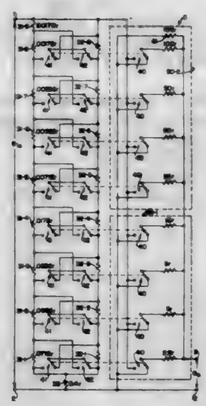
3,443,205
VOLTAGE VARIABLE CAPACITIVE NETWORK
David R. Ludwig, Braintree, Mass., and Lester R. Brodeur, Nashua, N.H., assignors, by mesne assignments to Walter J. Kreske, Newton Center, Mass.
Filed Mar. 7, 1966, Ser. No. 532,457
Int. Cl. H02m 3/04, 5/06
U.S. Cl. 323—74 9 Claims

A circuit network of a plurality of voltage variable capacitor elements coupled in series and arranged for bias voltage sources to be coupled across the respective elements in manner to selectively forward and reverse



bias respective elements in the series to effect a selectable wider range of useful capacitive values than possible in simple series and parallel couplings of such elements.

3,443,206
COMPENSATION CIRCUITS FOR VOLTAGE DIVIDERS
Frank R. Bradley, 9 Dash Place, Bronx, N.Y. 10463
Filed July 5, 1966, Ser. No. 562,846
Int. Cl. H02m 3/04, 5/06; H02p 13/00
U.S. Cl. 323—74 26 Claims

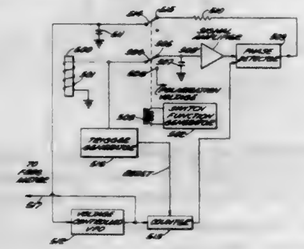


Compensating circuits for voltage dividers of the conductance type for maintaining the input impedance of the divider within a given range over the operating range of division ratios of the divider. Scaling circuits for the output of the divider which maintain a constant output impedance are also disclosed.

3,443,207
PROTON PRECESSION MAGNETOMETER WITH IMPROVED MEANS FOR POLARIZATION AND LARMOR FREQUENCY DETERMINATION
Fay R. Feild, Los Angeles, Calif., assignor to Treasure Salvors, Inc., Vero Beach, Fla., a corporation of Florida
Filed Dec. 2, 1965, Ser. No. 511,066
Int. Cl. G01r 27/72
U.S. Cl. 324—.5 2 Claims

The improvements to a proton precession magnetometer which are described and disclosed comprise two basic techniques, these being identified as (1) synchronous polarization and (2) a phase coherent reference oscillator for continuous Larmor frequency determination. The synchronous polarization technique and instrumentation are based on the recognition that the polarization cycle which precedes each "read" cycle can be accomplished in less time and with less power if the polarization field is applied when the precessing protons are most nearly at the instantaneous position of initial polarization, an orientation to which they return instantaneously during each cycle of precession. The coherent reference oscillator is based on

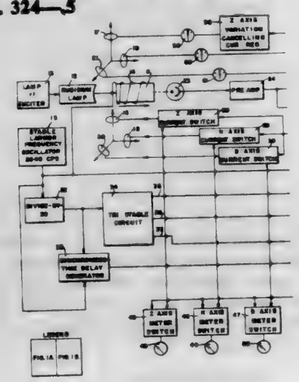
the concept of continuous Larmor frequency readability. Through a unique arrangement, the reference oscillator runs continuously and is cyclically phase corrected in accordance with a cyclical comparison of the Larmor frequency being detected and the "remembered" frequency of the oscillator. Ancillary techniques disclosed relate to optimum trigger and synchronizing signal development and inductive fly-back absorption.

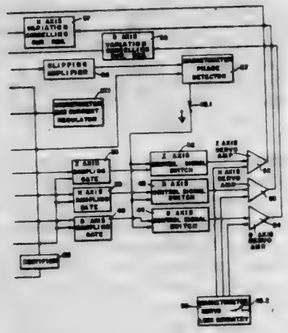


3,443,208
OPTICALLY PUMPED RESONANCE MAGNETOMETER FOR DETERMINING VECTORAL COMPONENTS IN A SPATIAL COORDINATE SYSTEM

James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Kenneth A. Ruddock, Palo Alto, and Robert C. Rempel, Los Altos, Calif.

Filed Apr. 8, 1966, Ser. No. 541,399
Int. Cl. G01r *33/08*; G01n *27/72*
U.S. Cl. 324—.5 5 Claims



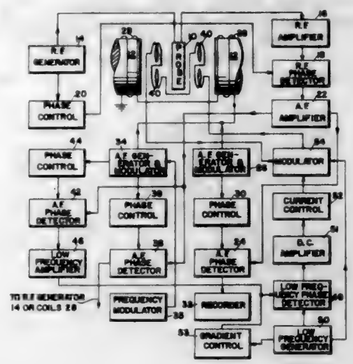


A magnetometer system employing a gas pumped by optical energy, said gas being further excited by both an alternating axial magnetic field having a predetermined frequency and a predetermined large fixed value magnetic field which allows for Larmor precession of the electron spins of the gas atoms. Phase modulation of the optical energy is responsive to changes in the ambient magnetic field. The system includes high speed switching for sequentially measuring the phase difference between the reference phase of the axial magnetic field and that of the modulated optical energy to indicate the magnitude of an unknown magnitude of an unknown magnetic field in each of three orthogonal directions.

3,443,209
MAGNETIC FIELD HOMOGENEITY CONTROL APPARATUS

Forrest A. Nelson, Weston A. Anderson, and John V. Rock, Palo Alto, Calif., assignors to Varian Associates, Palo Alto, Calif., a corporation of California

Continuation-in-part of application Ser. No. 372,626, June 4, 1964. This application Oct. 25, 1967, Ser. No. 681,057
Int. Cl. G01n *27/78*; G01r *33/08*
U.S. Cl. 324—.5 23 Claims



A method and apparatus for obtaining field homogeneity using magnetic field gradient control is disclosed wherein means are provided for detecting and altering the magnetic field in the vicinity of an analytical sample so as to maintain homgeneous the magnetic field encompassing the sample. This is accomplished by modulating the field gradient, detecting the effect of the modulation on a resonance signal, converting the detected signal to a control signal and then applying this control signal to a suitable magnetic field gradient control apparatus.

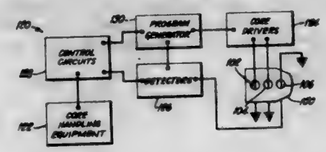
3,443,210
TEST CIRCUIT FOR EVALUATING MAGNETIC MEMORY DEVICES

William H. Kastning, Aurora, Ill., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Aug. 26, 1964, Ser. No. 392,139
Int. Cl. G01r *33/12*, *15/12*
U.S. Cl. 324—34 22 Claims

An apparatus for evaluating magnetic cores having a core handler moving cores through a test station at which probes are inserted to either accept or reject stations. Signals defining distinct time slots in a time frame derived from a program generator are applied to core drivers and signal detectors coupled to the test core by the probes to permit the core to be placed in different magnetic states

and evaluated by different detectors in any desired sequence of time slots or different points within a time slot.

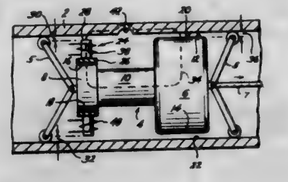


The operation of the program generator is interlocked with the movement of the probes in the core handler.

3,443,211
MAGNETOMETER INSPECTION APPARATUS FOR FERROMAGNETIC OBJECTS

Fenton M. Wood, Sugarland, and William T. Walters, Houston, Tex., assignors to American Machine and Foundry Company, New York, N.Y., a corporation of New Jersey

Filed Apr. 1, 1965, Ser. No. 444,739
Int. Cl. G01r *33/12*
U.S. Cl. 324—37 19 Claims

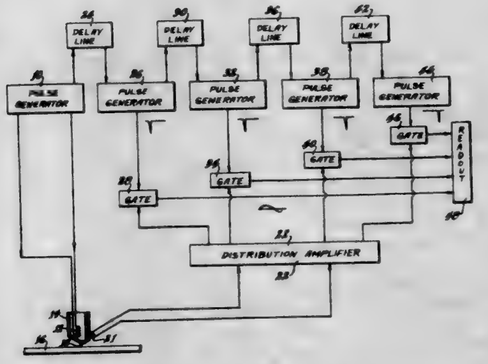


Apparatus for inspecting ferromagnetic objects using magnetometers on one pole of a magnetizer core having a larger pole. The magnetizer may be a permanent magnet or include an AC source. Shield may be provided for the magnetometers.

3,443,212
PULSED ELECTROMAGNETIC TESTING DEVICE WITH SAMPLING MEANS

Claus J. Renken, Orland Park, Ill., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Dec. 20, 1967, Ser. No. 691,999
Int. Cl. G01r *33/14*
U.S. Cl. 324—40 3 Claims

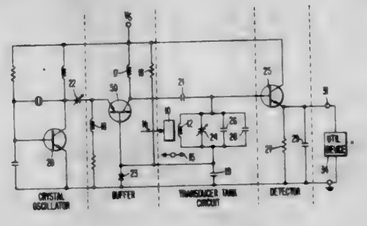


A multiparameter nondestructive electromagnetic testing device includes means for transmitting into a specimen a pulsed electromagnetic signal. Means are provided for sampling the amplitude of the reflected electromagnetic pulse from the specimen 2 *tw* times at a time interval therebetween of 1/2*w*, where *t*=the time duration of the reflected electromagnetic pulse and *w*=the band width of the reflected electromagnetic pulse detection means.

3,443,213
MAGNETOMETER USING THIN FILM TRANSDUCER AS SLOPE DETECTION FILTER

Clifford J. Bader, West Chester, Richard L. Fussell, Chester Springs, and Arthur G. Barnett, Proenixville, Pa., assignors to Burroughs Corporation, Detroit, Mich., a coporation of Michigan

Filed Apr. 18, 1966, Ser. No. 543,097
Int. Cl. G01r *33/02*
U.S. Cl. 324—43 16 Claims

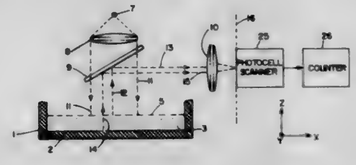


The present disclosure describes a thin magnetic film magnetometer system which utilizes radio-frequency slope detection techniques. In accordance with the invention, the thin film controlled inductor is placed in parallel with a capacitor to form a resonant tank circuit. When excited from a constant frequency source of alternating current, the tank circuit which is detuned from resonance at the source frequency provides an output voltage thereacross which is a function of the instantaneous impedance magnitude of the tank. This magnitude, in turn, is related to the external magnetic field environment to which the thin film element is subjected. Magnetic biasing and feedback methods applicable to the basic magnetometer are also described.

3,443,214
LIGHT REFLECTING MAGNETIC LIQUID APPARATUS FOR MAPPING MAGNETIC FIELDS

Robert H. Meservey, Lexington, Mass., assignor to Massachusetts Institute of Technology, Cambridge, Mass., a corporation of Massachusetts

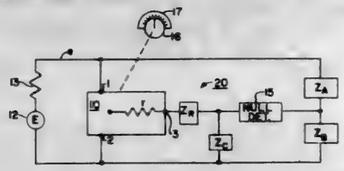
Filed Mar. 25, 1968, Ser. No. 715,713
Int. Cl. G01r *33/06*
U.S. Cl. 324—43 17 Claims



Apparatus to show magnitude and pattern of a magnetic field over an area, wherein a thin layer of a magnetic liquid as, for example, ferric chloride is placed in the field region and the originally uniform surface of the layer becomes modulated under the influence of the field. Light directed upon the liquid surface made irregular by the influence of the magnetic field is reflected by the liquid surface and mixed with light not affected by the field to

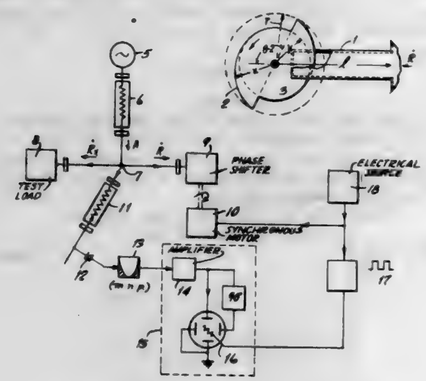
provide an optical fringe pattern which indicates magnetic field intensity and lines of equal intensity.

3,443,215
IMPEDANCE MEASURING BRIDGE WITH VOLTAGE DIVIDER PROVIDING CONSTANT SOURCE IMPEDANCE TO BRIDGE
Frank R. Bradley, 9 Dash Place, Bronx, N.Y. 10463
Filed Sept. 15, 1965, Ser. No. 487,465
Int. Cl. G01r 27/02, 17/10
U.S. Cl. 324—57 20 Claims



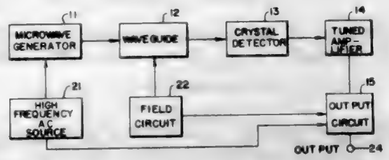
A bridge circuit for measuring impedances in which the variable arm of the bridge is formed by a voltage divider having a constant output impedance. The voltage divider provides a linear output voltage transfer relationship between its input and output voltage for any ratio setting of the divider.

3,443,216
MICRO-WAVE PHASE SHIFTER AND CIRCUIT THEREFOR
Shoji Tauchiya and Ichiro Nakagawa, Tokyo, Japan, assignors to Nippon Telegraph & Telephone Public Corporation, Tokyo, Japan, a corporation of Japan
Filed Aug. 20, 1964, Ser. No. 390,805
Int. Cl. G01r 27/04; H03b 3/04
U.S. Cl. 324—58 1 Claim



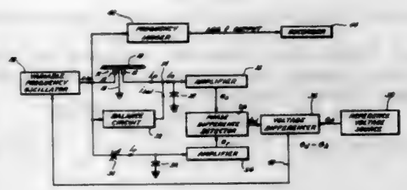
A micro-wave phase shifter for use in waveguides and comprising a rotatable disc having an electrically conductive periphery which is divided into identical sectors, the radius of each of which increases linearly with rotation by an amount equal to an integral number of half-wave lengths supportable in the waveguide; and a microwave impedance plotter comprising means for supplying microwave energy from a common source to be reflected off the phase shifter, a test specimen, detector means arranged to detect the modulation effect produced upon combining of the reflected waves, and means for synchronizing a display of the detector output with adjustments of the phase shifter.

3,443,217
VARIABLE FREQUENCY HIGH SENSITIVITY MICROWAVE SPECTROSCOPY
Joris M. Brinkerhoff, Arlington, Mass., assignor, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission
Filed Aug. 2, 1966, Ser. No. 570,144
Int. Cl. G01r 27/04
U.S. Cl. 324—58.5 7 Claims



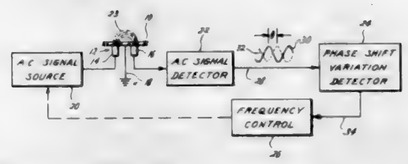
A variable frequency microwave generator coupled to a waveguide containing a Stark septum and terminating in a crystal detector for obtaining a spectroscopic analysis of gas contained within the waveguide. High and low frequency modulation of the signal passing through the waveguide identifies with improved accuracy the resonant absorption peaks of the gas.

3,443,218
HYBRID PHASE DIELECTRIC MATERIALS GAUGING SYSTEM WITH INPUT SIGNAL FREQUENCY AUTOMATICALLY VARIABLE IN RESPONSE TO A DEVIATION FROM A REFERENCE PHASE SHIFT WHICH IS ALSO VARIABLE WITH FREQUENCY
Henry T. Jaggers and Michael P. Grant, Columbus, Ohio, assignors to Industrial Nucleonics Corporation, a corporation of Ohio
Filed July 7, 1966, Ser. No. 563,466
Int. Cl. G01r 27/26
U.S. Cl. 324—61 19 Claims



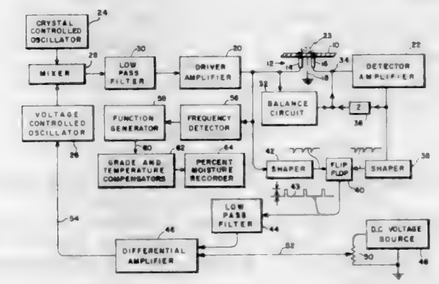
Specifically disclosed is a method and apparatus for measuring a variable property (such as percentage moisture content) of a dielectric material (such as a traveling paper sheet) using a "capacitance" probe having spaced electrodes energized with a radiofrequency voltage. The phase angle between the applied voltage and the probe current tends to vary with changes in the moisture content, but a feedback system detects phase angle deviations from a selected reference value and automatically varies the frequency of the applied voltage to counteract the changes in phase angle. In an intermediate range of operating frequencies, changes in phase angle are substantially eliminated; whereas in low and high frequency ranges the phase angle is permitted to change according to a predetermined function of the frequency. The instantaneous operating frequency provides the indication of the percentage moisture content, which can be measured over a relatively wide range utilizing a limited total range of frequencies.

3,443,219
DIELECTRIC MATERIALS GAUGING SYSTEM WITH INPUT SIGNAL FREQUENCY AUTOMATICALLY VARIABLE IN RESPONSE TO DETECTED SIGNAL PHASE SHIFT VARIATION
William L. Adams, Dublin, Ohio, assignor to Industrial Nucleonics Corporation, a corporation of Ohio
Filed July 7, 1966, Ser. No. 563,487
Int. Cl. G01r 27/26
U.S. Cl. 324—61 17 Claims



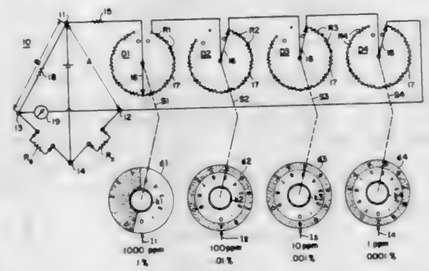
Specifically disclosed is a method and apparatus for measuring a variable property (such as percentage moisture content) of a dielectric material (such as a traveling paper sheet) using a "capacitance" probe having spaced electrodes energized with a radiofrequency voltage. An optimum value, such as 45°, of the phase angle between the applied radiofrequency voltage and the complex current through the probe is selected. A departure from this selected phase angle as a result of a change in moisture content is detected, and the frequency of the applied voltage is automatically and continuously readjusted via a null-seeking servo system to maintain the phase angle constant at the selected value. The instantaneous operating frequency provides the measure of the percentage moisture content.

3,443,220
DIELECTRIC MATERIALS GAUGING SYSTEM WITH INPUT SIGNAL FREQUENCY AUTOMATICALLY VARIABLE IN RESPONSE TO A VARIATION FROM A SELECTED PHASE SHIFT IN THE DETECTED SIGNAL
Charles F. Spademan, Worthington, Ohio, assignor to Industrial Nucleonics Corporation, a corporation of Ohio
Filed July 7, 1966, Ser. No. 563,609
Int. Cl. G01r 27/26
U.S. Cl. 324—61 13 Claims



Specifically disclosed is a method and apparatus for measuring a variable property (such as percentage moisture content) of a dielectric material (such as a traveling paper sheet) using a "capacitance" probe having spaced electrodes energized with a radiofrequency voltage of adjustable frequency. A phase measuring device whose operation is substantially independent of the frequency essentially measures the phase angle between the applied radiofreqency voltage and the complex current through the probe to provide a phase indicators signal. A reference signal source provides an adjustable reference signal indicative of a selected optimum phase angle. The measured phase indicator signal is compared with the reference signal to derive an error signal which is fed back to control the frequency of the voltage applied to the probe so as to maintain the phase angle constant at the selected value. The instantaneous operating frequency provides the measure of the percentage moisture content.

3,443,221
MULTIPLE-DECADE IMPEDANCE ARRANGEMENT WITH ASSOCIATED DIAL MEANS FOR DIRECT READOUT
Joseph L. McGill, Philadelphia, Pa., assignor to Leeds & Northrup Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Jan. 30, 1967, Ser. No. 612,637
Int. Cl. G01r 27/02
U.S. Cl. 324—63 11 Claims



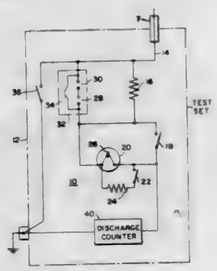
The accompanying disclosure is of a balanceable bridge circuit in which one of the ratio arms is adjustable above and below a reference value by two or more decade-resistance means having associated dials for direct readout therefrom of the difference between the adjusted resistance value and said reference value.

3,443,222
MEANS FOR ELIMINATING THE EFFECTS OF RESISTANCES IN ELECTRICAL MEASURING APPARATUS
John Mildwater, Chessington, England, assignor to The Wayne Kerr Company Limited, Chessington, England, a British company
Filed May 26, 1966, Ser. No. 553,189
Claims priority, application Great Britain, May 26, 1965, 22,425/65
Int. Cl. G01r 27/14, 1/30
U.S. Cl. 324—64 11 Claims



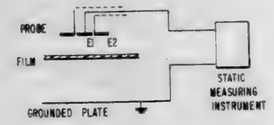
For eliminating the effects of resistances, particularly lead resistances in electrical measuring apparatus, there is provided a high gain amplifier with two leads connecting the input terminals to two points spaced along the current path at the two ends of the part of the path whose resistance is to be eliminated. The output of the amplifier is fed by separate leads to two points (which may be the same points as those previously mentioned) also at the ends of the part of the path whose resistance is to be eliminated, the amplifier and further leads being arranged to feed a current through said current path in a direction to cancel the voltage on the first pair of leads.

3,443,223
LIGHTNING ARRESTER LEAKAGE CURRENT AND DUTY MONITORING SYSTEM
Richard E. Kennon, Bloomington, Ind., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 7, 1965, Ser. No. 485,288
Int. Cl. G01r *31/02*; H02h *1/04*
U.S. Cl. 324—72 1 Claim



A test set or instrument package for monitoring the condition of a lightning arrester while connected in service over the life time of the arrester comprising spark gap means for indicating the discharge duty experienced by the arrester and a metering means for indicating arrester leakage current, both of said means being connected in series in the circuit of the arrester.

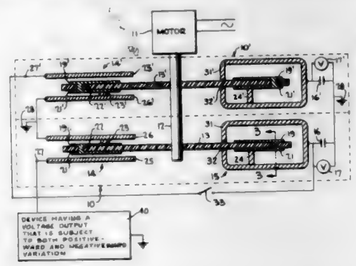
3,443,224
MEASURING PROBE FOR DETERMINING THE DISTRIBUTION OF ELECTROSTATIC CHARGES ON THE SURFACE OF A SOLID BODY
Heinz Krämer and Dieter Messner, Wiesbaden-Biebrich, Germany, assignors to Kalle Aktiengesellschaft, Wiesbaden-Biebrich, Germany, a corporation of Germany
Filed Dec. 6, 1965, Ser. No. 511,768
Claims priority, application Germany, Dec. 8, 1964, K 54,739
Int. Cl. G01r *31/02*
U.S. Cl. 324—72.5 7 Claims



A measuring probe includes a measuring electrode means surrounded by a screening electrode means. The gap between the measuring electrode means and the screening electrode means is substantially smaller than the smallest diameter of the measuring electrode means, and the measuring electrode means has a surface area adapted to face the surface to be measured not in excess of 1 mm.².

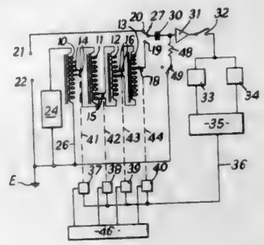
3,443,225
ELECTROSTATIC INTEGRATOR
John G. Moorhead, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Army
Continuation of application Ser. No. 273,536, Apr. 16, 1963. This application Jan. 5, 1967, Ser. No. 607,584
Int. Cl. G01r *19/16*
U.S. Cl. 324—76 2 Claims

A varying signal is applied to a pair of plates and is sampled by a plurality of conductive charge carriers, insulated mounted near the circumference of a rotating disc. Charges picked up by the carriers as they move between the plates are accumulated in a capacitor by means of a contacting element that brushes against the carriers. During the time that each carrier is in contact with the contacting element the element-and-carrier combination are



substantially surrounded by a conductive shell that is electrically connected to the contacting element. The voltage across the capacitor is the integral of the varying signal.

3,443,226
REBALANCE VOLTAGE MEASURING APPARATUS EMPLOYING AN A.C. POTENTIOMETER
Richard B. D. Knight, Salisbury Grove, Mytchett, Aldershot, Hampshire, England
Continuation-in-part of application Ser. No. 274,433, Apr. 22, 1963. This application May 2, 1966, Ser. No. 546,791
Int. Cl. G01r *17/02*, *17/06*
U.S. Cl. 324—99 6 Claims

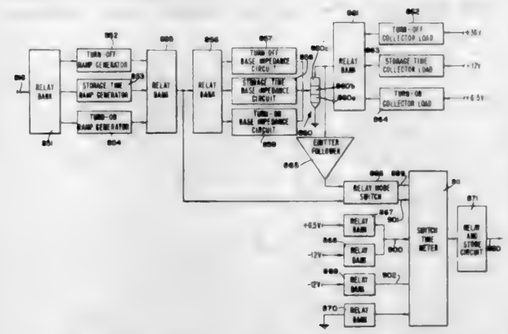


The apparatus is an automatically rebalanced voltmeter wherein an unknown voltage is compared with a digital known voltage and the digital known voltage adjusted to equal the unknown voltage. The digital known voltage is generated by a series of tapped transformer windings controlled by a digital device stepped in response to the difference between the unknown and the known voltage.

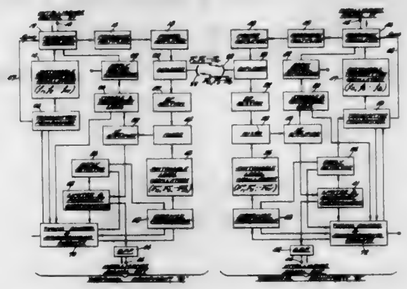
3,443,227
APPARATUS FOR INDICATING THE TRANSIENT RESPONSE OF CIRCUIT ELEMENTS
Charles A. Kelly and Roland L. Pierson, Wappingers Falls, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed June 29, 1965, Ser. No. 468,354
Int. Cl. G01r *27/28*; H04b *3/46*
U.S. Cl. 324—158 4 Claims

This patent discloses apparatus for determining the transition time (a particular case of which is rise or fall time) of active circuit elements. The apparatus includes a pulse generator and shaper for exciting a selected one of a plurality of ramp generators, the output from the selected ramp generator being connected to a selected one of a plurality of element input impedance circuits. In addition, a selected one of a plurality of load circuits, corresponding to the test to be performed on the element,

is connected to the element under test. The input and output of the element under test is connected to latch means which is responsive to the input and output and which generates a first voltage which is proportional to a value to be determined, such as the turn-on time if the element is a transistor. The latch output is integrated and stored in a capacitor, the opposite terminal of which is connected through switch means to ground. A second voltage output from the integrator corresponding to a second pulse and input and output from the element is transmitted to the capacitor, the switch in the opposite terminal of the capacitor being connected to an output in order to transmit a voltage output which is proportional, in the illustrated instance, to the transition time of the circuit element.

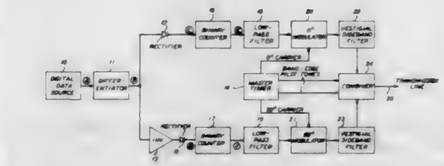


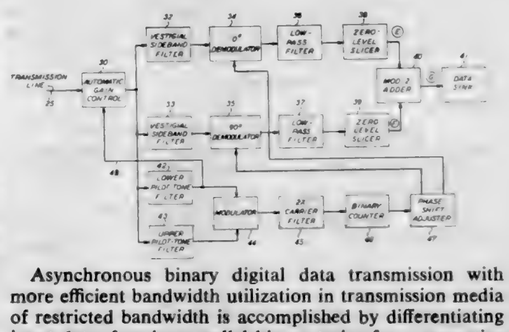
3,443,228
OPTIMUM FREQUENCY COMMUNICATION SYSTEM WITH DIFFERENT TEST FREQUENCIES IN DIFFERENT TEST INTERVALS
Millard M. Brenner, Radnor, and Bernard D. Steinberg, Wyndmoor, Pa., assignors to General Atronics Corporation, Wyndmoor, Pa., a corporation of Pennsylvania
Filed Nov. 22, 1965, Ser. No. 509,083
Int. Cl. H04b *3/10*; H04l *5/22*
U.S. Cl. 325—56 7 Claims



A frequency diversity system employing a carrier-wave transmitted signal having periodically-recurrent test intervals therein during each of which a fixed test frequency is transmitted, the fixed test frequencies being different, however, during successive test intervals according to a predetermined recurrent pattern; the message intelligence is transmitted on a carrier in the intervals between the test intervals. The carrier frequency for the message intelligence is settable to any one of the test frequencies, and the test frequency to which it is set at any given time is determined by an electrical comparison made in a receiver between the strength of the received carrier-wave signal during a message interval and the strength of the received carrier-wave signal during the next test interval. A reply signal, generated at the receiver in response to this comparison, is transmitted back to the transmitter and utilized to adjust the message carrier frequency to a different one of the test frequencies if the above-mentioned comparison of the receiver indicates that this would be advantageous for best propagation characteristics.

3,443,229
QUADRATURE-CARRIER VESTIGIAL-SIDEBAND DATA TRANSMISSION
Floyd K. Becker, Colts Neck, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Apr. 13, 1966, Ser. No. 542,339
Int. Cl. H04b *1/66*, *1/68*
U.S. Cl. 325—60 8 Claims



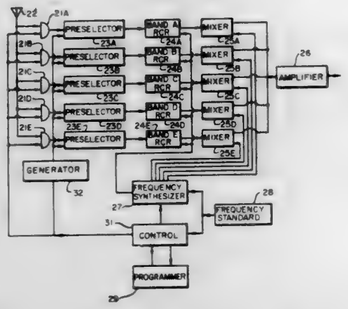


Asynchronous binary digital data transmission with more efficient bandwidth utilization in transmission media of restricted bandwidth is accomplished by differentiating input data, forming parallel binary trains from respective positive and negative transitions therein, modulating the separate binary trains onto quadrature phases of a single carrier wave, and shaping the respective modulated waves in vestigial sideband filters so that the upper sideband of one wave and the lower sideband of the other wave are principally transmitted. Pilot tones whose sum frequency bears a simple relationship to that of the carrier wave are added at the edges of the available transmission band. Although the transmitted sidebands overlap in frequency, they are noninterfering due to their quadrature relationship. The separately demodulated wave trains are recombined into the original serial data train by modulo-two addition at the receiver.

3,443,230
PLURAL CHANNEL OBLIQUE IONOSPHERE SOUNDER SYSTEM
David S. Pratt, Sunnyvale, Calif., assignor to Granger Associates, Palo Alto, Calif., a corporation of California
Filed Aug. 3, 1964, Ser. No. 386,902
Int. Cl. H04b *1/02*, *1/68*
U.S. Cl. 325—67 1 Claim

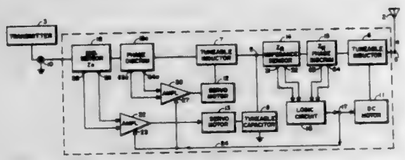
1. In a sounding system of the type described where a transmitter emits a program of one or more pulses at each of a plurality of frequency channels in time sequence in one or more predetermined frequency bands, and a remotely located receiver receives said pulses to provide information with respect to the transmission of said

pulses, said receiver including, preselector means for selection of one of said predetermined frequency channels including a voltage or current sensitive tuned input circuit including at least one passive element which changes in value in response to a change in said voltage or current, means for generating an electrical signal for application to said tuned input circuit to program the tuning



of the same in synchronism with said transmitter to receive said one or more pulses such means generating a stairstep voltage or current whose increments are in synchronism with the change of frequency channels, mixer means coupled to said preselector means for providing an output signal having transmission information for the signal path between said transmitter and receiver.

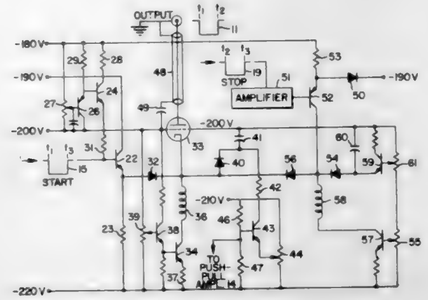
3,443,231
IMPEDANCE MATCHING SYSTEM
Jorge E. Roza, Rochester, N.Y., assignor to Gulf General Atomic Incorporated, San Diego, Calif., a corporation of Delaware
Filed Apr. 27, 1966, Ser. No. 545,640
Int. Cl. H04b *1/04, 1/66, 3/04*
U.S. Cl. 325—174 **8 Claims**



A fully automatic antenna coupler having three variable reactance elements, one of which is connected to the antenna output terminal. Impedance and phase sensors at the output terminal side of the coupler are in series between the coupler input terminal and the output terminal. These sensors control a logic circuit which operates a motor which tunes the reactive element which is connected to the output terminal until a tuned condition looking into the antenna terminal is sensed. The logic circuits then enable the tuning of the other reactive elements under control of another set of sensors connected at the input terminal side of the coupler.

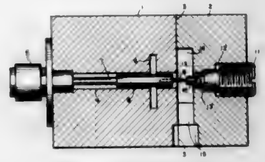
3,443,232
PULSE FORMING CIRCUIT
Willis D. Stinson, Jr., Oakland, Calif., assignor to E-H Research Laboratories, Inc., Oakland, Calif., a corporation of California
Filed Feb. 14, 1966, Ser. No. 527,348
Int. Cl. H03k *3/04*
U.S. Cl. 328—61 **5 Claims**

1. In a pulse forming circuit for generating an output pulse having short rise and fall times, an amplifier having a cathode, a control electrode and an anode, said control electrode being coupled to a voltage reference level holding such electrode at a fixed predetermined voltage level, output means coupled to said anode, means for varying the potential of said cathode within a predetermined range, such range including said voltage reference level, such means including a current source coupled to said cathode and means for diverting current from said cathode to maintain such amplifier in a quiescent, non-conductive condition, control means including



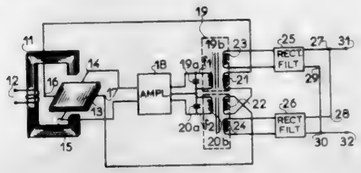
electronic switching means having an abrupt transition from a closed to an open condition and responsive to start and stop pulses for preventing said diversion of current in response to said start pulse to place said amplifier in a conductive condition and restoring said diversion of said cathode current in response to a stop pulse to place said amplifier in said quiescent, non-conductive condition, the transition from said non-conductive to said conductive condition corresponding to said rise time of said output pulse and the transition from said conductive to said non-conductive condition corresponding to said fall time.

3,443,233
HIGH IDLER DIODE PARAMETRIC AMPLIFIER
Ronald Kashkin, Melville, Peter P. Lombardo, Huntington, and Harry Pomeranz, Hauppauge, N.Y., assignors to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed May 21, 1968, Ser. No. 730,724
Int. Cl. H03f *7/04*
U.S. Cl. 330—4.9 **3 Claims**



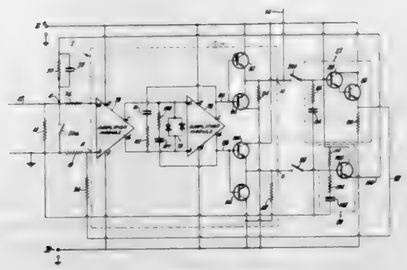
A parametric amplifier using a varactor diode operating in parallel self-resonance at the idler frequency. The diode is mounted within a radial line filter that confines the idler energy. Signal connection to the diode is made through a coaxial line having a relatively high impedance section with its center conductor entering the radial line and serving as a tuning inductance to series resonate the varactor capacitance at the signal frequency. Pump power is supplied at an aperture on the periphery of the radial line, through a waveguide which is cutoff to the idler frequency.

3,443,234
DRIFTLESS DIRECT CURRENT AMPLIFIER
Pierre Bizet, Fontenay-aux-Roses, France, assignor to CIT—Compagnie Industrielle des Telecommunications, Paris, France
Filed Oct. 22, 1965, Ser. No. 501,704
Claims priority, application France, Oct. 26, 1964, 992,693
Int. Cl. H03f *15/00*
U.S. Cl. 330—6 **11 Claims**



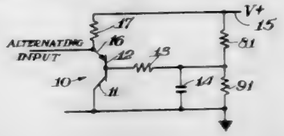
Differential device supplying a direct output voltage with a first polarity for a first direction of an input current passing through a winding without galvanic contact with the output terminals and voltage of opposite polarity for the other direction of said input current, the said input current energizing an electromagnet which contains a small plate with Hall effect, this small plate being connected to the input of an amplifier in which a first frequency is generated for the first direction of the input current and a second frequency is generated for the opposite direction of the input current through control of the feedback from the output of the amplifier through the Hall effect small plate to the input of the amplifier.

3,443,235
ELECTRICAL APPARATUS
William F. Newbold, Springfield Township, Montgomery County, Pa., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Feb. 19, 1965, Ser. No. 433,875
Int. Cl. H03f *1/02*
U.S. Cl. 330—9 **14 Claims**



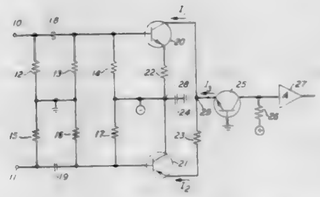
A controller amplifier within an electronic controlling apparatus is time-shared between a plurality of input signal devices and a plurality of static memory devices individually associated therewith. Switches provide the time-sharing by connecting each input device and its associated memory device respectively to the input and output of the controller amplifier. Separate time-shared circuits are provided to compensate the amplifier for current and voltage drift. The amplifier is then connected to a plurality of further input and memory devices which, in turn, connect to utilization devices for controlling a process. These utilization devices may be switched from the amplifier to a manual controller and back again without disturbing the process being controlled.

3,443,236
TRANSISTOR INDUCTANCE
Manfred Kahn, Joseph Lindmayer, and William D. North, Williamstown, Mass., assignors to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts
Filed Jan. 11, 1965, Ser. No. 424,516
Int. Cl. H03f *3/42, 3/04*
U.S. Cl. 330—12 **1 Claim**



A transistor as an inductive element in an AC circuit having a high Q factor in which the conductivity of the base at the collector is greater than the conductivity of the base at the emitter with a base conductivity gradient over a range of values providing relatively low base resistivities. The combination of the inductive transistor in a circuit with a relatively low resistance between the base and the collector to provide a Q factor much greater than unity.

3,443,237
BALANCED TO UNBALANCED TRANSISTOR AMPLIFIER
Paul E Prozeller, Fords, N.J., assignor to Bell Telephone Laboratories, Inc., Murray Hill, N.J., a corporation of New York
Filed Mar. 23, 1967, Ser. No. 625,541
Int. Cl. H03f *3/04, 3/18, 3/68*
U.S. Cl. 330—14 **12 Claims**

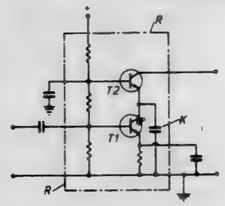


A balanced to unbalanced transistor amplifier is disclosed comprising two transistors, preferably of opposite conductivity type. The collector of the first transistor is connected through a first resistor to the emitter of the second transistor, and the emitter of the first transistor is connected through a second resistor to the collector of the second transistor. The resistors are of equal value. One of the connection paths is used to furnish an unbalanced current signal to a following low input impedance amplifier. In phase and equal valued input signals are suppressed and only those input signals 180 degrees out of phase pass through the balanced to unbalanced amplifier.

3,443,238
TRANSISTOR CASCODE AMPLIFIER WITH MEANS TO PREVENT OSCILLATIONS
David Ernest Fynn and Alfred Ronald Deeley, Essex, England, assignors to The Marconi Company Limited, London, England, a British company
Filed May 5, 1966, Ser. No. 547,932
Claims priority, application Great Britain, July 3, 1965, 28,260/65
Int. Cl. H03f *3/42, 3/18, 1/14*
U.S. Cl. 330—18 **1 Claim**

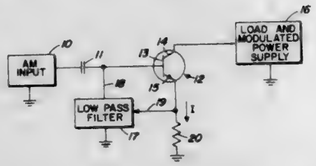
A transistor amplifier having two transistors in cascode connection. The emitter-collector connection of the two transistors is connected through a capacitance to a point, preferably high frequency ground, common to the input

and output circuit. In preferred embodiments the reactance provided by the aforementioned capacitance, together with the reactance of the output impedance of



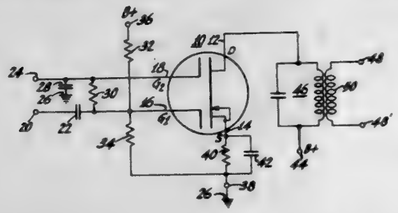
the stage including the transistor whose collector is connected to the emitter-collector connection, is less than half the minimum reactance of the other transistor when its output is short-circuited.

3,443,239
AM AMPLIFIER CIRCUIT
Jerry C. Schmitt, Columbus, Ind., assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed June 30, 1966, Ser. No. 561,869
Int. Cl. H03g 3/30
U.S. Cl. 330—25 **6 Claims**



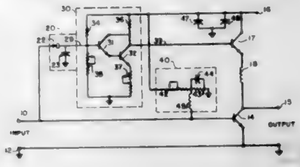
An AM transistorized amplifier circuit in which counter modulation is reduced by means of a low-pass filter feedback between emitter biasing means and the transistor base and by use of a modulated power supply. Advantageously, a plurality of transistors may be connected in parallel with improved transistor balance.

3,443,240
GAIN CONTROL BIASING CIRCUITS FOR FIELD-EFFECT TRANSISTORS
Richard A. Santilli, Somerville, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Dec. 11, 1967, Ser. No. 689,425
Int. Cl. H03g 3/30
U.S. Cl. 330—29 **5 Claims**



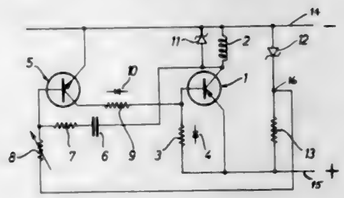
Improved cross modulation performance is obtained in a tetrode insulated gate field-effect transistor amplifier by arranging the automatic gain control circuit so that the voltages of the first and second gate electrodes change in opposite polarity directions relative to the source electrode. The relative bias voltages on the two gate electrodes are established to maintain good cross modulation performance over the automatic gain control voltage range.

3,443,241
HIGH LEVEL RF TRANSISTOR DISTORTION CORRECTION CIRCUIT
Octavius Pitzalis, Jr., Fair Haven, N.J., assignor to the United States of America, as represented by the Secretary of the Army
Filed July 7, 1967, Ser. No. 651,956
Int. Cl. H03g 3/30
U.S. Cl. 330—29 **7 Claims**



The distortion caused by the current-crowding effect at the higher levels of current gain in a high-beta power transistor is corrected by means of a current-limiting, control transistor in series with the high-beta transistor. The control transistor is actuated by the envelope of the amplitude-modulated input signals to vary the current through the control transistor, and the effective gain of the high-beta power transistor, in accordance with the peak level of the input signals. This insures constant amplification throughout the useful range of the transistor.

3,443,242
TRANSISTOR PULSE GENERATOR ENERGIZABLE FROM AC OR DC
Robert Walter Reich, Freiburg im Breisgau, Germany (Via Noseola 8, Lugano-Ruvigliana, Switzerland)
Filed Nov. 30, 1966, Ser. No. 597,955
Int. Cl. H03b 3/04
U.S. Cl. 331—71 **2 Claims**

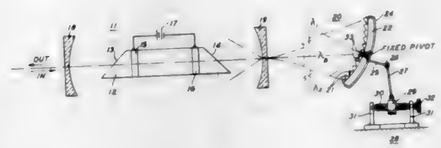


A transformerless blocking oscillator is disclosed which comprises two transistors so coupled together that the frequency of the resulting output is substantially independent of temperature and supply voltage fluctuation. Initially both transistors are cut off, the first by a charge on a capacitor, the second by the first. As the capacitor charges, the first transistor reaches is threshold and conducts, causing the second transistor to conduct. Conduction of the second transistor also reverses the charge on the capacitor which blocks the first transistor, which in turn blocks the second transistor. This action is then repeated. Zener diodes are used to stabilize the supply voltages and also allow the circuit to operate from an AC source as well as a DC source.

3,443,243
FREQUENCY SELECTIVE LASER
Chandra K. N. Patel, Chatham, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed June 23, 1965, Ser. No. 466,392
Int. Cl. H01s 3/10, 3/22; G02b 5/18
U.S. Cl. 331—94.5 **5 Claims**

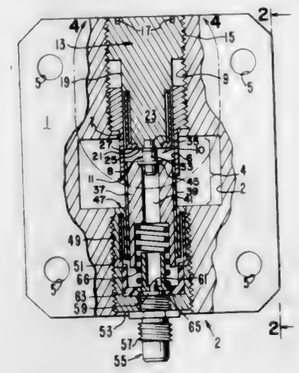
A frequency-selective vibrational-rotational level molecular laser is disclosed. In a carbon dioxide laser operating at 10.6 microns, selection among different vibrational-

rotational transitions is provided by applying the principles of the spectrometer. A diffraction-grating apparatus is disposed outside of the laser resonator and adapted to provide substantial angular dispersion of the differing-frequency radiations transmitted from the resonator.



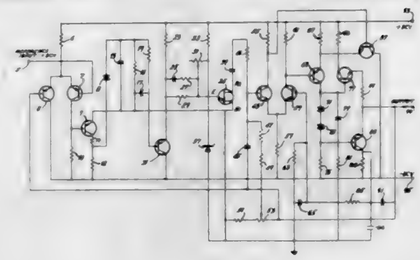
The resonator itself is adapted, either with apertures or a curved partially transmissive reflector, to provide further angular dispersion of the differing-frequency radiations, which are returned from the grating to the resonator.

3,443,244
COAXIAL RESONATOR STRUCTURE FOR SOLID-STATE NEGATIVE RESISTANCE DEVICES
Edward J. Cook, South Hamilton, Mass., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Aug. 23, 1967, Ser. No. 662,767
Int. Cl. H03b 5/18, 7/12, 7/06
U.S. Cl. 331—96 **10 Claims**



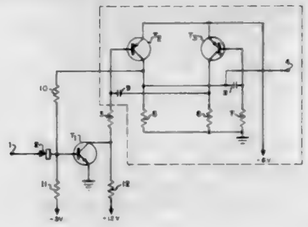
A microwave oscillator utilizing a negative-resistance diode as the active element is disclosed. The diode is connected in or as the center conductor or a coaxial resonator contained within a post structure. The resonator includes a sleeve forming an outer conductor, a shorting plug or wall in the sleeve defining one end of the resonator, and a movable conductive plug closing the other end of the sleeve to define a capacitive gap circumscribing the post between the sleeve and the movable plug. The capacitance of the gap between the sleeve and the movable plug is varied, in one embodiment, to tune the resonator. In another embodiment, a tuning member is movable within the resonator for tuning the resonator. The post structure, containing the resonator, is mounted transversely to the axis of propagation in a short section of waveguide having a shorting plane closing one end. A D.C. reverse bias voltage applied to the diode produces microwave oscillation within the resonator. Electric field lines fringing out of the capacitive gap circumscribing the post couple R.F. energy into the waveguide.

3,443,245
STABILIZED OSCILLATOR
Vernon Whittaker, Ambler, Pa., assignor to Automatic Timing and Controls, Inc., King of Prussia, Pa., a corporation of Pennsylvania
Filed Jan. 7, 1966, Ser. No. 519,329
Int. Cl. H03b 3/02
U.S. Cl. 331—109 **5 Claims**



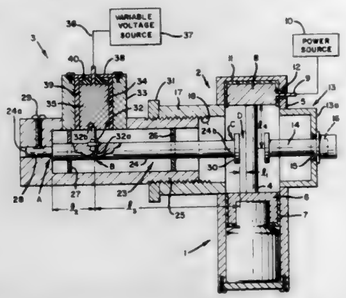
This oscillator has its output voltage inverted by a Wien bridge and applied back to its input. In addition, part of the output is fed back to the input of the amplifier as negative feedback. The oscillator output wave is also fed back to a differential amplifier and rectifier where it is compared with a DC control signal to derive a DC error signal whose amplitude is a function of the amplitude of the output wave. The amount of negative feedback is governed by the DC error signal in conjunction with a variable impedance (unijunction) transistor whose impedance is controlled by the error signal. Thus the amplitude of the oscillator is maintained substantially constant.

3,443,246
MULTIVIBRATOR ENABLING CIRCUIT
Warren G. Brown, River Vale, and Roy E. Lott, Jr., Glen Rock, N.J., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Oct. 2, 1967, Ser. No. 672,385
Int. Cl. H03k 3/28, 3/31
U.S. Cl. 331—113 **3 Claims**



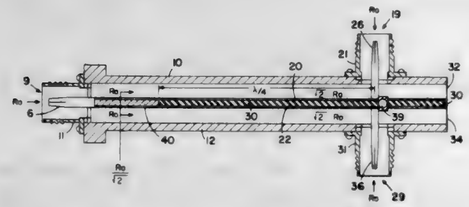
A multivibrator enabling circuit designed to control the number of output pulses from the multivibrator in response to an enabling voltage. The enabling circuit also provides means for maintaining the output pulse width as a function of the multivibrator alone, and not as a function of the time of removal of the enabling voltage. The multivibrator is a transistorized free running type multivibrator. It is enabled by means of a transistor switch that is closed in response to an input signal. In the absence of an input signal the switch is open and the multivibrator is cut-off. The output from the multivibrator is fed back to the input of the transistor switch through an OR gate to hold the switch closed for approximately an additional half cycle after the input signal to the switch is removed. Without this feedback the last pulse in the output pulse train of the multivibrator would always be shorter in width than the other pulses.

3,443,247
VARACTOR MODULATOR HAVING A LINEAR TUNING VOLTAGE vs. FREQUENCY RESPONSE
Roger L. Fjerstad, Sunnyvale, Calif., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Mar. 31, 1966, Ser. No. 539,056
Int. Cl. H03c *3/20*
U.S. Cl. 332—30 **1 Claim**



This modulator includes a tuned circuit that is coupled through a coaxial transmission line to the coaxial cavity connected to the output of an oscillator tube. The spacing between the inner and outer conductors of the coaxial line is small. The tuned circuit includes a varactor diode connected between the center of the inner conductor and the outer conductor of the coaxial line and a length of the coaxial line between the diode and a short circuit of the inner and outer conductors at the opposite end of the coaxial line from the cavity. A bias voltage applied to the diode is varied at a linear rate to change the diode capacitance and thus the tuned circuit reactance that is coupled to the cavity. This causes the resonant frequency of the cavity and the operating frequency of the modulator to change at a substantially linear rate.

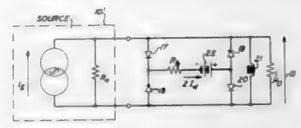
3,443,248
STRIP HYBRID POWER DIVIDER
David C. Broderick, Beverly, Mass., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Nov. 16, 1966, Ser. No. 595,314
Int. Cl. H01p *5/12, 3/08*
U.S. Cl. 333—11 **2 Claims**



A radio frequency power divider device for providing equal phase and amplitude division of radio frequency power consistent with isolation between output terminals.

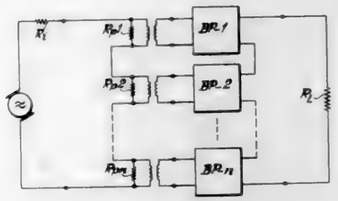
3,443,249
WAVE LIMITER CIRCUIT AND APPARATUS
Francis R. Ashley, South Plainfield, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed Nov. 22, 1966, Ser. No. 596,232
Int. Cl. H04b *3/04;* **H01p** *5/14*
U.S. Cl. 333—17 **7 Claims**

A wave limiter circuit having a transmission line connected at one end to a directional coupler and at another end to a dissipating resistance. Two pairs of oppositely poled forward-biased diodes are connected across the transmission line in parallel with the dissipating resistance. Wave energy from the directional coupler is reflected by the diodes and the resistance and is transmitted by the



directional coupler to a load. For optimum limiting, the diodes are biased by a constant-current source and the dissipating resistance is larger than the input resistance. Input wave energy may also be modulated by varying the bias current.

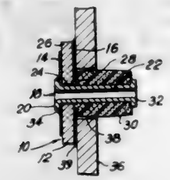
3,443,250
SYSTEM OF SERIES-CONNECTED BAND-PASS FILTER NETWORKS
Karl Heinz Feistel, Eningen unter Achalm, Germany, assignor to Wandel u. Goltermann, Reutlingen, Germany
Filed May 12, 1965, Ser. No. 455,162
Claims priority, application Germany, May 26, 1964, W 36,868
Int. Cl. H01h *7/10;* **H01p** *5/12;* **H03m** *7/10*
U.S. Cl. 333—76 **7 Claims**



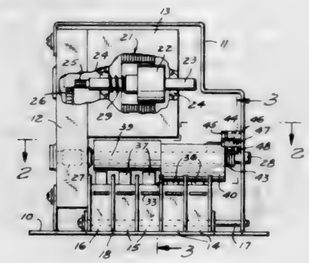
A reactance band-pass system which has several band-pass ranges, all of which have the same basic band-pass attenuation, and which is connected between a certain source resistance R_s and a certain load resistance R_L. Another novel feature is a frequency outlet with two outputs, at output 1 of which the signals of the band-pass range appear and at output 2 of which the remaining signals appear. In this additional feature there is in each band-pass range an additional basic attenuation of 3 db. At output 2 this additional attenuation does not appear in the band-stop ranges.

3,443,251
DISCOIDAL FEED-THROUGH CAPACITORS
William W. Garstang, Milwaukee, Wis., and Lawrence E. Nordquist, North Dartmouth, Mass., assignors to Cornell-Dubilier Electric Corporation, a corporation of Delaware
Filed Dec. 23, 1965, Ser. No. 526,649
Int. Cl. H01g *1/035, 3/06*
U.S. Cl. 333—79 **9 Claims**

7. A feed-through filter for mounting in a hole in a conductive panel, said filter having a central conductor which has a pair of spaced opposed shoulders and a shank portion therebetween, a high dielectric ceramic disc on said conductor, said disc having a pair of opposed electrodes thereon, one of said electrodes being in engagement with one of the shoulders on said conductor, the other electrode being margined to provide a nonconductive path from said conductor to said electrode, a core member of high core loss ferrite on said shank, said member being in firm engagement with said margined electrode, a sleeve of insulation on said shank interposed between said shank and said ferrite member, a resilient insulating washer positioned between said ferrite member and the other shoulder of said conductor, said washer being in compression to thereby maintain said ferrite core member firmly against said disc, said ferrite core member and said resilient washer locating said filter in said mounting hole, said margined electrode extending beyond said insulator means for engagement with said panel adjacent said mounting hole.



3,443,252
MOTOR OPERATED RELAY
Frank P. Spinelli, Brookside, and Dominik M. Wiktor, Cranford, N.J., assignors to Automatic Switch Company, a corporation of New York
Filed July 7, 1967, Ser. No. 651,810
Int. Cl. H01h *51/06, 3/26*
U.S. Cl. 335—73 **1 Claim**

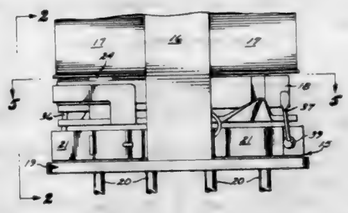


Motor, such as shaded pole motor, drives actuator, such as a cam, to operate a switch. Motor shaft is checked after it rotates through predetermined angle, although motor remains energized, to define one position of actuator and switch. Resilient means returns actuator to its original position, when motor is deenergized, to define other position of switch.

Actuator may operate a bank of switches so that device can be used as a transfer relay. Motor shaft may rotate actuator via a gear train.

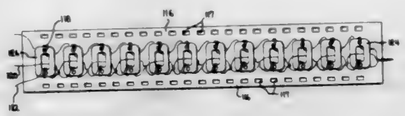
3,443,253
ARMATURE DAMPING STRUCTURE
James E. Grimes, Fullerton, and Michael Muller, Newport Beach, Calif., assignors, by mesne assignments, to Babcock Electronics Corporation, Costa Mesa, Calif., a corporation of Delaware
Filed Dec. 5, 1966, Ser. No. 598,988
Int. Cl. H01h *3/60*
U.S. Cl. 335—157 **10 Claims**

An electromagnetically actuated relay having a moveable armature pivoted on a base, means on said base for dissipating as heat the kinetic energy of said armature including first and second shock dampers each having an



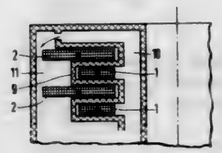
inclined surface to engage opposite ends of said armature.

3,443,254
TAPE MOUNTED MAGNETIC CORE ASSEMBLY
Joseph P. Sweeney, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Original application Nov. 13, 1961, Ser. No. 151,797, now Patent No. 3,204,329, dated Sept. 7, 1965. Divided and this application Nov. 10, 1964, Ser. No. 417,260
Int. Cl. H01f *3/00;* **B23p** *17/00;* **B65d** *81/32*
U.S. Cl. 335—297 **2 Claims**



A magnetic core assembly is disclosed featuring a thin flexible tape of insulating non-magnetizable material which is readily pierced as by a needle. Cores are stuck to the tape with a functional circuit formed by winding turns coupled to the cores by threading the wire forming the windings through the cores and the tape with a needle. An additional protective tape may then be added to the wired tape core assembly.

3,443,255
CURRENT LIMITING DEVICE
Ernst Massar, Erlangen, Germany, assignor to Siemens Aktiengesellschaft, Berlin, Germany, a corporation of Germany
Filed Apr. 25, 1967, Ser. No. 633,483
Claims priority, application Germany, Apr. 26, 1966, S 103,419
Int. Cl. H01f *27/10*
U.S. Cl. 336—58 **12 Claims**



A current limiting device preferably for use in alternating-current distribution systems consists essentially of two parallel connected and inductively interlinked inductance windings which have substantially equal but mutually opposed ampere turns so that their respective reactances substantially cancel each other. At least one of the two windings is formed of superconducting material and has its critical magnetic field strength at the limit

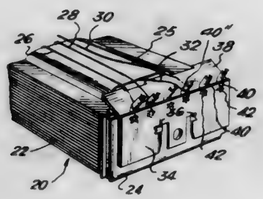
value of the current to be controlled. When the limit current is exceeded, the critical field is reached so that the previously superconducting winding goes normal and the field of the other winding becomes effective to limit the current.

3,443,256

ELECTROMAGNETIC DEVICE WITH TERMINAL CONNECTIONS AND THE METHOD OF MAKING THE CONNECTIONS

Morris J. Holton, Morton Grove, and Sol Hasson, Skokie, Ill., assignors to Advance Transformer Co., Chicago, Ill., a corporation of Illinois

Original application Aug. 4, 1966, Ser. No. 570,305. Divided and this application Mar. 18, 1968, Ser. No. 734,184
Int. Cl. H01f 15/10, 15/08
U.S. Cl. 336—192 15 Claims



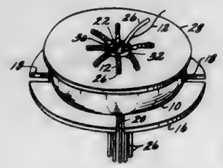
The thin lead end of a coil wire in an electromagnetic device is attached to a thicker lead wire by the use of a crimped metal member. The interstices of the metal member are filled with plastic for sealing purposes. The method of making the connection between the thin and thick wires includes soldering the thin wire to the metal member, coating with plastic, placing the thick wire in the metal member and then crimping the metal member.

3,443,257

MOUNTED TOROIDAL ELECTRICAL COMPONENT

Donald B. Mollman, Mason, Ohio, assignor to General Electric Company, a corporation of New York

Filed June 8, 1967, Ser. No. 644,563
Int. Cl. H01f 27/30
U.S. Cl. 336—199 7 Claims



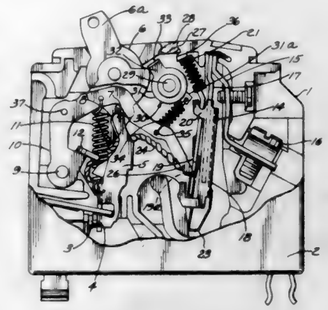
A toroidal electrical component such as a toroidal magnetic core having relatively thin winding leads mounted on a support apparatus. The support apparatus comprises a center body of electrically insulating material disposed in the center of the toroidal component and secured thereto by suitable means. A plurality of relatively thicker interconnecting wires extend through the center body and from both ends thereof in spaced apart relationship. In this manner, the wires extending from one end of the center body may be connected to the relatively thin winding wires of the toroidal magnetic core by soldering or welding and the wires from the opposite end may be connected to an electrical circuit. This arrangement holds the interconnecting wires and the relatively thin winding wires of the toroidal magnetic core in rigid relationship to prevent breakage during connection of the electrical component into an electrical circuit.

3,443,258

CIRCUIT BREAKER WITH TRIP INDICATOR

Robert W. Dunham and Charles D. Vyskocil, Cedar Rapids, Iowa, assignors to Square D Company, Park Ridge, Ill., a corporation of Michigan

Filed Nov. 10, 1966, Ser. No. 593,517
Int. Cl. H01h 71/04, 71/16, 73/12
U.S. Cl. 337—79 1 Claim



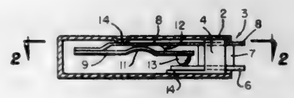
The circuit breaker has a stationary contact, a movable contact carrier, and a trip member which is normally latched in untripped position by a current responsive trip mechanism and is released thereby under abnormal conditions. In untripped position, the movable contact carrier can be moved to open and closed positions by a manual operator. Upon tripping, the movable contact carrier is moved to open position. An indicator is rockable about a fixed axis from a nonindicating position to a trip indicating position. This indicator is directly connected to the trip member by a coil tension spring which is caused to act in tension upon release of the trip member to rock the indicator to an indicating position and is caused to act in compression upon movement of the trip lever to untripped position by the manual operator to rock the indicator to a nonindicating position.

3,443,259

CREEPLESS SNAP-ACTING THERMOSTATIC SWITCH

Glenn E. Wehl and Thomas E. Welker, North Canton, Ohio, assignors to Portage Electric Products, Inc., North Canton, Ohio, a corporation of Ohio

Filed May 16, 1967, Ser. No. 638,818
Int. Cl. H01h 61/01, 37/54, 37/12
U.S. Cl. 337—89 7 Claims



A small, inexpensive, mass-produced thermostatic switch having a bimetallic electric-contact-carrying blade with a dish-shaped snap portion, in which "creep" opening of the contacts prior to snap-open action is substantially eliminated by provision of a rigidly mounted fulcrum, at all times in contact with the bimetallic blade beyond the dished portion thereof, the blade flexing about the fulcrum contact as a pivot point.

DESIGNS

MAY 6, 1969

214,008
COOKIE
Kenneth W. Mulder, Tampa, Fla., assignor to Safety Education, Inc., Tampa, Fla., a corporation of Florida
Filed June 28, 1968, Ser. No. 12,535
Term of patent 14 years
Int. Cl. D1—*01*
U.S. Cl. D1—18



214,009
BRASSIERE
Charles M. Sachs, 661 Greenville Ave., West Englewood, N.J. 07666
Filed Jan. 10, 1968, Ser. No. 10,118
Term of patent 14 years
Int. Cl. D2—*02*
U.S. Cl. D2—24



214,010
FUR TRIMMED COAT
Arthur Carew, Sausalito, Calif., assignor to Lilli Ann Corporation, San Francisco, Calif., a corporation of California
Filed May 16, 1968, Ser. No. 11,972
Term of patent 14 years
Int. Cl. D2—*01*
U.S. Cl. D2—198



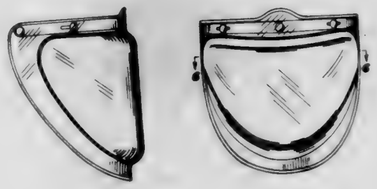
214,011
SHIRT
Horace W. Johnson, 2296 E. 87th St., Cleveland, Ohio 44106
Filed Oct. 31, 1967, Ser. No. 9,222
Term of patent 14 years
Int. Cl. D2—*01*
U.S. Cl. D2—208



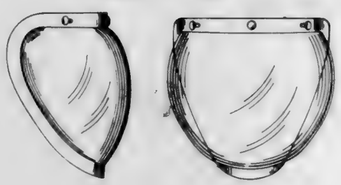
214,012
ILLUMINABLE HAT
Edward Russo, 528 Grove St., Ridgewood, N.J. 07452
Filed Nov. 27, 1967, Ser. No. 9,560
Term of patent 14 years
Int. Cl. D2—*03*
U.S. Cl. D2—231



214,013
FACE SHIELD
Paul R. Jones, Long Beach, Calif., assignor to Bates Industries, Inc., Long Beach, Calif., a corporation of California
Filed Apr. 3, 1968, Ser. No. 11,282
Term of patent 14 years
Int. Cl. D2—*03*
U.S. Cl. D2—233



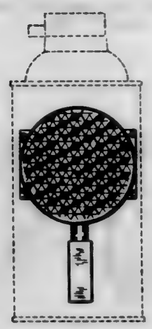
214,014
FACE SHIELD
Paul R. Jones, Long Beach, Calif., assignor to Bates Industries, Inc., Long Beach, Calif., a corporation of California
Original design application May 15, 1967, Ser. No. 7,125. Divided and this application Apr. 22, 1968, Ser. No. 11,744
Term of patent 14 years
Int. Cl. D2—*03*
U.S. Cl. D2—233



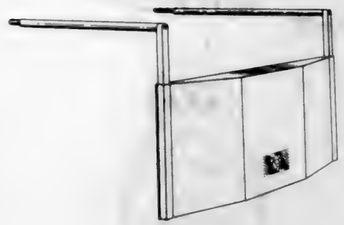
214,015
HAT
Stewart Hicks, P.O. Box 15246, Sarasota, Fla. 33578
Filed July 23, 1968, Ser. No. 12,863
Term of patent 14 years
Int. Cl. D2—*03*
U.S. Cl. D2—248



214,016
LATHER APPLICATOR FOR SHAVING CREAM
Efraim Lieberman, 1840 E. 13th St., Brooklyn, N.Y. 11215
Filed Dec. 13, 1967, Ser. No. 9,752
Term of patent 14 years
Int. Cl. D4—*02*
U.S. Cl. D4—19



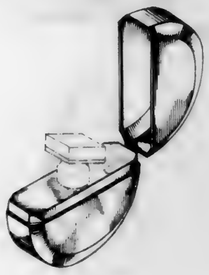
214,017
PORTABLE VENTILATOR FOR ATTACHMENT TO A BED
Cyril Bencraft Joly, New Close Cottage, Sleepers Hill, Winchester, England
Filed Dec. 26, 1967, Ser. No. 9,920
Claims priority, application Great Britain June 26, 1967
Term of patent 3½ years
Int. Cl. D23—*04*; D6—*01*
U.S. Cl. D5—2



214,018
RATCHET WRENCH
John W. Traughber, 6208 Orchard Lane, Fort Wayne, Ind. 46807
Filed June 19, 1968, Ser. No. 12,436
Term of patent 14 years
Int. Cl. D8—*02*
U.S. Cl. D8—25



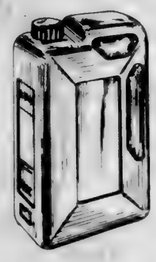
214,019
COMBINED LIQUID DISPENSING CONTAINER AND COVER THEREFOR
Fred C. Newman, La Grange Park, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Sept. 20, 1967, Ser. No. 8,662
Term of patent 14 years
Int. Cl. D9—*01*
U.S. Cl. D9—37



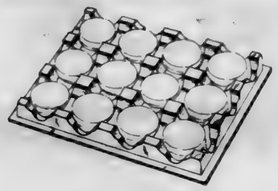
214,020
JUG
John R. Osborn, New York, N.Y., assignor to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia
Filed Sept. 7, 1967, Ser. No. 8,513
Term of patent 14 years
Int. Cl. D9—*01*
U.S. Cl. D9—39



214,021
CAN
Paolo Bacialli, 30 Viale SS. Pietro e Paolo, Rome, Italy
Filed Nov. 13, 1967, Ser. No. 9,366
Term of patent 14 years
Int. Cl. D9—*07*
U.S. Cl. D9—44



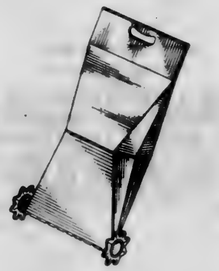
214,022
DISPLAY TRAY
Arthur G. Ringlen, Brooklyn, N.Y., assignor to Logistics Industries Inc., Yonkers, N.Y., a corporation of New York
Filed June 19, 1968, Ser. No. 12,432
Term of patent 14 years
Int. Cl. D9—*04*
U.S. Cl. D9—187



214,023
COMBINED PACKAGE AND SPREADER FOR PULVERULENT MATERIAL
William E. Beaumont, Marina del Rey, Calif., assignor to Downey Fertilizer Company, Downey, Calif., a corporation of California
Filed Mar. 13, 1968, Ser. No. 10,956
Term of patent 14 years
Int. Cl. D9—*04*
U.S. Cl. D9—221



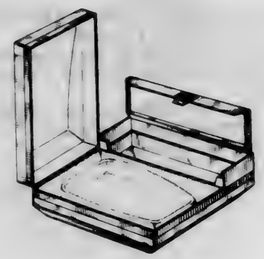
214,024
COMBINED PACKAGE AND SPREADER FOR PULVERULENT MATERIAL
William E. Beaumont, Marina del Rey, Calif., assignor to Downey Fertilizer Company, Downey, Calif., a corporation of California
Filed Apr. 24, 1968, Ser. No. 11,593
Term of patent 14 years
Int. Cl. D9—*04*; D8—*01*
U.S. Cl. D9—221



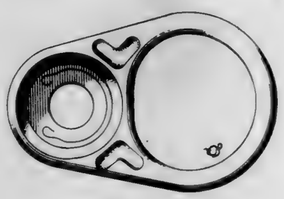
214,025
DISPLAY BOX
Georges Vaudaux, 14 bis Ave. G. Motta, Geneva, Switzerland
Filed Jan. 2, 1968, Ser. No. 10,019
Claims priority, application Switzerland July 17, 1967
Term of patent 7 years
Int. Cl. D9—*04*
U.S. Cl. D9—230



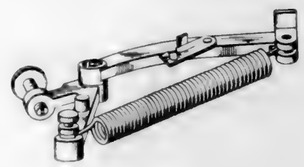
214,026
COMBINED DISPLAY AND STORAGE CASE FOR AN ELECTRIC SHAVER
William J. Rakocy, Clifton, N.J., assignor to Ronson Corporation, Woodbridge, N.J., a corporation of New Jersey
Filed May 15, 1968, Ser. No. 11,951
Term of patent 14 years
Int. Cl. D9—*04*
U.S. Cl. D9—232



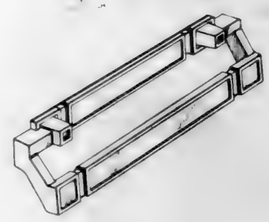
214,027
PULL TAB FOR A REMOVABLE TEAR PORTION
Don B. Peters, Dayton, Ohio, assignor, by mesne assignments, to Ermal C. Fraze, Dayton, Ohio
Filed Feb. 12, 1968, Ser. No. 10,545
Term of patent 14 years
Int. Cl. D9—*02*
U.S. Cl. D9—256



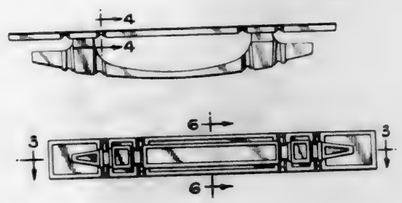
214,028
DOOR CLOSER
Michael M. Weiner, Los Angeles, Calif. (P.O. Box 36, Woodland Hills, Calif. 91365)
Filed May 16, 1968, Ser. No. 11,961
Term of patent 14 years
Int. Cl. D8—*03*
U.S. Cl. D8—203



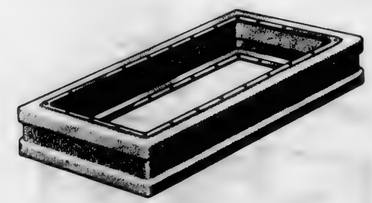
214,029
PULL
LeVerne E. Clayton, Rockford, Ill., assignor to Amerock Corporation, Rockford, Ill., a corporation of Connecticut
Filed June 5, 1968, Ser. No. 12,232
Term of patent 14 years
Int. Cl. D8—*03*
U.S. Cl. D8—168



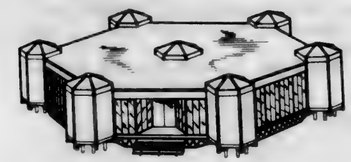
214,030
COMBINED PULL AND ESCUTCHEON PLATE
LaVerne E. Clayton, Rockford, Ill., assignor to Amerock Corporation, Rockford, Ill., a corporation of Connecticut
Filed June 6, 1968, Ser. No. 12,239
Term of patent 14 years
Int. Cl. D8—*03*
U.S. Cl. D8—167



214,031
MODULAR BLOCK
Richard A. Rose, 1545 Collins Ave., Miami Beach, Fla. 33139
Filed Apr. 11, 1966, Ser. No. 1,834
Term of patent 14 years
Int. Cl. D25—*01*
U.S. Cl. D13—1



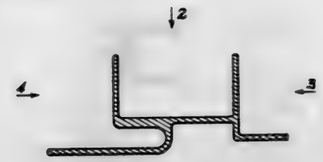
214,032
HEXAGONAL BUILDING UNIT
Raymond V. Tackaberry, 17 Lascelles Blvd., Apt. 1610, Toronto, Ontario, Canada
Filed Mar. 22, 1968, Ser. No. 11,187
Claims priority, application Canada Oct. 4, 1967
Term of patent 14 years
Int. Cl. D25—*04*
U.S. Cl. D13—1



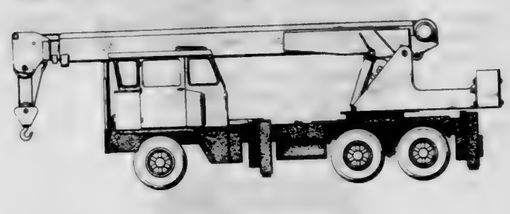
214,033
WALL PANEL
Michael M. Starr, Richmond Heights, Mo., assignor to Starrco Company, Inc., St. Louis, Mo., a corporation of Missouri
Filed Apr. 22, 1968, Ser. No. 11,557
Term of patent 14 years
Int. Cl. D25—*01*
U.S. Cl. D13—1



214,034
FEATURE STRIP
James L. Griffith, Dallas, Tex., assignor to H. H. Robertson Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 27, 1968, Ser. No. 12,095
Term of patent 14 years
Int. Cl. D25—*03*
U.S. Cl. D13—6



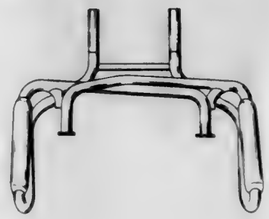
214,035
SELF-PROPELLED TRUCK CRANE
John L. Grove, Greencastle, Pa., assignor to Grove Manufacturing Company, Shady Grove, Pa., a corporation of Pennsylvania
Filed Feb. 27, 1968, Ser. No. 10,747
Term of patent 14 years
Int. Cl. D12—*05*
U.S. Cl. D14—3



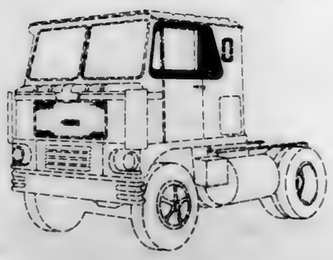
214,036
AUXILIARY CAB FOR PICKUP TRUCK
Robert B. Reinarts, 1417 8th St. SW., Minot, N. Dak. 58701
Filed Mar. 25, 1968, Ser. No. 11,111
Term of patent 14 years
Int. Cl. D12—*09, 14, 99*
U.S. Cl. D14—3



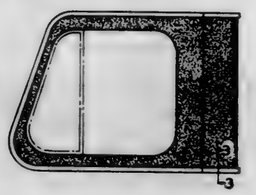
214,037
ENGINE EXHAUST SYSTEM
Ray T. Flugger, 2055 Hatch Road, Novato, Calif. 94947
Filed Oct. 9, 1967, Ser. No. 8,922
Term of patent 14 years
Int. Cl. D12—*14, 08;* D15—*01*
U.S. Cl. D14—6



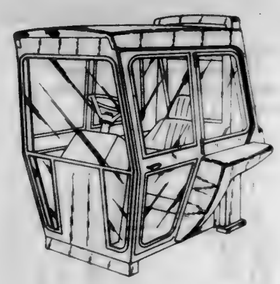
214,038
TRIM FOR A VEHICLE CAB
Harvey F. Dick, Chagrin Falls, Ohio, assignor to White Motor Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Feb. 23, 1968, Ser. No. 10,696
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D14—6



214,039
TRIM FOR A VEHICLE CAB
Harvey F. Dick, Chagrin Falls, Ohio, assignor to White Motor Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Feb. 23, 1968, Ser. No. 10,691
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D14—6



214,040
COMBINED VEHICLE CAB AND ROLL BAR
Charles L. Harbeck, Pewaukee, and Raymond N. Sellon, Shorewood, Wis., assignors to Stolper Industries, Inc., Menomonee Falls, Wis., a corporation of Wisconsin
Filed Jan. 26, 1968, Ser. No. 10,335
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D14—27



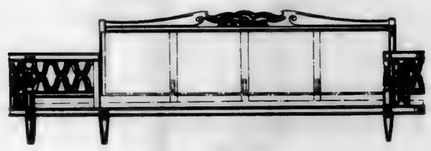
214,041
COMBINED SEATING AND TABLE UNIT
Don S. Shoemaker, % Senal, S.A., Santa Maria de Guido, Morelia, Michoacan, Mexico
Original design application Dec. 6, 1965, Ser. No. 74, now Patent No. 208,649, dated Sept. 26, 1967. Divided and this application Aug. 28, 1967, Ser. No. 9,552
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D15—1



214,042
STADIUM BENCH
John P. Henebry, Kenilworth, Ill., and Earl E. Stineback, Plainwell, Mich., assignors to North American Aluminum Corporation, Kalamazoo, Mich., a corporation of Delaware
Filed Mar. 13, 1968, Ser. No. 10,954
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D15—11



214,043
FRAME FOR AN OVERSTUFFED SOFA OR THE LIKE
Henry Klein, 252—05 Culman Ave., Little Neck, N.Y. 11362
Filed July 23, 1968, Ser. No. 12,860
Term of patent 7 years
Int. Cl. D6—*01*
U.S. Cl. D15—11



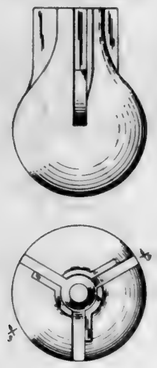
214,044
FISHING LURE
William Thomas Mann, P.O. Box 604, Eufaula, Ala. 36027
Filed May 7, 1968, Ser. No. 11,830
Term of patent 7 years
Int. Cl. D22—*07*
U.S. Cl. D22—27



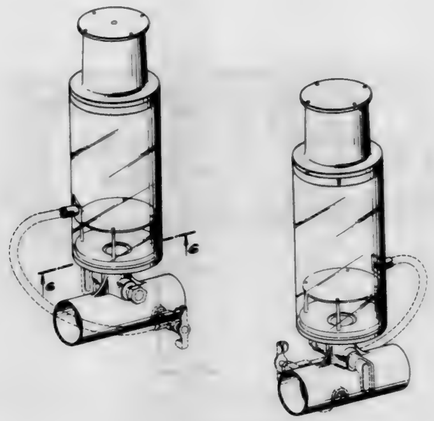
214,045
FISH LURE
Philip C. Ziegler, 5672 Babbitt St., Haslett, Mich. 48840
Filed May 31, 1968, Ser. No. 12,150
Term of patent 14 years
Int. Cl. D22—*08*
U.S. Cl. D22—27



214,046
SNAG PREVENTIVE SINKER OR SIMILAR ARTICLE FOR TREBLE FISH HOOKS
Robert E. Spencer, Rte. 2, Nokesville, Va. 22123
Filed Apr. 2, 1968, Ser. No. 11,266
Term of patent 14 years
Int. Cl. D22—*08*
U.S. Cl. D22—30



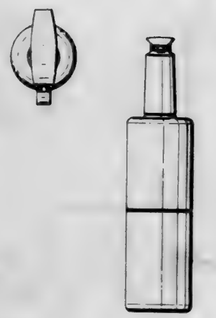
214,047
CHLORINATOR UNIT FOR SWIMMING POOLS OR THE LIKE
Wesley V. Bates and Bobby L. Bates, San Dimas, Calif., assignors to Jacketing Specialty, a corporation of California
Filed Aug. 1, 1968, Ser. No. 12,995
Term of patent 14 years
Int. Cl. D23—*01*
U.S. Cl. D23—3



214,048
SPRAY WAND
John William Mason, Hopewell Junction, N.Y., assignor to Faultless Starch Company, Kansas City, Mo., a corporation of Missouri
Filed Aug. 2, 1968, Ser. No. 13,015
Term of patent 14 years
Int. Cl. D23—*01*
U.S. Cl. D23—15



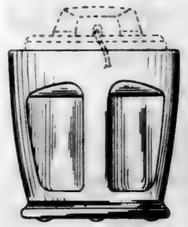
214,049
DISPENSER FOR LIQUIDS OR FLUIDISED POWDERS
Derrick R. Gatley, Reading, England, assignor to Graviner (Colnbrook) Limited, London, England, a British company
Filed Apr. 1, 1968, Ser. No. 11,252
Term of patent 14 years
Int. Cl. D23—*01*; D9—*01*
U.S. Cl. D23—17



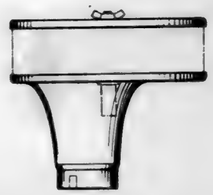
214,050
TOILET TANK BALLCOCK OR THE LIKE
Harry W. Hudson, Littleton, Colo., assignor to Twentieth Century Products Corp., Englewood, Colo.
Filed Feb. 1, 1968, Ser. No. 10,399
Term of patent 14 years
Int. Cl. D23—*01*
U.S. Cl. D23—40



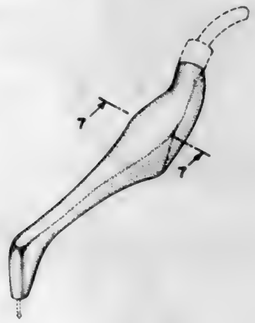
214,051
VAPORIZER BOWL
Lawrence Katzman and Edward Briggin, New York, N.Y., assignors to Kaz Manufacturing Co., Inc., New York, N.Y., a corporation of New York
Filed Jan. 2, 1968, Ser. No. 10,012
Term of patent 14 years
Int. Cl. D23—*04*
U.S. Cl. D23—148



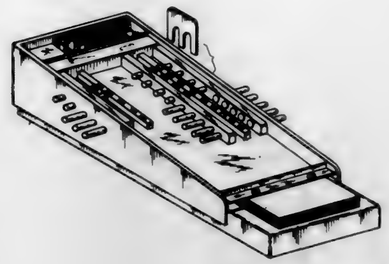
214,052
AIR CLEANER FOR ENGINES OR THE LIKE
Donald F. Haskin, 11416 Miranda St., North Hollywood, Calif. 91605, and Max Becker, 14058 Valley Heart Drive, #3, Sherman Oaks, Calif. 91403
Filed Apr. 22, 1968, Ser. No. 11,542
Term of patent 14 years
Int. Cl. D23—*04*
U.S. Cl. D23—149



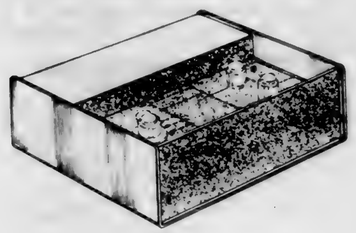
214,053
DENTAL HANDPIECE
Ralph Edward Grossman, 1270 E. 18th St., Brooklyn, N.Y. 11230
Filed Apr. 11, 1968, Ser. No. 11,409
Term of patent 14 years
Int. Cl. D24—*03*
U.S. Cl. D24—1



214,054
ARITHMETIC TEACHING DEVICE
Arnold Fine and Myron Goldberg, Queens, N.Y.
Filed Feb. 20, 1968, Ser. No. 10,648
Term of patent 14 years
Int. Cl. D19—*08*
U.S. Cl. D25—1



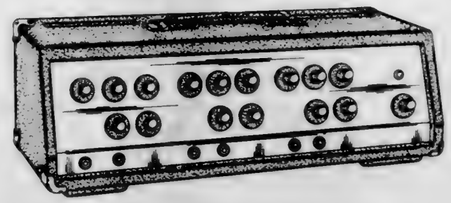
214,055
HOUSING FOR ELECTRONIC APPARATUS
Brant W. Becker, Sudbury, Mass., assignor to Intronics Incorporated, Newton, Mass., a corporation of Massachusetts
Filed Feb. 28, 1968, Ser. No. 10,758
Term of patent 14 years
Int. Cl. D14—*99*
U.S. Cl. D26—1



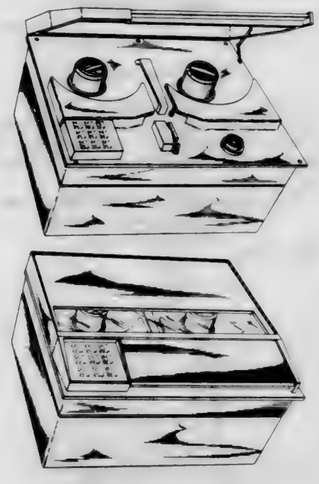
214,056
WELDING TORCH
Richard A. Trepanier, 509 Howard St., Elmhurst, Ill. 60126
Filed Apr. 19, 1968, Ser. No. 11,529
Term of patent 14 years
Int. Cl. D8—*02*; D23—*03, 99*
U.S. Cl. D26—1



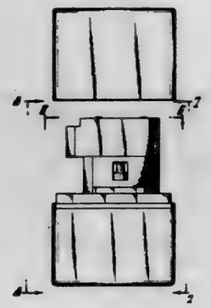
214,057
PORTABLE PLURAL CHANNEL ELECTRONIC AMPLIFIER
Lloyd D. Ross, Jr., Cleveland, Ohio, assignor to Electronic Music Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Dec. 22, 1967, Ser. No. 9,887
Term of patent 14 years
Int. Cl. D14—*04*
U.S. Cl. D26—14



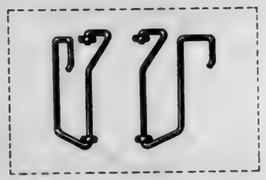
214,058
MAGNETIC TAPE TRANSPORT
Leon C. Sanderson, Culver City, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Apr. 29, 1968, Ser. No. 11,672
Term of patent 14 years
Int. Cl. D14—*01*
U.S. Cl. D26—14



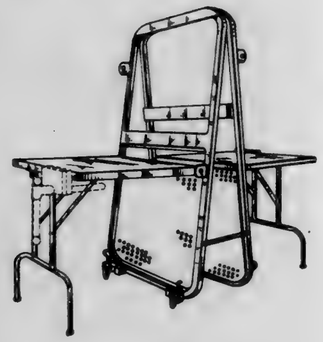
214,059
CHARGING UNIT FOR ELECTRIC SHAVERS
Bodo Futterer, Sarnen, Switzerland, assignor to The Gillete Company, Boston, Mass., a corporation of Delaware
Filed Mar. 13, 1968, Ser. No. 10,942
Claims priority, application Germany Sept. 13, 1967
Term of patent 14 years
Int. Cl. D13—*02*
U.S. Cl. D26—15



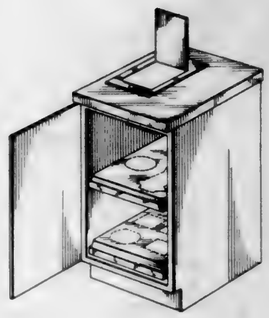
214,060
X-RAY APRON AND GLOVE RACK
Eric Hughes, 23919 W. Malibu Road, Malibu, Calif. 90265
Filed Mar. 14, 1967, Ser. No. 6,217
Term of patent 7 years
Int. Cl. D24—*02*
U.S. Cl. D33—3



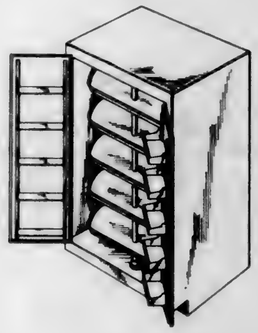
214,061
COLLAPSIBLE WORK BENCH
Alan J. Solo, Brooklyn, N.Y., assignor to Creative Environments Inc., New York, N.Y., a corporation of New York
Filed July 12, 1967, Ser. No. 7,784
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D33—14



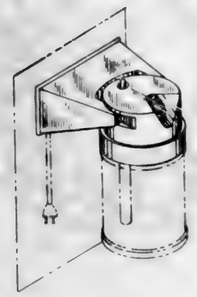
214,062
HOUSEHOLD APPLIANCE CABINET OR SIMILAR ARTICLE
Douglas N. Cabell, Birmingham, Mich., assignor to Ronson Corporation, Woodbridge, N.J., a corporation of New Jersey
Filed Aug. 24, 1967, Ser. No. 8,383
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D33—19



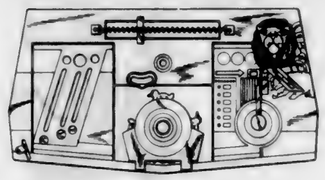
214,063
CABINET WITH REVOLVING SHELVES
Bruce A. Preston, Rockford, Ill., assignor to Amerock Corporation, Rockford, Ill., a corporation of Connecticut
Filed Mar. 1, 1968, Ser. No. 10,802
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D33—19



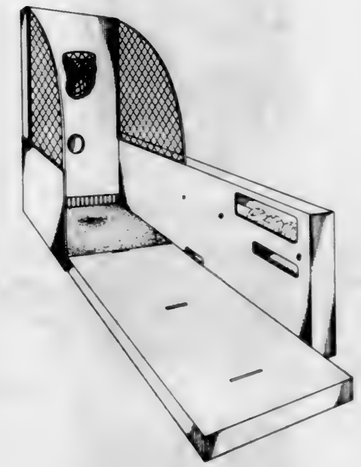
214,064
COMBINED SUPPORT BRACKET AND SPRAY HEAD FOR A DISPENSER
Raymond E. Portyrata, North Haven, Conn., assignor to Labranche Industries, Inc., New Bedford, Mass., a corporation of Massachusetts
Filed Nov. 15, 1967, Ser. No. 9,421
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D33—30



214,065
TOY SHOOTING TARGET OR SIMILAR ARTICLE
Laurie Jay Campbell, Erie, Pa., assignor to Louis Marx & Company, Inc., New York, N.Y., a corporation of New York
Filed Dec. 7, 1967, Ser. No. 9,678
Term of patent 14 years
Int. Cl. D21—*02*
U.S. Cl. D34—5



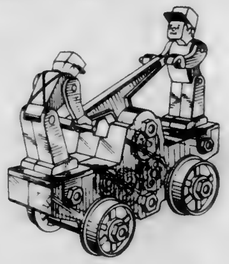
214,066
COMBINED GOLF, BASEBALL AND BASKETBALL GAME TARGET
Joseph D. Benigno, 13 Barry Park Court, Searingtown, N.Y. 11507
Filed Mar. 4, 1968, Ser. No. 10,821
Term of patent 14 years
Int. Cl. D21—*1*
U.S. Cl. D34—5



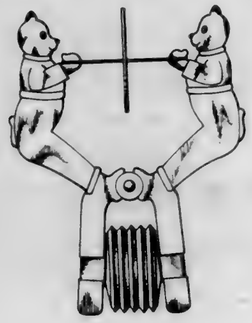
214,067
GOLF CLUB
William E. Mendes, Menden, Nev., assignor to Carson Valley Meat Co., Menden, Nev., a corporation of Nevada
Filed May 31, 1968, Ser. No. 12,152
Term of patent 14 years
Int. Cl. D21—*03*
U.S. Cl. D34—5



214,068
TOY RAILROAD HAND CAR
Robert Genin, Scarsdale, N.Y., assignor to Child Guidance Toys Inc., Bronx, N.Y., a corporation of New York
Filed July 18, 1967, Ser. No. 7,845
Term of patent 14 years
Int. Cl. D21—*02*
U.S. Cl. D34—15



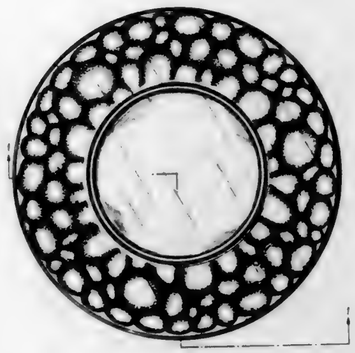
214,069
WHIRLING DISC TOY
Kenneth E. Beckley, 8204 S. Broadway, Apt. A, Whittier, Calif. 90606
Filed Aug. 5, 1968, Ser. No. 13,034
Term of patent 14 years
Int. Cl. D21—*02*
U.S. Cl. D34—15



214,070
HANDLE FOR GARDEN TOOLS OR THE LIKE
Kyoichi Nagaoka, % Daimikawashimaso, 5-343-1 Hikarimachi, Kokubunji-shi, Tokyo-to, Ashikaga, Japan
Filed Jan. 22, 1968, Ser. No. 10,237
Term of patent 7 years
Int. Cl. D8—*01, 02*
U.S. Cl. D35—2



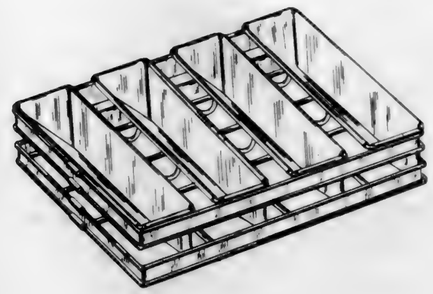
214,071
PLATE
Ben Seibel, New York, N.Y., assignor to Fostoria Glass Company, Moundsville, W. Va.
Filed Feb. 5, 1968, Ser. No. 10,439
Term of patent 14 years
Int. Cl. D7—*01*
U.S. Cl. D36—2



214,072
JACK
Terrell J. Reese, Osolo Township, Elkhart County, Ind., assignor to Reese Products, Inc., Elkhart, Ind., a corporation of Indiana
Filed Aug. 12, 1968, Ser. No. 13,114
Term of patent 14 years
Int. Cl. D8—*02*
U.S. Cl. D41—1



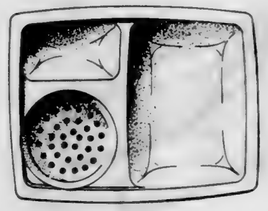
214,073
BREAD PAN
Charles E. Burford, Maysville, Okla. 73656
Filed June 23, 1967, Ser. No. 7,576
Term of patent 14 years
Int. Cl. D7—*02*
U.S. Cl. D44—1



214,074
SERVING TRAY FOR BEVERAGES OR THE LIKE
Catherine E. Thompson, 12205 Falkirk Lane, West Los Angeles, Calif. 90049
Filed Jan. 15, 1968, Ser. No. 10,157
Term of patent 3½ years
Int. Cl. D7—*01*
U.S. Cl. D44—10



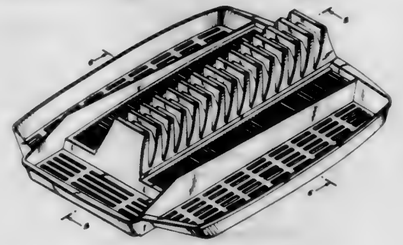
214,075
SNACK TRAY OR SIMILAR ARTICLE
Jack E. Pregont, 1168 Columbus Circle, Janesville, Wis. 53545
Filed May 7, 1968, Ser. No. 11,822
Term of patent 14 years
Int. Cl. D7—*01*; D9—*04*
U.S. Cl. D44—10



214,076
INSULATED CARAFE
Clyde E. Gillespie, 1025 Valley Road, Charleston, W. Va. 25302
Filed Mar. 28, 1968, Ser. No. 11,164
Term of patent 14 years
Int. Cl. D7—*01*
U.S. Cl. D44—21



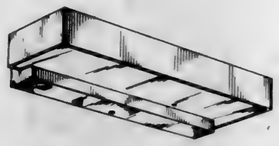
214,077
DRAINING RACK FOR DISHES AND OTHER KITCHEN UTENSILS
Louis Kriegel, Flushing, N.Y., assignor to Joy Plastics, Inc., New York, N.Y., a corporation of New York
Filed Mar. 18, 1968, Ser. No. 11,032
Term of patent 14 years
Int. Cl. D7—*06*
U.S. Cl. D44—29



214,078
COMBINED CONTAINER OPENER AND CORKSCREW
Fred S. Steiner, Woodmere, N.Y., assignor to Bonny Products, Inc., Lynbrook, N.Y., a corporation of New York
Filed Apr. 17, 1968, Ser. No. 11,484
Term of patent 14 years
Int. Cl. D8—*02*
U.S. Cl. D44—29



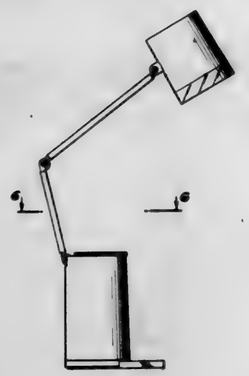
214,079
LIGHTING CONSOLE
Henry C. Schiffer, Cheshire, Conn., assignor to The Miller Company, Meriden, Conn., a corporation of Connecticut
Filed June 11, 1968, Ser. No. 12,302
Term of patent 14 years
Int. Cl. D26—*02*
U.S. Cl. D48—4



214,080
REFLECTOR FOR AN INDUSTRIAL SAFETY LIGHT
Shinjiro Mori, Tokyo, Japan, assignor to Mori Denki Manufacturing Co., Ltd., Tokyo, Japan, a company of Japan
Filed Jan. 2, 1968, Ser. No. 10,000
Claims priority, application Japan Sept. 23, 1967
Term of patent 14 years
Int. Cl. D26—*04, 99*
U.S. Cl. D48—16



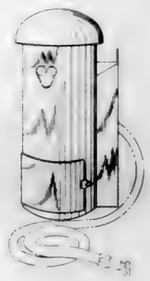
214,081
HIGH-INTENSITY LAMP OR SIMILAR ARTICLE
Minoru Araki, Tokyo, Japan, assignor to Lloyd's Electronics International, a corporation of California
Continuation-in-part of design application Ser. No. 86,965, Sept. 13, 1965. This application Jan. 10, 1966, Ser. No. 1,856
Claims priority, application Japan May 14, 1965
Term of patent 14 years
Int. Cl. D26—*02*
U.S. Cl. D48—20



214,082
PORTABLE RETRACTABLE LAMP
Hiroshi Daito, Ukyoku, Kyoto, Japan, assignor to Blackwell Electronics Ind. Co., Ltd., Kyoto, Japan, a corporation of Japan
Filed Nov. 6, 1967, Ser. No. 9,281
Claims priority, application Japan May 4, 1967
Term of patent 14 years
Int. Cl. D26—*02*
U.S. Cl. D48—20



214,083
INDUSTRIAL VACUUM CLEANING UNIT
Ira J. Alligood, Jr., 184 Scarboro Drive, York, Pa. 17403
Filed Jan. 22, 1968, Ser. No. 10,240
Term of patent 14 years
Int. Cl. D15—*06*
U.S. Cl. D49—11



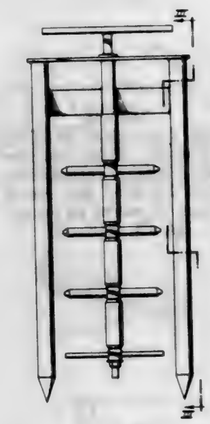
214,084
VACUUM CLEANER FOR AN AUTOMOBILE
Yiu Dak Chi, Kowloon, Hong Kong, assignor to Forda Manufacturing Company Limited, Kowloon, Hong Kong
Filed Aug. 28, 1968, Ser. No. 13,295
Term of patent 14 years
Int. Cl. D15—*07*
U.S. Cl. D49—13



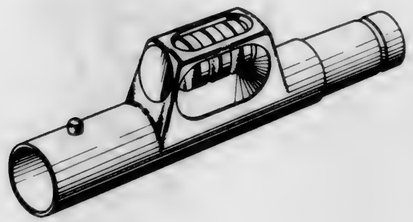
214,085
TWO-PIECE SQUEEGEE
William Fred Fremdling, West Los Angeles, Calif., assignor to Wefco Rubber Manufacturing Corp., a corporation of California
Filed June 12, 1968, Ser. No. 12,311
Term of patent 14 years
Int. Cl. D7—*06*
U.S. Cl. D49—23



214,086
SPACING JIG FOR CABLES TO BE ENCASED IN CONCRETE OR THE LIKE
Charles H. Powell, 4814¼ W. 98th St., Inglewood, Calif. 90301
Filed Dec. 11, 1967, Ser. No. 9,737
Term of patent 14 years
Int. Cl. D8—*02*; D25—*05*
U.S. Cl. D8—228



214,087
DUST BAG FILLING INDICATOR
Rudolph Bernard Zijlstra, Drachten, Netherlands, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed July 31, 1967, Ser. No. 8,064
Term of patent 14 years
Claims priority, application Switzerland Jan. 31, 1967
Int. Cl. D10—*08*
U.S. Cl. 52—6

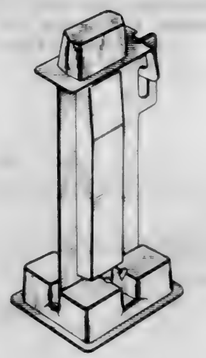


214,088
TESTER FOR HEARING AID BATTERIES
Gaspare Bellafiore, 106 Eaton St., Providence, R.I. 02908
Filed Apr. 8, 1968, Ser. No. 11,363
Term of patent 14 years
Int. Cl. D10—*10*
U.S. Cl. D52—6

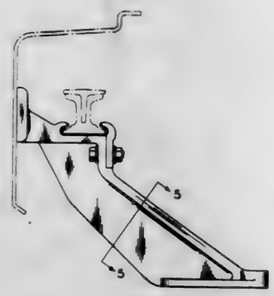


214,089
TEMPLATE
James B. Simms, 110 N. 2nd St., Edwardsville, Ill. 62025
Filed Apr. 16, 1968, Ser. No. 11,490
Term of patent 14 years
Int. Cl. D10—*08*
U.S. Cl. D52—6

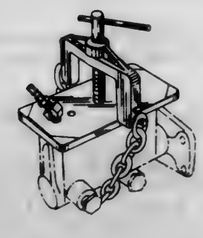
214,090
THERMOMETER HOLDER
Frank R. Beich, Wilmette, and Leonard Seeley, Palatine, Ill., assignors to American Hospital Supply Corporation, Evanston, Ill., a corporation of Illinois
Filed May 2, 1967, Ser. No. 6,917
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D52—7



214,091
ELECTRIC CONDUCTOR BAR AND GUARD SUPPORT
Roy F. Dehn, Wickliffe, Ohio, assignor to McNeil Corporation, Akron, Ohio, a corporation of Ohio
Filed Oct. 26, 1967, Ser. No. 9,171
Term of patent 14 years
Int. Cl. D13—*03*
U.S. Cl. D54—1



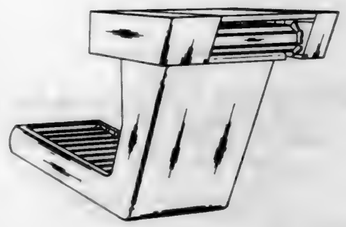
214,092
BRAKE BLEEDER ADAPTER
Leo C. Bogaerts, Antioch, Ill., assignor to Ammco Tools, Inc., a corporation of Illinois
Filed Jan. 2, 1968, Ser. No. 10,018
Term of patent 14 years
Int. Cl. D8—*02*
U.S. Cl. D54—13



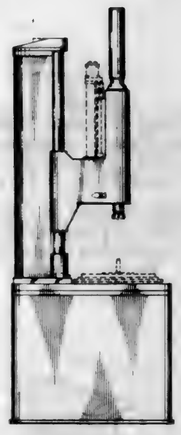
214,093
HOLDING FIXTURE FOR ENGINE HEADS
Gordon Louis Greene, 818 Bald Eagle Ave., White Bear Lake, Minn. 55110
Filed Apr. 4, 1968, Ser. No. 11,306
Term of patent 14 years
Int. Cl. D15—*05*
U.S. Cl. D54—13



214,094
CONVEYOR
Harry E. Ziegler, Chardon, Ohio, assignor to May-Fran Manufacturing Co., Cleveland, Ohio, a corporation of Ohio
Filed Oct. 11, 1967, Ser. No. 8,958
Term of patent 14 years
Int. Cl. D12—*05*
U.S. Cl. D55—1



214,095
SPLINE LAPPING MACHINE
Michel P. Heldt, Detroit, Mich., assignor to Vinco Corporation, Detroit, Mich., a corporation of Michigan
Filed Oct. 26, 1967, Ser. No. 9,179
Term of patent 14 years
Int. Cl. D15—*05*
U.S. Cl. D55—1



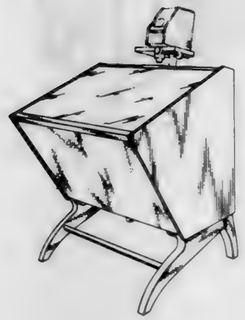
214,096
PHONOGRAPH CABINET
Raoul E. Rodriguez, Chicago, Ill., and Carl W. Sundberg, Bloomfield Hills, Mich., assignors to The Seeburg Corporation, Chicago, Ill., a corporation of Delaware
Filed Oct. 30, 1967, Ser. No. 9,205
Term of patent 14 years
Int. Cl. D14—*01*; D17—*05*
U.S. Cl. D56—4



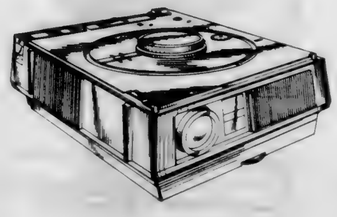
214,097
BRACKET FOR ATTACHING STROBOSCOPIC FLASH ATTACHMENT
Martin S. Ackerman, East Hills, N.Y., assignor to Perfect Film & Chemical Corporation, Manhasset, N.Y., a corporation of Delaware
Filed Oct. 18, 1967, Ser. No. 9,060
Term of patent 14 years
Int. Cl. D16—*07*
U.S. Cl. D61—1



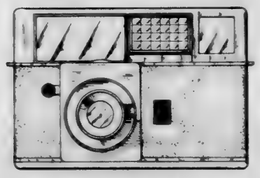
214,098
MICROFILM READER
Donald L. Pellow, 173 Creekdale Road, Walnut Creek, Calif. 94529
Filed Nov. 14, 1967, Ser. No. 9,394
Term of patent 14 years
Int. Cl. D16—*04*
U.S. Cl. D61—1



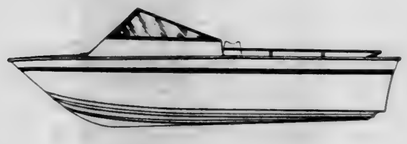
214,099
SLIDE PROJECTOR
Thomas M. Steinbach, Park Ridge, and Robert M. Simonelli, Des Plaines, Ill., assignors to GAF Corporation, a corporation of Delaware
Filed Feb. 20, 1968, Ser. No. 10,657
Term of patent 14 years
Int. Cl. D16—*03*
U.S. Cl. D61—1



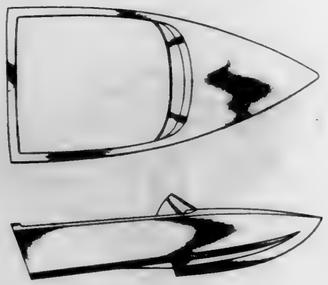
214,100
CAMERA
Martin S. Ackerman and George Hardy, East Hills, N.Y., assignors to Perfect Film & Chemical Corporation, Manhasset, N.Y., a corporation of Delaware
Filed June 4, 1968, Ser. No. 12,211
Term of patent 14 years
Int. Cl. D16—*01*
U.S. Cl. D61—1



214,101
BOAT
Terry J. Simpkins, Dublin, Ohio, assignor to Slickcraft Boat Company, Holland, Mich., a corporation of Michigan
Filed Oct. 7, 1968, Ser. No. 13,863
Term of patent 14 years
Int. Cl. D12—*06*
U.S. Cl. D71—1

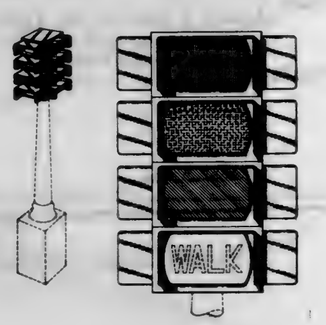


214,102
PLANING BOAT
Randolph S. Rae, 858 Production Place, Newport Beach, Calif. 92660
Filed Jan. 11, 1968, Ser. No. 10,133
Term of patent 14 years
Int. Cl. D12—*06*
U.S. Cl. D71—1

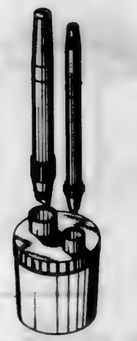


214,103
MAST HOLDER FOR SURFBOARD
Warren D. Witt, 5595 Lemon Ave., Long Beach, Calif. 90805
Filed May 20, 1968, Ser. No. 12,000
Term of patent 3½ years
Int. Cl. D12—*14*
U.S. Cl. D71—1

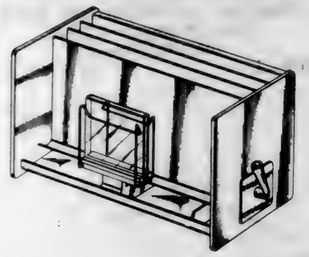
214,104
TRAFFIC LIGHT
Thomas M. Karl, 501 S. Broadway, New Ulm, Minn. 56073
Filed Jan. 24, 1968, Ser. No. 10,296
Term of patent 14 years
The portion of the term of the patent subsequent to Nov. 14, 1981, has been disclaimed
Int. Cl. D29—*99*
U.S. Cl. D72—1



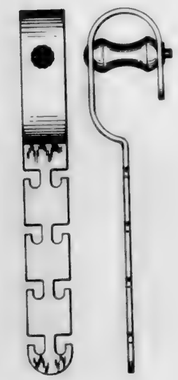
214,105
DESK SET OF MARKING PENS AND INKWELL
Nathan R. Cline, 752 S. Belmont, Wichita, Kans. 67218
Filed May 2, 1966, Ser. No. 2,102
Term of patent 14 years
Int. Cl. D19—*02*
U.S. Cl. D74—5



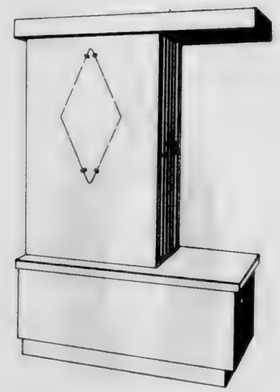
214,106
DESK STAND
Robert M. Williams, 4568 Argyle Terrace NW., Washington, D.C. 20011
Filed May 1, 1968, Ser. No. 11,733
Term of patent 14 years
Int. Cl. D19—*02*
U.S. Cl. D74—5



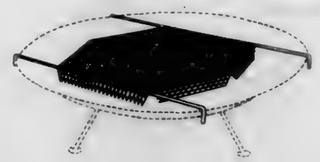
214,107
ROLLING SUPPORT FOR GARMENT HANGERS
Daniel T. Hallahan, New York, N.Y., assignor to Sanjo Utility Mfg. Co. Inc., Brooklyn, N.Y.
Filed May 9, 1968, Ser. No. 11,864
Term of patent 14 years
Int. Cl. D6—*07*; D8—*03*
U.S. Cl. D80—8



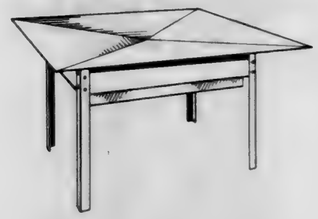
214,108
DISPLAY CABINET FOR EYEGLASS FRAMES OR THE LIKE
Rolf Sulzberger, 3 Cedar St., Worcester, Mass. 01609
Filed Mar. 14, 1968, Ser. No. 10,967
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D80—11



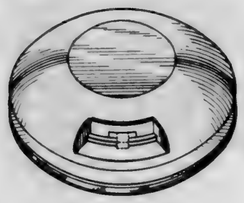
214,109
GRILL
Robert G. Kaslow, Arapahoe, and Earell E. Kissinger, Jefferson, Colo.; said Kissinger assignor to Vesta Corporation, Denver, Colo., a corporation of Colorado
Filed Mar. 16, 1967, Ser. No. 6,247
Term of patent 14 years
Int. Cl. D7—*04*
U.S. Cl. D81—10

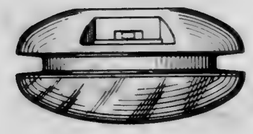


214,110
COMBINATION OYSTER ROASTER AND GRILL
Charles R. Adams, 255 Kensington Road, and Otis R. Burbage, Jr., 1790 Balfoure Drive, both of Charleston, S.C. 29407; and Linwood W. Stancil, Jr., Charleston, S.C. (4748 Bordwell Drive, San Jose, Calif. 95118)
Filed Sept. 22, 1967, Ser. No. 8,692
Term of patent 14 years
Int. Cl. D7—*04*
U.S. Cl. D81—10

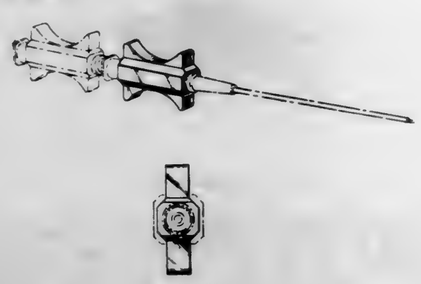


214,111
ELECTRIC MASSAGER
Douglas W. Anderson, Palatine, Ill., assignor to Burgess Vibrocrafters, Inc., Grayslake, Ill., a corporation of Delaware
Filed Mar. 8, 1968, Ser. No. 10,904
Term of patent 14 years
Int. Cl. D24—*99*; D28—*03*
U.S. Cl. D83—1

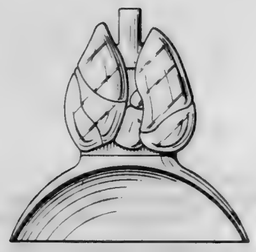




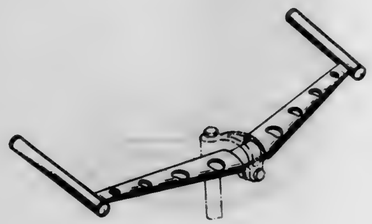
214,112
INTRAVENOUS NEEDLE HUB
Arthur J. Langdon, East Hampton, Conn., assignor to Edward Weck & Company, Inc., Long Island City, N.Y., a corporation of Delaware
Continuation-in-part of design application Ser. No. 1,623, Mar. 24, 1966. This application Apr. 25, 1968, Ser. No. 11,614
Term of patent 14 years
Int. Cl. D24—*03*
U.S. Cl. D83—12



214,113
ASH TRAY HOOD
Wayman R. Spence, 1479 Devonshire Drive, Salt Lake City, Utah 84108
Filed May 9, 1968, Ser. No. 11,865
Term of patent 14 years
Int. Cl. D27—*03*
U.S. Cl. D85—2



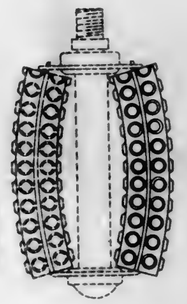
214,114
BICYCLE HANDLEBAR
Norman A. Clarke, Westfield, Mass., assignor to The Columbia Manufacturing Co., Inc., Westfield, Mass., a corporation of Massachusetts
Filed Sept. 18, 1968, Ser. No. 13,592
Term of patent 7 years
Int. Cl. D12—*11*
U.S. Cl. D90—11



214,115
CYCLE PEDAL TREAD BLOCK
Hugh T. Greenlee, Gates Mills, Ohio, assignor to Ashtabula Bow Socket Company, Ashtabula, Ohio, a corporation of Ohio
Filed Jan. 16, 1968, Ser. No. 10,178
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D90—14



214,116
CYCLE PEDAL TREAD BLOCK
Hugh T. Greenlee, Gates Mills, Ohio, assignor to Ashtabula Bow Socket Company, Ashtabula, Ohio, a corporation of Ohio
Filed Jan. 16, 1968, Ser. No. 10,179
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D90—14



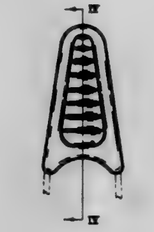
214,117
CYCLE PEDAL TREAD BLOCK
Hugh T. Greenlee, Gates Mills, Ohio, assignor to Ashtabula Bow Socket Company, Ashtabula, Ohio, a corporation of Ohio
Filed Jan. 16, 1968, Ser. No. 10,187
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D90—14



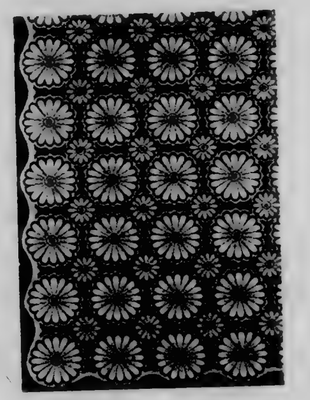
214,118
CYCLE PEDAL TREAD BLOCK
Robert R. Hussey, Ashtabula, Ohio, assignor to Ashtabula Bow Socket Company, Ashtabula, Ohio, a corporation of Ohio
Filed Feb. 28, 1968, Ser. No. 10,756
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D90—14



214,119
BACKREST FOR A BICYCLE SEAT
George W. Worley, Bolivar, Tenn., assignor to Troxel Manufacturing Company, Moscow, Tenn., a corporation of Ohio
Filed May 29, 1968, Ser. No. 12,135
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D90—16



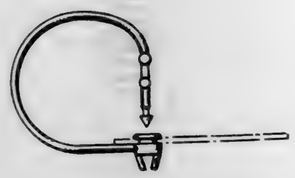
214,120
TABLECLOTH
Francesco P. Castorani, Box 127, W. Whiteland, Exton, Pa. 19341
Filed Aug. 5, 1968, Ser. No. 13,028
Term of patent 14 years
Int. Cl. D6—*09*
U.S. Cl. D92—26



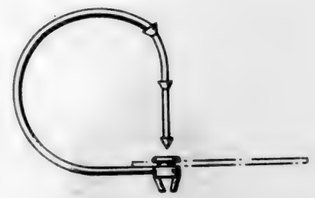
214,121
SOFT WRAPPINGS CUTTER
Leonard W. Cheslak, 13552 Arizona, Westminster, Calif. 92683
Filed June 26, 1968, Ser. No. 12,509
Term of patent 14 years
Int. Cl. D8—*02*
U.S. Cl. D95—3



214,122
FILAMENT FOR ATTACHING A TAG TO AN ARTICLE
Francis G. Merser, Framingham, Mass., assignor to Dennison Manufacturing Company, Framingham, Mass., a corporation of Nevada
Filed Oct. 27, 1967, Ser. No. 9,187
Term of patent 14 years
Int. Cl. D20—*99*; D9—*08*
U.S. Cl. D96—1



214,123
FILAMENT FOR ATTACHING A TAG TO AN ARTICLE
Francis G. Merser, Framingham, Mass., assignor to Dennison Manufacturing Company, Framingham, Mass., a corporation of Nevada
Filed Nov. 21, 1967, Ser. No. 9,494
Term of patent 14 years
Int. Cl. D8—*99*
U.S. Cl. D96—1



LIST OF DEFENSIVE PUBLICATIONS

APPLICANTS TO WHOM

DEFENSIVE PUBLICATIONS WERE ISSUED ON THE 6TH DAY OF MAY, 1969

"Published at the request of the applicant or owner in accordance with the Notice of April 11, 1968, 849 O.G. 1221. Identification is by serial number of the application."

Baetzold, Roger C. Method for extending the flash life of vapor-filled electric discharge lamps. 780,435, 5–6–69, Cl. 250—50.
Bard, Charleton C., and J. C. Battaglini. Regeneration of photographic silver bleach solutions. 752,509, 5–6–69, Cl. 96—60.
Battaglini, Julius C.: *See*—
Bard, Charleton C., and Battaglini. 752,509.
Buteux, Richard H. B.: *See*—
Barr, Dennis A., and Buteux. 781,680.
Du Pont de Nemours, E. I., and Co.: *See*—
Heits, Ronald G., and Hutchens. 773,441.
Harris, David A.: *See*—
Koronka, Paul, and Harris. 777,309.
Hutchens, George H.: *See*—
Heits, Ronald G., and Hutchens. 773,441.
Heits, Ronald G., and G. H. Hutchens, to E. I. du Pont de Nemours and Co. Spinneret capillary inspection apparatus. 773,441, 5–6–69, Cl. 250—219.
Hull, David C. Wash oil. 741,203, 5–6–69, Cl. 252—162.
Irick, Gether, Jr. 1-(α,α-disubstituted methylene)-3-indanones and -indanes from indan-1,3-diones. 670,757, 5–6–69, Cl. 260—240.
Imperial Chemicals Industries, Ltd.: *See*—
Morgans, David E. B. 768,945.
Koronka, Paul, and Harris. 777,309.
International Business Machines Corp.: *See*—
Middelhoek, Simon. 572,032.
Koronka, Paul, and D. A. Harris, to Imperial Chemical Industries, Ltd. Agricultural device. 777,309, 5–6–69, Cl. 111—88.
Middelhoek, Simon, to International Business Machines Corp. Nondestructive-readout operation of magnetic film memory devices. 572,032, 5–6–69, Cl. 340—174.
Morgans, David E. B., to Imperial Chemicals Industries, Ltd. Shaped articles of fluorine-containing polymers filled with carbonaceous material. 768,945, 5–6–69, Cl. 117—46.
Mullins, Otto P.: *See*—
Whitaker, Andrew W., and Mullins. 601,146.
Whitaker, Andrew W., and O. P. Mullins. Air-oil mist generating device with alarm means. 601,146, 5–6–69, Cl. 340—412.

LIST OF PLANT PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 6TH DAY OF MAY, 1969

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Anderson, Frederic W., to Reedley Nursery, Inc. Nectarine tree. 2,883, 5–6–69, Cl. 41.
Boerner, Eugene S., deceased (by Lincoln Rochester Trust Co., and R. L. Boerner, executors), to Jackson & Perkins Co. Rose plant. 2,885, 5–6–69, Cl. 26.
Boerner, Roger L.: *See*—
Boerner, Eugene S. 2,885.
De Graaff, Jan, to Oregon Bulb Farms, Division of Melridge Inc. Lily plant. 2,882, 5–6–69, Cl. 68.
Hagestrom, Marion, to Stark Bro's Nurseries & Orchards Co. Strawberry plant. 2,884, 5–6–69, Cl. 48.
Jackson & Perkins Co.: *See*—
Boerner, Eugene S. 2,885.
Lincoln Rochester Trust Co.: *See*—
Boerner, Eugene S. 2,885.
Oregon Bulb Farms, Division of Melridge Inc.: *See*—
De Graaff, Jan. 2,882.
Reedley Nursery, Inc.: *See*—
Anderson, Frederic W. 2,883.
Stark Bro's Nurseries & Orchards Co.: *See*—
Hagerstrom, Marion. 2,884.

LIST OF DESIGN PATENTEES

Ackerman, Martin S., to Perfect Film & Chemical Corp. Bracket for attaching stroboscopic flash attachment. 214,097, 5–6–69, Cl. D61—1.
Ackerman, Martin S., and G. Hardy, to Perfect Film & Chemical Corp. Camera. 214,100, 5–6–69, Cl. D61—1.
Adams, Charles R., O. R. Burbage, Jr., and L. W. Stancil, Jr. Combination oyster roaster and grill. 214,110, 5–6–69, Cl. D81—10.
Alligood, Ira J., Jr. Industrial vacuum cleaning unit. 214,083, 5–6–69, Cl. D49—11.
American Hospital Supply Corp.: *See*—
Beich, Frank R., and Seeley. 214,090.
Amerock Corp.: *See*—
Clayton, La Verne E. 214,029.
Clayton, La Verne E. 214,030.
Preston, Bruce A. 214,063.
Ammco Tools, Inc.: *See*—
Bogaerts, Leo C. 214,092.
Ampex Corp.: *See*—
Sanderson, Leon C. 214,058.
Anderson, Douglas W., to Burgess Vibrocrafters, Inc. Electric massager. 214,111, 5–6–69, Cl. D83—1.
Araki, Minoru, to Lloyd's Electronics International. High-intensity lamp or similar article. 214,081, 5–6–69, Cl. D48—20.
Ashtabula Bow Socket Co.: *See*—
Greenlee, Hugh T. 214,115.
Greenlee, Hugh T. 214,116.
Greenlee, Hugh T. 214,117.
Hussey, Robert R. 214,118.
Bacialli, Paolo. Can. 214,021, 5–6–69, Cl. D9—44.
Bates, Bobby L.: *See*—
Bates, Wesley V. and B. L. 214,047.
Bates Industries, Inc.: *See*—
Jones, Paul R. 214,013.
Jones, Paul R. 214,014.
Bates, Wesley V. and B. L., to Jacketing Specialty, Chlorinator unit for swimming pools or the like. 214,047, 5–6–69, Cl. D23—3.
Beaumont, William E., to Downey Fertilizer Co. Combined package and spreader for pulverulent material. 214,023, 5–6–69, Cl. D9—221.
Beaumont, William E., to Downey Fertilizer Co. Combined package and spreader for pulverulent material. 214,024, 5–6–69, Cl. D9—221.
Becker, Brant W., to Intronics Inc. Housing for electronic apparatus. 214,055, 5–6–69, Cl. D26—1.
Becker, Max: *See*—
Haskin, Donald F., and Becker. 214,052.
Beckley, Kenneth E. Whirling disc toy. 214,069, 5–6–69, Cl. D34—15.
Beich, Frank R., and L. Seeley, to American Hospital Supply Corp. Thermometer holder. 214,090, 5–6–69, Cl. D52—7.
Bellafiore, Gaspare. Tester for hearing aid batteries. 214,088, 5–6–69, Cl. D52—6.
Benigno, Joseph D. Combined golf, baseball and basketball game target. 214,066, 5–6–69, Cl. D34—5.
Blackwell Electronics Inc. Co., Ltd.: *See*—
Daito, Hiroshi. 214,082.
Bogaerts, Leo C., to Ammco Tools, Inc. Brake bleeder adapter. 214,092, 5–6–69, Cl. D54—13.
Bonny Products, Inc.: *See*—
Steiner, Fred S. 214,078.
Briggin, Edward: *See*—
Katzman, Lawrence, and Briggin. 214,051.
Burbage, Otis R., Jr.: *See*—
Adams, Charles R., Burbage, and Stancil. 214,110.
Burford, Charles E. Bread pan. 214,073, 5–6–69, Cl. D44—1.
Burgess Vibrocrafters, Inc.: *See*—
Anderson, Douglas W. 214,111.
Cabell, Douglas N., to Ronson Corp. Household appliance cabinet or similar article. 214,062, 5–6–69, Cl. D33—19.
Campbell, Laurie J., to Marx, Louis & Co., Inc. Toy shooting target or similar article. 214,065, 5–6–69, Cl. D34—5.
Carew, Arthur, Lilli Ann Corp. Fur trimmed coat. 214,010, 5–6–69, Cl. D2—198.
Carson Valley Meat Co.: *See*—
Mendes, William E. 214,067.

Castorani, Francesco P. Table cloth. 214,120, 5–6–69, Cl. D92—26.
Cheslak, Leonard W. Soft wrappings cutter. 214,121, 5–6–69, Cl. D95—3.
Chi, Yiu D., to Forda Mfg. Co. Ltd. Vacuum cleaner for an automobile. 214,084, 5–6–69, Cl. D49—13.
Child Guidance Toys Inc.: *See*—
Genin, Robert. 214,068.
Clarke, Norman A., to The Columbia Mfg. Co., Inc. Bicycle handlebar. 214,114, 5–6–69, Cl. D90—11.
Clayton, La Verne E., to Amerock Corp. Pull. 214,029, 5–6–69, Cl. D10—8.
Clayton, La Verne E., to Amerock Corp. Combined pull and escutcheon plate. 214,030, 5–6–69, Cl. D10—8.
Cline, Nathan R. Desk set of marking pens and ink well. 214,105, 5–6–69, Cl. D74—5.
Columbia Mfg. Co., Inc., The: *See*—
Clarke, Norman A. 214,114.
Continental Can Co., Inc.: *See*—
Newman, Fred C. 214,019.
Creative Environments Inc.: *See*—
Solo, Alan J. 214,061.
Daito, Hiroshi, to Blackwell Electronics Inc Co., Ltd. Portable retractable lamp. 214,082, 5–6–69, Cl. D48—20.
Dehn, Roy F., to McNeil Corp. Electric conductor bar and guard support. 214,091, 5–6–69, Cl. D54—1.
Dennison Mfg. Co.: *See*—
Merser, Francis G. 214,122.
Merser, Francis G. 214,123.
Dick, Harvey F., to White Motor Corp. Trim for a vehicle cab. 214,038, 5–6–69, Cl. D14—6.
Dick, Harvey F., to White Motor Corp. Trim for a vehicle cab. 214,039, 5–6–69, Cl. D14—6.
Downey Fertilizer Co.: *See*—
Beaumont, William E. 214,023.
Beaumont, William E. 214,024.
Electronic Music Corp.: *See*—
Ross, Lloyd D., Jr. 214,057.
Faultless Starch Co.: *See*—
Mason, John W. 214,048.
Fine, Arnold, and M. Goldberg. Arithmetic teaching device. 214,054, 5–6–69, Cl. D25—1.
Flugger, Ray T. Engine exhaust system. 214,037, 5–6–69, Cl. D14—6.
Forda Mfg. Co. Ltd.: *See*—
Chi, Yiu D. 214,084.
Fostoria Glass Co.: *See*—
Seibel, Ben. 214,071.
Fraze, Ermal C.: *See*—
Peters, Don B. 214,027.
Fremdling, William F., to Wefco Rubber Mfg. Corp. Two-piece squeegee. 214,085, 5–6–69, Cl. D49—23.
Futterer, Bodo, to The Gillette Co. Charging unit for electric shavers. 214,059, 5–6–69, Cl. D26—15.
GAF Corp.: *See*—
Steinbach, Thomas M., and Simonelli. 214,099.
Gatley, Derrick R., to Graviner (Colnbrook) Ltd. Dispenser for liquids or fluidised powders. 214,049, 5–6–69, Cl. D23—17.
Genin, Robert, to Child Guidance Toys Inc. Toy railroad hand car. 214,068, 5–6–69, Cl. D34—15.
Gillespie, Clyde E. Insulated carafe. 214,076, 5–6–69, Cl. D44—21.
Gillette Co., The: *See*—
Futterer, Bedo. 214,059.
Goldberg, Myron: *See*—
Fine, Arnold, and Goldberg. 214,054.
Graviner (Colnbrook) Ltd.: *See*—
Gatley, Derrick R. 214,049.
Greene, Gordon L. Holding fixture for engine heads. 214,093, 5–6–69, Cl. D54—13.
Greenlee, Hugh T., to Ashtabula Bow Socket Co. Cycle pedal tread block. 214,115, 5–6–69, Cl. D90—14.
Greenlee, Hugh T., to Ashtabula Bow Socket Co. Cycle pedal tread block. 214,116, 5–6–69, Cl. D90—14.
Greenlee, Hugh T., to Ashtabula Bow Socket Co. Cycle pedal tread block. 214,117, 5–6–69, Cl. D90—14.
Griffith, James L., to H. H. Robertson Co. Feature strip. 214,034, 5–6–69, Cl. D13—6.
Grossman, Ralph E. Dental handpiece. 214,053, 5–6–69, Cl. D24—1.
Grove, John L., to Grove Mfg. Co. Self-propelled truck crane. 214,035, 5–6–69, Cl. D14—3.
Grove Mfg. Co.: *See*—
Grove, John L. 214,035.
Hallahan, Daniel T., to Sanjo Utility Mfg. Co. Inc. Rolling support for garment hangers. 214,107, 5–6–69, Cl. D80—8.
Harbeck, Charles L., and R. N. Sellon, to Stolper Industries, Inc. Combined vehicle cab and roll bar. 214,040, 5–6–69, Cl. D14—27.
Hardy, George: *See*—
Ackerman, Martin S., and Hardy. 214,100.
Haskin, Donald F., and M. Becker. Air cleaner for engines or the like. 214,052, 5–6–69, Cl. D23—149.
Heldt, Michel P., to Vinco Corp. Spline lapping machine. 214,095, 5–6–69, Cl. D55—1.
Henebry, John P., and E. E. Stineback, to North American Aluminum Corp. Stadium bench. 214,042, 5–6–69, Cl. D15—11.
Hicks, Stewart. Hat. 214,015, 5–6–69, Cl. D2—248.
Hudson, Harry W., to Twentieth Century Products Corp. Toilet tank ballcock or the like. 214,050, 5–6–69, Cl. D23—40.
Hughes, Eric. X-ray apron and glove rack. 214,060, 5–6–69, Cl. D33—3.
Hussey, Robert R., to Ashtabula Bow Socket Co. Cycle pedal tread block. 214,118, 5–6–69, Cl. D90—14.
Intronics Inc.: *See*—
Becker, Brant W. 214,055.
Jacketing Specialty: *See*—
Bates, Wesley V. and B. L. 214,047.
Johnson, Horace W. Shirt. 214,011, 5–6–69, Cl. D2—208.
Joly, Cyril B. Portable ventilator for attachment to a bed. 214,017, 5–6–69, Cl. D5—2.
Jones, Paul R., to Bates Industries, Inc. Face shield. 214,013, 5–6–69, Cl. D2—233.
Jones, Paul R., to Bates Industries, Inc. Face shield. 214,014, 5–6–69, Cl. D2—233.
Joy Plastics, Inc.: *See*—
Kriegel, Louis. 214,077.
Karl, Thomas M. Traffic light. 214,104, 5–6–69, Cl. D72—1.
Kaslow, Robert G., and E. E. Kissinger; said Kissinger, assor. to Vesta Corp. Grill. 214,109, 5–6–69, Cl. D81—10.
Katzman, Lawrence, and E. Briggin, to Kaz Mfg. Co., Inc. Vaporizer bowl. 214,051, 5–6–69, Cl. D23—148.
Kaz Mfg. Co., Inc.: *See*—
Katzman, Lawrence, and Briggin. 214,051.
Kissinger, Earell E.: *See*—
Kaslow, Robert G., and Kissinger. 214,109.
Klein, Henry. Frame for an overstuffed sofa or the like. 214,043, 5–6–69, Cl. D15—11.
Kriegel, Louis, to Joy Plastics, Inc. Draining rack for dishes and other kitchen utensils. 214,077, 5–6–69, Cl. D44—29.
Labranche Industries, Inc.: *See*—
Portyrata, Raymond E. 214,064.
Langdon, Arthur J., to Edward Weck & Co., Inc. Intravenous needle hub. 214,112, 5–6–69, Cl. D83—12.
Lieberman, Efraim. Lather applicator for shaving cream. 214,016, 5–6–69, Cl. D4—19.
Lilli Ann Corp.: *See*—
Carew, Arthur. 214,010.
Lloyd's Electronics International: *See*—
Araki, Minoru. 214,081.
Logistics Industries Inc.: *See*—
Ringlen, Arthur G. 214,022.
Mann, William T. Fishing lure. 214,044, 5–6–69, Cl. D22—27.
Marx, Louis, & Co., Inc.: *See*—
Campbell, Laurie J. 214,065.
Mason, John W., to Faultless Starch Co. Spray wand. 214,048, 5–6–69, Cl. D23—15.
May-Fran Mfg. Co.: *See*—
Ziegler, Harry E. 214,094.
McNeil Corp.: *See*—
Dehn, Roy F. 214,091.
Mendes, William E. Carson Valley Meat Co. Golf club. 214,067, 5–6–69, Cl. D34—5.
Merser, Francis G., to Dennison Mfg. Co. Filament for attaching a tag to an article. 214,122, 5–6–69, Cl. D96—1.
Merser, Francis G., to Dennison Mfg. Co. Filament for attaching a tag to an article. 214,123, 5–6–69, Cl. D96—1.
Miller Co., The: *See*—
Schiffer, Henry C. 214,079.
Mori Denki Mfg. Co., Ltd.: *See*—
Mori, Shinjiro. 214,080.
Mori, Shinjiro, to Mori Denki Mfg. Co., Ltd. Reflector for an industrial safety light. 214,080, 5–6–69, Cl. D48—16.
Mulder, Kenneth W., to Safety Education, Inc. Cookie. 214,008, 5–6–69, Cl. D1—18.
Nagaoka, Kyoichi. Handle for garden tools or the like. 214,070, 5–6–69, Cl. D35—2.
National Distillers and Chemical Corp.: *See*—
Osborn, John R. 214,020.
Newman, Fred C., to Continental Can Co., Inc. Combined liquid dispensing container and cover therefor. 214,019, 5–6–69, Cl. D9—37.
North American Aluminum Corp.: *See*—
Henebry, John P., and Stineback. 214,042.
Osborn, John R., to National Distillers and Chemical Corp. Jug. 214,020, 5–6–69, Cl. D9—39.
Pellow, Donald L. Microfilm reader. 214,098, 5–6–69, Cl. D61—1.
Perfect Film & Chemical Corp.: *See*—
Ackerman, Martin S. 214,097.
Ackerman, Martin S., and Hardy. 214,100.
Peters, Don B., to E. C. Fraze. Pull tab for a removable tear portion. 214,027, 5–6–69, Cl. D9—256.
Portyrata, Raymond E., to Labranche Industries, Inc. Combined support bracket and spray head for a dispenser. 214,064, 5–6–69, Cl. D33—30.
Powell, Charles H. Spacing jig for cables to be encased in concrete or the like. 214,086, 5–6–69, Cl. D51—1.
Pregont, Jack E. Snack tray or similar article. 214,075, 5–6–69, Cl. D44—10.
Preston, Bruce A., to Amerock Corp. Cabinet with revolving shelves. 214,063, 5–6–69, Cl. D33—19.
Rae, Randolph S. Planing boat. 214,102, 5–6–69, Cl. D71—1.
Rakocy, William J., to Ronson Corp. Combined display and storage case for an electric shaver. 214,026, 5–6–69, Cl. D9—232.
Reese Products, Inc.: *See*—
Reese, Terrell J. 214,072.
Reese, Terrell J., to Reese Products, Inc. Jack. 214,072, 5–6–69, Cl. D41—1.
Reinarts, Robert B. Auxiliary cab for pickup truck. 214,036, 5–6–69, Cl. D14—3.
Ringlen, Arthur G., to Logistics Industries Inc. Display tray. 214,022, 5–6–69, Cl. D9—187.
Robertson, H. H., Co.: *See*—
Griffith, James L. 214,034.
Rodrigues, Raoul E., and C. W. Sundberg, to The Seeburg Corp. Phonograph cabinet. 214,096, 5–6–69, Cl. D56—4.
Ronson Corp.: *See*—
Cabell, Douglas N. 214,062.
Rakocy, William J. 214,026.
Rose, Richard A. Modular block. 214,031, 5–6–69, Cl. D13—1.
Ross, Lloyd D., Jr., to Electronic Music Corp. Portable plural channel electronic amplifier. 214,057, 5–6–69, Cl. D26—14.
Russo, Edward. Illuminable hat. 214,012, 5–6–69, Cl. D2—231.

Sachs, Charles M. Brassiere. 214,009, 5–6–69, Cl. D2—24.
Safety Education, Inc.: *See*—
Mulder, Kenneth W. 214,008.
Sanderson, Leon C., to Ampex Corp. Magnetic tape transport. 214,058, 5–6–69, Cl. D26—14.
Sanjo Utility Mfg. Co. Inc.: *See*—
Hallahan, Daniel T. 214,107.
Schiffer, Henry C., to The Miller Co. Lighting console. 214,079, 5–6–69, Cl. D48—4.
Seeburg Corp., The: *See*—
Rodrigues, Raoul E., and Sundberg. 214,096.
Seeley, Leonard: *See*—
Beich, Frank R., and Seeley. 214,090.
Seibel, Ben, to Fostoria Glass Co. Plate. 214,071, 5–6–69, Cl. D36—2.
Sellon, Raymond N.: *See*—
Harbeck, Charles L., and Sellon. 214,040.
Shoemaker, Don S. Combined seating and table unit. 214,041, 5–6–69, Cl. D15—1.
Simms, James B. Template. 214,089, 5–6–69, Cl. D52—6.
Simonelli, Robert M.: *See*—
Steinbach, Thomas M., and Simonelli. 214,099.
Simpkins, Terry J., to Slickcraft Boat Co. Boat. 214,101, 5–6–69, Cl. D71—1.
Slickcraft Boat Co.: *See*—
Simpkins, Terry J. 214,101.
Solo, Alan J., to Creative Environments Inc. Collapsible work bench. 214,061, 5–6–69, Cl. D33—14.
Spence, Wayman R. Ash tray hood. 214,113, 5–6–69, Cl. D85—2.
Spencer, Robert E. Snag preventive sinker for treble fish hooks. 214,046, 5–6–69, Cl. D22—30.
Stancil, Linwood W., Jr.: *See*—
Adams, Charles R., Burbage, and Stancil. 214,110.
Starr, Michael M., to Starrco Co., Inc. Wall panel. 214,033, 5–6–69, Cl. D13—1.
Starrco Co., Inc.: *See*—
Starr, Michael M. 214,033.
Steinbach, Thomas M., and R. M. Simonelli, to GAF Corp. Slide projector. 214,099, 5–6–69, Cl. D61—1.
Steiner, Fred S., to Bonny Products, Inc. Combined container opener and corkscrew. 214,078, 5–6–69, Cl. D44—29.
Stineback, Earl E.: *See*—
Henebry, John P., and Stineback. 214,042.
Stolper Industries, Inc.: *See*—
Harbeck, Charles L., and Sellon. 214,040.
Sulzberger, Rolf. Display cabinet for eye glass frames or the like. 214,108, 5–6–69, Cl. D80—11.
Sundberg, Carl W.: *See*—
Rodrigues, Raoul E., and Sundberg. 214,096.
Tackaberry, Raymond V. Hexagonal building unit. 214,032, 5–6–69, Cl. D13—1.
Thompson, Catherine E. Serving tray for beverages or the like. 214,074, 5–6–69, Cl. D44—10.
Traughber, John W. Ratchet wrench. 214,018, 5–6–69, Cl. D8—25.
Trepanier, Richard A. Welding torch. 214,056, 5–6–69, Cl. D26—1.
Troxel Mfg. Co.: *See*—
Worley, George W. 214,119.
Twentieth Century Products Corp.: *See*—
Hudson, Harry W. 214,050.
U.S. Philips Corp.: *See*—
Zijlstra, Rudolph B. 214,087.
Vaudaux, Georges. Display box. 214,025, 5–6–69, Cl. D9—230.
Vinco Corp.: *See*—
Heldt, Michel P. 214,095.
Weck, Edward, & Co., Inc.: *See*—
Langdon, Arthur J. 214,112.
Wefco Rubber Mfg. Corp.: *See*—
Fremdling, William F. 214,085.
Weiner, Michael M. Door closer. 214,028, 5–6–69, Cl. D10—7.
White Motor Corp.: *See*—
Dick, Harvey F. 214,038.
Dick, Harvey F. 214,039.
Williams, Robert M. Desk stand. 214,106, 5–6–69, Cl. D74—5.
Witt, Warren D. Mast holder for surfboard. 214,103, 5–6–69, Cl. D71—1.
Worley, George W., to Troxel Mfg. Co. Backrest for a bicycle seat. 214,119, 5–6–69, Cl. D90—16.
Ziegler, Harry E., to May-Fran Mfg. Co. Conveyor. 214,094, 5–6–69, Cl. D55—1.
Ziegler, Philip C. Fish lure. 214,045, 5–6–69, Cl. D22—27.
Zijlstra, Rudolph B., to U.S. Philips Corp. Dust bag filling indicator. 214,087, 5–6–69, Cl. D52—6.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 6TH DAY OF MAY, 1969

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

A B Akerlund & Rausing: *See—*
Nilsson, Erling Ingvar, 3,442,428.

Abbott Laboratories: *See—*
Lych, Don Murl, 3,442,893.

Abe, Ryoichi, to Hitachi Electronics Company, Ltd. Function generator. 3,443,082, 05-06-69, Cl. 235-197.

Abex Corporation: *See—*
Mori, Hideo, 3,443,072.

Abromavage, John C., and Reichardt, Harry J., to Arcoa, Incorporated. Rivet bucker assembly. 3,442,112, 05-06-69, Cl. 072-391.

ACF Industries, Incorporated: *See—*
Anderson, Clifford E., and Lowrey, William E., 3,442,286.

Achuff, Nancy E.: *See—*
Wood, Thomas F., and Achuff, Nancy E. 3,442,640.

Ackerman, Daniel W., and Holmes, Robert H., to Universal Instruments Corporation. Module insertion machine. 3,442,430, 05-06-69, Cl. 227-002.

Ackerman, Ernest B. Recovery of electroplate utilizing molten lead. 3,442,643, 05-06-69, Cl. 075-063.

Ackley, James W., to Varian Associates. High voltage D.C. converter cathode supply circuit having means for controlling the voltage to the cathode. 3,442,252, 05-06-69, Cl. 118-050.1

Adair, Frank M., and De Boo, Emil A., to Western Electric Company, Incorporated. Method and mechanism for severing the gate in injection-type molds. 3,443,001, 05-06-69, Cl. 264-161.

Adair, James Richard, to United Engineering and Foundry Company. Cooling device for workpieces, such as rod bundles. 3,442,029, 05-06-69, Cl. 034-105.

Adams, Karl. Valve. 3,442,488, 05-06-69, Cl. 251-305.

Adams, William L., to Industrial Nucleonics Corporation. Dielectric materials gauging system with input signal frequency automatically variable in response to detected signal phase shift variation. 3,443,219, 05-06-69, Cl. 324-061.

Addinall, Ramon Leonard, and Milbourne, Robert J., to Steel Company of Canada, Limited, The. Regeneration of waste pickle liquors. 3,442,608, 05-06-69, Cl. 023-154.

Addleburg, John W.: *See—*
Teter, Robert M., Jr., Addleburg, John W., Rouse, Benjamin P., Jr., and Snead, Charles D. 3,442,744.

Addy, John: *See—*
Lenoble, Jean P., Addy, John, and Piggin, Bruce P. 3,442,683.

Adelman, Robert L., to Du Pont de Nemours, E. I., and Company. Asphalt-ethylene/vinycl acetate copolymer compositions. 3,442,841, 05-06-69, Cl. 260-028.5

Adolphi, Heinrich: *See—*
Dickhaeuser, Heiner, Scheuerer, Gunter, Adolphi, Heinrich, and Steinbrunn, Gustav 3,442,984.

Advance Stamping Company: *See—*
Nolan, Richard D., 3,442,078.

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Degginger, Edward R., and Booth, Robert E., to Allied Chemical Corporation. Sucrose-glyceral-alkyleneoxide polyol compositions and process for preparing same. 3,442,888, 05-06-69, Cl. 260-209.

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de Lucia, Victor E., to Torr Laboratories, Inc. Vacuum relay. 3,443,046, 05-06-69, Cl. 200-144.

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De Puy, Charles H., and Rider, Harold D., to Marathon Oil Company. High selectivity process for the chlorination of methylbenzenes. 3,442,960, 05-06-69, Cl. 260-651.

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Derr, Elmer B., to International Harvester Company. Offcenter A-frame building structure. 3,442,057, 05-06-69, Cl. 052-090.

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Deshong, Elzie E., and Palson, Richard C. J., to International Packaging Corporation. Display package. 3,442,371, 05-06-69, Cl. 206-045.23

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Pavlik, Thomas J., to Dick, A. B., Company. Modulated scanning system. 3,443,028, 05-06-69, Cl. 178-007.2

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Puschner, Herbert August. Apparatus for heating material by means of microwave device. 3,443,051, 05-06-69, Cl. 219-010.55

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Smith, Raymond John Dunsford, to American Cyanamid Company. Photographic dodging method. 3,442,648, 05-06-69, Cl. 096-044.

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Smith, Wesley A., to Tilt-A-Door Corporation. Bi-fold door with standard components. 3,442,318, 05-06-69, Cl. 160-193.

Smitzer, Louis A., and Porazinski, Robert F., to Bell & Howell Company. Low cost microfiche reader. 3,442,581, 05-06-69, Cl. 353-027.

Smitzer, Louis A., Tyler, Len A., Hines, Walter, and Bixby, William E., to Bell & Howell Company. Continuous rotary electrostatographic apparatus. 3,442,585, 05-06-69, Cl. 355-003.

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Sola, Jorge Marti. Cone winding machine for spinning. 3,442,461, 05-06-69, Cl. 242-037.

Sollay, Alva A. Method for casting concrete foundation. 3,442,089, 05-06-69, Cl. 061-053.64

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Soper, Quentin F., to Lilly, Eli, and Company. Nematocidal methods employing 2-perfluoroalkyl- benzimidazoles. 3,443,015, 05-06-69, Cl. 424-273.

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Spangler, Carl D., Jr., and Price, Walter J., to Nofsinger, C. W., Company, The. Moving bed adsorption apparatus. 3,442,066, 05-06-69, Cl. 055-390.

Spears, Jesse W., to International Business Machines Corporation. Ribbon tension control. 3,442,366, 05-06-69, Cl. 197-151.

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Sundstrom, Karl Erik, to Beckman Instruments, Inc. Radiant energy analyzer for directly measuring the polarization ratio of fluorescent radiation. 3,443,090, 05-06-69, Cl. 250-043.5
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CLASSIFICATION OF PATENTS

ISSUED MAY 6, 1969

NOTE.—First number, class; second number, subclass; third number, patent number

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5—246	3,441,961	178	3,442,020	456	3,442,103	184	3,442,183	114— .5	3,442,238	594	3,442,289
8— 10.1	3,442,599	180	3,442,021	71— 12	3,442,637	187	3,442,184		3,442,239	596.2	3,442,290
54	3,442,600	190	3,442,022	97	3,442,638	93— 61	3,442,185	16	3,442,240	625.41	3,442,291
62	3,442,601	206	3,442,023	121	3,442,639	93	3,442,186	43.5	3,442,241	138— 30	3,442,292
9— 9	3,441,962	211	3,442,024	124	3,442,640	94— 1.5	3,442,187	124	3,442,243		3,442,293
314	3,441,963	217	3,442,025	72— 9	3,442,104	39	3,442,188	148	3,442,242	90	3,442,294
338	3,441,964	34— 1	3,442,026	56	3,442,105	46	3,442,189	163	3,442,244	94	3,442,295
10— 89	3,441,965	54	3,442,027	58	3,442,106	95— 10	3,442,190	230	3,442,245	120	3,442,296
12— 87	3,441,966	57	3,442,028	111	3,442,107		3,442,191	115— 70	3,442,246	122	3,442,297
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15— 97	3,441,968	35— 35	3,442,030	240	3,442,109	44	3,442,193	70	3,442,248	170.3	3,442,299
98	3,441,969	36— 2.5	3,442,031	327	3,442,110	64	3,442,194	114.5	3,442,249	341	3,442,300
114	3,441,970		3,442,032	389	3,442,111		3,442,198	117— 36.4	3,442,680	370	3,442,301
210	3,441,971		3,442,033	391	3,442,112	89	3,442,195		3,442,681	140— 71.5	3,442,302
258	3,441,972	7.1	3,442,034	421	3,442,113		3,442,196	.8	3,442,682	141— 18	3,442,303
262	3,441,973	37— 98	3,442,035	465	3,442,114	96— 1.4	3,442,645	47	3,442,683	134	3,442,304
16— 33	3,441,974	38—143	3,442,036	73— 12	3,442,115	27	3,442,646	64	3,442,684	141	3,442,305
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18— 5	3,441,982	68	3,442,631		3,442,123	109	3,442,654	120	3,442,692	222	3,442,313
19	3,441,983	46— 11	3,442,043	194	3,442,124	111	3,442,655	123	3,442,693	148— 1.6	3,442,719
19— .23	3,441,984	16	3,442,044	228	3,442,125	98— 30	3,442,197	126	3,442,694	6.3	3,442,720
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21— 53	3,442,602	161	3,442,046	327	3,442,127	50.5	3,442,657	141	3,442,696	178	3,442,722
23— 2	3,442,603	202	3,442,047	345	3,442,128	83	3,442,658	145	3,442,697	186	3,442,723
108	3,442,604	48—215	3,442,632	363	3,442,129	91	3,442,659	155	3,442,698	187	3,442,724
110	3,442,605	49—141	3,442,048	.9	3,442,130	107	3,442,660	201	3,442,699	189	3,442,725
142	3,442,606	164	3,442,049	379	3,442,131	160	3,442,661		3,442,700	149— 7	3,442,726
144	3,442,607	349	3,442,050		3,442,132	171	3,442,662	212	3,442,701	46	3,442,727
154	3,442,608	414	3,442,051	407	3,442,133	176	3,442,663	217	3,442,702	56	3,442,728
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	3,442,611	80	3,442,054	422	3,442,136	421	3,442,201	9	3,442,251	152—354	3,442,315
190	3,442,612	52— 62	3,442,055		3,442,137		3,442,202	50.1	3,442,252	427	3,442,316
199	3,442,613	79	3,442,056	423	3,442,138	100— 26	3,442,203	603	3,442,253	156— 71	3,442,730
209.1	3,442,615	90	3,442,057	432	3,442,139	35	3,442,204	637	3,442,254		3,442,731
	3,442,616	221	3,442,058	504	3,442,140	101— 93	3,442,206	119—103	3,442,255	73	3,442,732
	3,442,617	399	3,442,059	521	3,442,141	114	3,442,207	122—406	3,442,256		3,442,733
212	3,442,618	673	3,442,060	74— 5.5	3,442,142	318	3,442,208	123— 17	3,442,257		3,442,734
214	3,442,619	53— 22	3,442,061	.6	3,442,143	327	3,442,209	41.31	3,442,258		3,442,735
	3,442,620	374	3,442,062		3,442,144	407	3,442,210	46	3,442,259	85	3,442,736
216	3,442,614		3,442,063	54	3,442,145	416	3,442,211	198	3,442,260	158	3,442,737
223	3,442,621	390	3,442,064	84	3,442,146	102— 19.2	3,442,212	126—215	3,442,261	161	3,442,738
.5	3,442,622	55—191	3,442,065	242.11	3,442,147	38	3,442,213	271.2	3,442,262	180	3,442,739
231	3,442,623	390	3,442,066	470	3,442,148	42	3,442,214	127— 50	3,442,704	181	3,442,740
272	3,442,624	482	3,442,067	481	3,442,149	90	3,442,215	128— 2.05	3,442,263	229	3,442,741
284	3,442,625	56— 20	3,442,068	501	3,442,150	92.2	3,442,216	.06	3,442,264	244	3,442,742
288	3,442,626		3,442,069		3,442,151	.7	3,442,205	90	3,442,265	245	3,442,743
289	3,442,627	21	3,442,070	645	3,442,152	103— 1	3,442,217	130	3,442,266	332	3,442,745
300	3,442,628	327	3,442,071	687	3,442,153	10	3,442,218	133	3,442,267	396	3,442,746
357	3,442,629	57— 53	3,442,072	710.5	3,442,154	26	3,442,219	280	3,442,268	417	3,442,747
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271	3,441,987	58—109	3,442,074	793	3,442,156	117	3,442,221	540	3,442,270	160—193	3,442,318
28— 1	3,441,988	59— 29	3,442,075		3,442,157	104— 3	3,442,222	132— 33	3,442,271	330	3,442,319
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	3,441,992	24	3,442,079	84.1	3,442,642	106— 2	3,442,664	24	3,442,707	72	3,442,751
62	3,441,993	54.5	3,442,080	124	3,442,644	38.35	3,442,665	32	3,442,708	186	3,442,752
29— 91	3,441,994	212	3,442,081	76—101	3,442,159	39	3,442,666	100	3,442,273	269	3,442,744
155	3,441,995	224	3,442,082	77— 22	3,442,160		3,442,667	108	3,442,274	162— 76	3,442,753
157	3,441,996	229	3,442,083	66	3,442,161		3,442,668	135— 5	3,442,275	164	3,442,754
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173	3,441,999	269	3,442,086	82— 2	3,442,164	84	3,442,671	29	3,442,710	387	3,442,757
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450	3,442,002	53.64	3,442,089	83—308	3,442,167	197	3,442,674		3,442,713	274	3,442,322
454	3,442,005	62— 23	3,442,090	354	3,442,168	227	3,442,675		3,442,714	332	3,442,323
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596	3,442,013	168	3,442,635	15	3,442,175	108— 24	3,442,230		3,442,281	266	3,442,332
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53 : 3,443,123	54 : 3,442,829	55 : 3,442,178	55 : 3,442,306	55 : 3,442,544	55 : 3,443,119
3,443,204	3,442,889	3,442,193	3,442,458	3,442,545	3,443,120
54 : 3,442,766	3,442,980	3,442,247	3,442,509	3,442,798	3,443,251
3,442,811	3,443,007	3,442,272	3,442,526	3,443,115	56 : 3,443,066

Design Patents

1 : 214,044	6 : 214,103	17 : 214,089	27 : 214,093	36 : 214,068	39 : 214,116
6 : 214,010	214,121	214,090	214,104	214,071	214,117
214,013	8 : 214,050	214,092	29 : 214,033	214,077	214,118
214,014	214,109	214,096	32 : 214,067	214,078	40 : 214,073
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214,028	214,112	18 : 214,018	214,026	214,107	214,083
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214,047	12 : 214,008	20 : 214,105	214,020	39 : 214,011	44 : 214,088
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214,058	214,031	214,108	214,043	214,038	47 : 214,119
214,060	17 : 214,019	214,114	214,048	214,039	48 : 214,084
214,069	214,029	214,122	214,051	214,057	49 : 214,113
214,074	214,030	214,123	214,053	214,091	51 : 214,046
214,085	214,042	26 : 214,045	214,054	214,094	54 : 214,076
214,086	214,056	214,062	214,061	214,101	55 : 214,040
214,098	214,063	214,095	214,066	214,115	214,075
214,102					

Plant Patents

6 : 2,883	27 : 2,884	36 : 2,885	41 : 2,882		

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

May 6, 1969 Volume 862 Number 1

TRADEMARKS

NOTICES

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 308,194 (GOLDEN GRAIN), Golden Grain Macaroni Co., Spaghetti, macaroni, and egg noodles; **Reg. No. 576,847**, same, Alimentary paste products—namely, spaghetti, macaroni, noodles and spaghetti dinners; dried fruits, rice, tapioca, dried beans, dried peas, popcorn (unpopped) and nuts (unshelled); **Reg. No. 600,169**, same, Alimentary paste products—namely, spaghetti, macaroni, and egg noodles; partly prepared alimentary paste dinners consisting of an alimentary paste with a sauce, cheese, chili or meat balls and sauce; sauces; dehydrated soups; dried fruits; rice; tapioca; dried beans; dried peas; popcorn (unpopped) and nuts (unshelled), filed Feb. 7, 1969, D.C., S.D.N.Y., Doc. 69–C–530, *Golden Grain Macaroni Co. v. The Food Family Inc.*

Reg. No. 468,554 (EXECUTONE), Executone, Inc., Amplified voice type of inter-communicating equipment comprising interoffice telephone communication apparatus, electrical communication amplifiers, public address systems, telephone apparatus, paging systems, microphones, and electric loud speakers; **Reg. No. 427,810** (EXECUTONE AND DESIGN), same; **Reg. No. 678,855** (EXECUTONE), same, Socket wrenches, relay adjusting tools, and relay burnishing tools; **Reg. No. 699,655**, same, Clamps for holding hospital call signals and brackets for mounting antenna equipment; **Reg. No. 662,812**, same, Amplified voice type of inter-communication equipment comprising inter-office telephone communication apparatus, electrical communication amplifiers, public address systems, telephone apparatus, paging systems, microphones and electric loudspeakers, AM and FM tuners, antennas, electrical wire, and cable; **Reg. No. 662,896**, same, Instruction manuals for the installation and repair of electronic and sound equipment and trade newsletter concerning the communication field; **Reg. No. 691,892**, same, Phonograph record players and tape players, filed Feb. 7, 1969, D.C.N.J. (Newark), Doc. C–144–69, *Executone, Inc. v. Vikon, Inc.*

CONDITION OF TRADEMARK APPLICATIONS AS OF MARCH 31, 1969

Total number of applications awaiting action [excluding renewals and Sec. 12(c)] 14,617
Date of oldest new application ..... February 20, 1968
Date of oldest amended application (filing date) ..... June 4, 1963

C. M. WENDT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application: New	Oldest Application: Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	6-21-65	6-4 -68
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	5-12-65	5-24-66
(III) P. S. BALL, Classes 19, 21, 23, 26, 31, 34, 35, 36	9-3 -68	1-21-66
(IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	2-20-68	6-1 -65
Renewals (All Classes)	1-21-69	
Sec. 12(c) Publications (All Classes)	2-5 -69	

For the Quarter Jan. 1, 1969 through Mar. 31, 1969

Applications Filed	8,024
Registrations Issued	4,362
Renewals Issued	1,016
Cancellations Under Section 8	1,358

Applications filed during the month of March 1969—2,850

Registrations Issued	366—No. 868,840 to No. 869,205
Renewals Issued	130

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $90.50 per annum, foreign mailing $5.75 additional; single copies, 40 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C. 20231.

Reg. No. 427,816. (See Reg. No. 402,254.)

Reg. No. 518,769 (MADCAPS), Steven Candy Kitchens, Inc., Candies; **Reg. No. 544,340** (SNOW CAPS), Same; **Reg. No. 557,387** (MRS. STEVENS), same, filed Apr. 26, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c769, *Loft Candy Corp. et al.* v. *Martha Washington Kitchens, Inc.* By agreement, suit is dismissed with prejudice, Jan. 13, 1969.

Reg. No. 544,340. (See Reg. No. 518,769.)

Reg. No. 557,387. (See Reg. No. 518,769.)

Reg. No. 565,000 (LIFE), Time, Incorporated, Weekly magazine, filed Feb. 12, 1969, D.C., C.D. Calif. (Los Angeles), Doc. 69–282–FW, *Time Incorporated* v. *The Hollywood Reporter Corporation.*

Reg. No. 576,847. (See Reg. No. 308,124.)

Reg. No. 579,145 (MISS NINETEEN AND DESIGN), Bakers Associates Incorporated, Bread and bread mix, filed Oct. 26, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c1862, *Bakers Associates, Inc.* v. *Kellogg Company.* Stipulated judgment, complaint dismissed, Feb. 17, 1969.

Reg. No. 592,518 (SUTTON), Sutton Cosmetics, Inc., Lipsticks, eyebrow pencils, face powder, rouge, deodorant in liquid, powder, and stick form, perfume, skin creams, filed Feb. 7, 1967, D.C.N.J. (Newark), Doc. 139–67, *White Laboratories, Inc.* v. *Day-Baldwin, Inc.* Order of dismissal, Jan. 9, 1969.

Reg. No. 602,965 (SAFE FLIGHT), Safe Flight Instrument Corporation, Airplane instruments—namely, lift detectors, control shakers which produce a buffet signal as a pre-stall warning, stall warning devices, lift control indicators, and instrument panel vibrators for removing frictional lag in aircraft instruments; **Reg. No. 721,937,** same, Aircraft instruments and components thereof, including lift detector, lift transducer, lift computer, lift computer adjustment unit, speed control indicator/lift computer, lift coupler, lift signal comparator, lift signal analyzer, lift system test indicator, lift computer adjustment unit analyzer, lift transducer test gauge, lift transducer test weight, signal summing unit, signal summing and relay unit, signal summing and relay unit adjustment head, adapter unit, signal comparator, flap potentiometer, flap position potentiometer, flap transmitter, flap position transmitter, flap condition transmitter, flap condition potentiometer, instrument vibrator, instrument panel vibrator, control vibrator, control shaker, coaxial control shaker, rudder pedal shaker, control shaker striker assembly, instrument panel adapter, pre-stall warning unit, gear pre-stall warning unit, automatic power controller, servo amplifier, ground plane accelerometer, thrust transducer, anti-icing heater, lift signal calibrator, indicators, gyroscope, magnetic amplifier, transformer, reactor, choke, inductor, resistor, potentiometer, solid state diode, transistor, rectifiers, capacitor, relays (power, sensitive, polar, nonpolar, and time delay), switch, chopper, anti-icing electric heater, electric lights, electric motor, servo motor, counter, servo amplifier, servo disconnect, vibration isolator, connector, absolute pressure transducer, differential pressure transducer, light filter, insulator, socket, cable, wire, chassis, terminal board, filed Jan. 30, 1969, D.C., C.D. Calif. (Los Angeles), Doc. 69–194–R, *Safe Flight Instrument Corp.* v. *Safe Flight, Inc.*

Reg. No. 628,480 (JUMBO JACKPOT), Edward C. Sargent, doing business as Eddie Sargent Enterprises, Advertising services—namely, promoting the sale of goods and services of others through the medium of contests in which cash prizes are awarded to winning contestants, filed July 18, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1340, *Edward C. Sargent* v. *Union Oil Company of California and The Reuben H. Donnelley Corporation.* By agreement, dismissed with prejudice, Feb. 17, 1969.

Reg. No. 638,121 (MIRACLE-EAR), The Dahlberg Company, Hearing aids; **Reg. No. 800,973** (DAHLBERG), Dahlberg Electronics, Inc., Electronic hearing aids, filed June 10, 1968, D.C., S.D. Fla. (Miami), Doc. 68–676–C–EC, *Dahlberg Electronics, Inc.* v. *John J. Priestes and Thomas Priestes, doing business as Southern Florida Hearing Service and Magnatone Hearing Aid Mfg. Co.* Consent decree, defendants permanently restrained, Feb. 5, 1969.

Reg. No. 642,237 (PENTRITOL), The Evron Company, Inc., Medical preparation for the treatment of angina pectoris, filed June 19, 1968, D.C., E.D. Mich. (Detroit), Doc. 31886, *Armour Pharmaceutical Company* v. *North American Pharmacal, Inc.* Stipulation and order of final judgment for permanent injunction, Feb. 7, 1969.

Reg. No. 678,855. (See Reg. No. 402,254.)

Reg. No. 680,109. (See Reg. No. 308,124.)

Reg. No. 680,655. (See Reg. No. 402,254.)

Reg. No. 682,812. (See Reg. No. 402,254.)

Reg. No. 683,296. (See Reg. No. 402,254.)

Reg. No. 691,692. (See Reg. No. 402,254.)

Reg. No. 721,937. (See Reg. No. 602,965.)

Reg. No. 772,288 (THRIFTY RENT-A-CAR SYSTEM AND DESIGN), Stemmons, Inc., Automobile rental; **Reg. No. 816,350** (THRIFTY), same; **Reg. No. 840,196** (MISS THRIFTY), same, filed Aug. 28, 1967, D.C., S.D. Calif. (Los Angeles), Doc. 67–863–C–TC and 67–864–C–TC, *Stemmons, Inc.* v. *Thrifty Rent-A-Car, Inc. and Lewis Adler, doing business as Thrifty Rent-A-Car, Inc.*; and *Thrifty Rent-A-Car, Inc.* v. *William Hudson.* Judgment in favor of Stemmons, Inc. in the first above-mentioned case. In favor of William Hudson, defendant in the second above-mentioned case and against Thrifty Rent-A-Car, Inc., defendant in first above-mentioned case and plaintiff in the second above-mentioned case for infringement. Service marks declared property of Stemmons, Inc.; Thrifty Rent-A-Car, Inc., defendant in the first above-mentioned case enjoined, Jan. 3, 1969.

Reg. No. 804,530 ("AUTOMATIC" SPRINKLER AND DESIGN), "Automatic" Sprinkler Corporation of America, Automatic sprinkler systems and parts thereof for fire protection, filed Feb. 7, 1969, D.C. Colo. (Denver), Doc. C–1281, *"Automatic" Sprinkler Corporation of America* v. *Automatic Fire Control Corp. and Fire-Trols, Inc. et al.*

Reg. No. 809,978. (See Reg. No. 638,121.)

Reg. No. 816,350. (See Reg. No. 774,288.)

Reg. No. 840,196. (See Reg. No. 774,288.)

Reg. No. 843,018 (TOUR TM MASTER), General Fire and Casualty Company, Underwriting travel insurance, filed Feb. 13, 1969, D.C., S.D.N.Y., Doc. 69–541, *General Fire and Casualty Co. et ano.* v. *Tourmasters, Inc.*

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 176,847. Automatic Radio Mfg. Co., Inc., Boston, Mass. Filed Sept. 5, 1963.

AUTOMATIC RADIO

Applicant disclaims the word "Radio" apart from the mark as shown.

Class 21—Electrical Apparatus, Machines, and Supplies

For Portable Radios, Automobile Radios, Truck Radios, Boat Radios, Ignition Systems, and Antennas (Int. Cl. 9).
First use 1920.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Air Conditioners (Int. Cl. 11).
First use 1961.

SN 265,942. The Fed-Mart Corporation, San Diego, Calif. Filed Mar. 6, 1967.

FM

Class 4—Abrasives and Polishing Materials

For Floor Wax (Int. Cl. 8).
First use Dec. 22, 1964.

Class 6—Chemicals and Chemical Compositions

For Lighter Fluid, Ammonia, Bleach, Starch, Fabric Softener, Anti-Freeze, and Summer Coolant (Int. Cls. 1, 3, and 4).
First use in 1959.

Class 10—Fertilizers

For Liquid Fertilizer (Int. Cl. 1).
First use in March 1966.

Class 14—Metals and Metal Castings and Forgings

For Aluminum Foil (Int. Cl. 6).
First use in January 1966.

Class 15—Oils and Greases

For Outboard Motor Oil, Heavy Duty Motor Oil, and Automatic Transmission Fluid (Int. Cl. 4).
First use in January 1960.

Class 16—Protective and Decorative Coatings

For Spray Paint (Int. Cl. 2).
First use in June 1960.

Class 18—Medicines and Pharmaceutical Preparations

For Vitamins, Antiseptic Mouthwash, Gelatin Capsules for Medical Use, and Aspirin (Int. Cl. 5).
First use in January 1959.

Class 19—Vehicles

For Shock Absorbers and Brake Shoes (Int. Cl. 12).
First use in June 1965.

Class 21—Electrical Apparatus, Machines, and Supplies

For Storage Batteries, Spark Plugs, and Automotive Tune-Up Kits (Int. Cl. 9).
First use in May 1965.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Razor Blades (Int. Cl. 8).
First use in 1961.

Class 26—Measuring and Scientific Appliances

For Binoculars (Int. Cl. 9).
First use in 1968.

Class 29—Brooms, Brushes, and Dusters

For Toothbrushes and Paint Roller Covers (Int. Cls. 16 and 21).
First use in January 1965.

Class 31—Filters and Refrigerators

For Oil Filters and Air Filters (Int. Cl. 11).
First use in August 1961.

Class 32—Furniture and Upholstery

For Mattresses (Int. Cl. 20).
First use in 1961.

Class 36—Musical Instruments and Supplies

For Magnetic Recording Tapes (Int. Cl. 9).
First use May 2, 1966.

Class 37—Paper and Stationery

For Bathroom Tissue, Paper Towels, Facial Tissues, and Loose Leaf Filler Paper (Int. Cl. 16).
First use in April 1964.

Class 39—Clothing

For Support Socks and Brassieres (Int. Cl. 25).
First use in November 1966.

Class 45—Soft Drinks and Carbonated Waters

For Grape Drink Containing Water (Int. Cl. 32).
First use in July 1965.

Class 46—Foods and Ingredients of Foods

For Biscuit and Baking Mix, Bologna, Chedder Cheese, Salami, Vegetable Shortening, Enriched Bread, Pancake Mix, Vinegar, Mayonnaise, Fresh Eggs, Coffee, Salad Dressing, Buttermilk, Apple Sauce, Potato Chips, Evaporated Milk, Preserves, Vegetable Salad Oil, Peanut Butter, Ice Cream, Jelly, and All Purpose Flour (Int. Cls. 29 and 30).
First use in March 1959.

Class 51—Cosmetics and Toilet Preparations

For Hand and Body Lotion, Toothpaste and After-Shave Lotion (Int. Cl. 3).
First use in 1958.

Class 52—Detergents and Soaps

For Household and Laundry Detergents, Facial Soap, Household Cleanser With Foamy Action Bleach, and All Purpose Cleaner With Ammonia (Int. Cl. 3).
First use in November 1959.

SN 275,007. Dixie Wax Paper Company, Dallas, Tex. Filed June 29, 1967.



Class 2—Receptacles

For Form and Fill Type Fabricated Bags Made of Waxed Paper and Laminates of Combinations of Cellophane, Polypropylene, Glassine, Paper, Foil, and Plastic Film (Int. Cl. 16).
First use May 4, 1967.

Class 37—Paper and Stationery

For Continuous Webs of Waxed Paper, and Laminates of Combinations of Cellophane, Polypropylene, Glassine, Paper, Foil, and Plastic Film Used for Making Form and Fill Type Packages (Int. Cl. 16).
First use Apr. 24, 1967.

SN 281,255. Suddeutsche Baumwolle-Industrie A.G., Kuchen, Wurttemberg, Germany. Filed Sept. 27, 1967.



Owner of German Reg. No. 759,509, dated Mar. 19, 1962.

Class 39—Clothing

For Women's and Children's Suits, Coats, Dresses; Blouses; Men's and Boys' Shirts; Pajamas (Int. Cl. 25).

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Tablecloths, Napkins, Bed Linens, Knitted Jersey Fabrics and Woven Yard Goods for Making Into Slacks, Coats, Suits, Blouses, Table and Bed Linens, and the Like (Int. Cl. 24).

SN 288,736. Red Wing Exterminating Co., Inc., d.b.a. Red Wing Chemical Co., Chattanooga, Tenn. Filed Jan. 15, 1968.

RED WING

Class 6—Chemicals and Chemical Compositions

For Insecticides and Rodenticides (Int. Cl. 5).

Class 103—Construction and Repair

For Pest and Termite Control Services (Int. Cl. 37).
First use Aug. 15, 1953.

SN 288,737. Red Wing Exterinating Co., Inc., d.b.a. Red Wing Chemical Co., Chattanooga, Tenn. Filed Jan. 15, 1968.



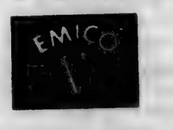
Class 6—Chemicals and Chemical Compositions

For Insecticides and Rodenticides (Int. Cl. 5).

Class 103—Construction and Repair

For Pest and Termite Control Services (Int. Cl. 37).
First use Aug. 15, 1953.

SN 288,945. Electro-Mechanical Instrument Company, Inc., Perkasie, Pa. Filed Jan. 16, 1968.



Owner of Reg. No. 438,806.

Class 21—Electrical Apparatus, Machines, and Supplies

For Special Purpose Electric Relays, Relay Devices for Industrial Instrument Control, Ammeter Shunts, and Current Transformers (Int. Cl. 9).

Class 26—Measuring and Scientific Appliances

For Ammeters, Voltmeters, Milliammeters, Microammeters, Millivolt Meters, VU Meters, Circuit Tuning Meters, Shadow Tuning Meters, Miniature Battery Charge Indicators, Tachometer Meters, Proximity Induction Ammeters, Multi-Current Battery Test Meters, Line Voltage Testers, DB Meters, Null Indicating Meters, and Electric Meter Type Industrial Instrument Indicator Devices, Including, Polarity Indicators, On-Off Indicators, and Cell Test Indicators (Int. Cl. 9).

First use May 1961.

SN 294,342. Chempar Chemical Co., Inc., New York, N.Y. Filed Mar. 28, 1968.



Class 1—Raw or Partly Prepared Materials

For Synthetic Resins (Int. Cl. 1).
First use April 1966.

Class 6—Chemicals and Chemical Compositions

For Agricultural Chemicals—Namely, Fungicides, Insecticides, Herbicides, Miticides, Rodenticides, Defoliants, and Fumigants; Industrial Chemicals—Namely, Activated Carbon, Alkali Flakes, Aluminum Sulfate, Ammonium Chloride, Anhydrous Ammonia, Anti-Oxidants, Aqua Ammonia, Bleaching Earth, Calcium Carbonate, Calcium Carbide, Calcium Chloride, Calcium Hypochlorite, Ethanol, Ethylene Dichloride, Ethylene Glycol, Fatty Acids, Formaldehyde, Glycerine, Hydrochloric Acid, Muriatic Acid, Hydrogen Peroxide, Manganous Oxide, Lead Naphthenate, Phthalic Anhydride, Cobalt Napthenate, Polyethylene, Polyvinyl Chloride, Potassium Hydroxide, Potassium Muriate, Sodium Benzoate, Sodium Carbonate, Sodium Bicarbonate, Sodium Carboxymethylcellulose, Sodium Hydroxide, Sodium Perborate, Sodium Sulfhydrate, Sodium Sulfide, Sodium Tripolyphosphate, Styrene, Sulfuric Acid, Surfactants, Titanium Dioxide, Ultra Violet Absorbers, Urea, Flotation Agents, Copper Sulfate, Citric Acid, Sodium Hydrosulfide, Caustic Soda Flakes, Soda Ash, Potassium Carbonate, Sodium Hexametaphosphate, Sodium Bichromate, Fluorinated Hydrocarbons Used as Refrigerants, Sodium Bisulfite, Stearic Acid, Ammonium Sulfate, Industrial Disinfectants, and Nitrous Oxide (Int. Cls. 1 and 5).
First use Jan. 28, 1964.

Class 10—Fertilizers

For Chemical Fertilizers (Int. Cl. 1).
First use Dec. 2, 1966.

Class 52—Detergents and Soaps

For Beerstone Remover, Descalers, Grease Solvents, and Industrial Cleaners (Int. Cl. 1).
First use July 1964.

SN 297,495. Wilson Manufacturing Company, Sunbury, Pa. Filed May 7, 1968.

WIL-HOLD

Owner of Reg. Nos. 541,245, 821,797, and others.

Class 2—Receptacles

For Plastic Boxes and Plastic Sewing Chests (Int. Cls. 20 and 26).
First use at least as early as September 1961.

Class 40—Fancy Goods, Furnishings, and Notions

For Bobby Pins, Hair Rollers, Hair Clips, Nylon Hair Picks, Barrettes, and Hair Bands (Int. Cl. 26).
First use at least as early as May 1949.

SN 298,170. Town & Country Distributors, Inc., Camp Hill, Pa. Filed May 15, 1968.

Townco

Owner of Reg. No. 842,900.

Class 16—Protective and Decorative Coatings

For Interior and Exterior Paints (Int. Cl. 2).
First use June 29, 1966.

Class 39—Clothing

For Men's, Women's, and Children's Hosiery, Ladies' and Misses' Shirts, Pants, Panties, Slips, and Blouses; Men's and Boys' Shirts, Hosiery, and Underwear (Int. Cl. 25).
First use Sept. 10, 1965.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Linens and Coarse Cotton Wash Goods, and Mattress Pads (Int. Cl. 24).
First use Nov. 1, 1967.

Class 44—Dental, Medical, and Surgical Appliances

For Sanitary Napkins (Int. Cl. 5).
First use Sept. 14, 1967.

SN 301,481. Personality Beauty Products Limited, Ormskirk, England. Filed June 27, 1968.

PERSONALITY

Owner of U.S. Reg. No. 422,542.

Class 51—Cosmetics and Toilet Preparations

For Toilet Skin Creams, Moisturizing Creams, and Foundation Cream (Int. Cl. 3).

Class 52—Detergents and Soaps

For Toilet and Bath Soaps, and Perfumed Soap Flakes (Int. Cl. 3).

First use in or about September 1937; in commerce in or about September 1937.

SN 301,804. Bowmar Records, Inc., Glendale, Calif. Filed July 2, 1968.

BOWMAR

Class 36—Musical Instruments and Supplies

For Phonograph Records and Multi-media Teaching Sets or Kits, Each Kit Consisting of Phonograph Records and Filmstrips (Int. Cl. 9).
First use about October 1951.

Class 38—Prints and Publications

For Filmstrips, Prints of Composers, Prints of Musical Instruments, and Books Such as for Study or Teaching Purposes (Int. Cl. 16).
First use about April 1956.

SN 307,371. J. C. Penney Company, Inc., New York, N.Y. Filed Sept. 16, 1968.

The INN Shop

Applicant disclaims the word "Shop" separate and apart from the mark as shown.

Class 39—Clothing

For Men's Suits, Sport Coats, Slacks, Sweaters, Rainwear, Outerwear Jackets, Shirts, Ties, Socks, and Belts (Int. Cl. 25).
First use Nov. 16, 1967.

Class 101—Advertising and Business

For Operating a Department Specializing in Men's Clothing in a Retail Department Store (Int. Cl. 35).
First use Jan. 2, 1968.

SN 314,999. Melville Shoe Corporation, New York, N.Y. Filed Dec. 23, 1968.

FOXMOOR

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

For Purses and Handbags (Int. Cl. 18).

Class 39—Clothing

For Women's and Misses' Wearing Apparel—Namely, Gloves, Mittens, Suits, Coats, Shirts, Shifts, Dresses, Robes, Blouses, Slacks, Sweaters, Jackets, Hats, Hat Sets, Hoods, Scarfs, Capes, Toques, Ties, Earmuffs, Raincoats, Rain Jackets, Vests, Swimwear, Handkerchiefs, Skirts, Shoes, Slippers, Boots, and Hosiery (Int. Cl. 25).

First use at least prior to Dec. 3, 1968.

SN 315,851. Firma Robert Tavernier, Tielt, Belgium. Filed Jan. 6, 1969.

ERTA

Owner of Belgian Reg. No. 1,240, dated Aug. 16, 1961; and U.S. Reg. Nos. 841,435 and 847,201.

Class 1—Raw or Partly Prepared Materials

For Semi-Finished Materials Made From Synthetic Resins To Be Used in Industry, These Materials Being in the Form of Sheets, Plates, Blocks, Rods, Tubes, Bands, and Threads (Int. Cl. 17).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Machine, Motor and Tool Parts Made From Synthetic Resins, These Parts Being in the Nature of Bearings, Housings, Supports, Rods, Shafts, and Gears (Int. Cl. 7).

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.106.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 292,550. Charles River Breeding Laboratories, Inc., North Wilmington, Mass. Filed Mar. 6, 1968.

ASTROMICE

For Laboratory Animals—Namely, Laboratory Mice (Int. Cl. 31).
First use Feb. 21, 1968.

SN 293,582. Riley Yieldmaster Seed Corporation, Hart, Tex. Filed Mar. 18, 1968.

Yieldmaster

The drawing is lined for yellow and blue; color does not form a part of the trademark.
For Field Planting Seed Such as Cotton Seed, Grain Sorghum Seed, Forage Sorghum Seed, Wheat Seed, and Sweet Corn Seed (Int. Cl. 31).
First use Mar. 15, 1957.

SN 294,303. Nichols & Company, Inc., Boston, Mass. Filed Mar. 27, 1968.

WELL·A·MELD

Owner of Reg. No. 814,764.
For Nylon Injection Molding Resins (Int. Cl. 1).
First use Jan. 23, 1968.

SN 294,305. Nichols & Company, Inc., Boston, Mass. Filed Mar. 27, 1968.

WELL·BLEND

Owner of Reg. No. 814,764.
For Nylon Injection Molding Resins (Int. Cl. 1).
First use Jan. 25, 1968.

SN 296,061. William Amer Company, Philadelphia, Pa. Filed Apr. 19, 1968.

KING KANGAROO

Applicant disclaims exclusive use of the word "Kangaroo" apart from the mark as shown. Owner of Reg. No. 438,956.
For Kangaroo Leather (Int. Cl. 18).
First use Sept. 18, 1946.

SN 296,062. William Amer Company, Philadelphia, Pa. Filed Apr. 19, 1968.

KING KID

Applicant disclaims Exclusive use of the word "Kid" apart from the mark as shown.
For Glazed Kid Leather (Int. Cl. 18).
First use Jan. 1, 1909.

SN 305,298. Allied Chemical Corporation, New York, N.Y. Filed Aug. 16, 1968.

SOURCE

For Continuous Filament and Staple Fiber (Int. Cl. 22).
First use Nov. 6, 1967.

SN 307,327. Hercules Incorporated, Wilmington, Del. Filed Sept. 13, 1968.

HERCOSETT

For Synthetic Resin (Int. Cl. 1).
First use Aug. 16, 1968.

SN 307,502. The Richardson Company, Melrose Park, Ill. Filed Sept. 16, 1968.

R 570

For Synthetic Resins (Int. Cl. 1).
First use June 2, 1967.

SN 307,506. San Lorenzo Nursery Company, Los Angeles, Calif. Filed Sept. 16, 1968.

FLOWERS INTERNATIONAL

The word "Flowers" is disclaimed apart from the mark as shown.
For Cut Flowers (Int. Cl. 31).
First use on or about Apr. 8, 1968.

SN 308,958. Aiken Industries, Inc., New York, N.Y. Filed Oct. 7, 1968.

REDI-BAR

For Cultured Quartz (Int. Cl. 19).
First use July 25, 1968.

Class 2—Receptacles

SN 308,321. Sexton Can Company, Inc., Everett, Mass. Filed Sept. 26, 1968.

SEXTON

Owner of Reg. No. 267,329.
For Metal Cans (Int. Cl. 21).
First use as early as Sept. 1, 1903.

SN 309,055. M. Korn Packaging Co., Inc., New York, N.Y. Filed Oct. 7, 1968.

PERFECT FIT

For Plastic Film Bags (Int. Cl. 20).
First use Sept. 24, 1968.

SN 309,800. United Services of America, Inc., Columbus, Ohio. Filed Oct. 16, 1968.

MINIT MAN

For Litter Receptacles (Int. Cl. 21).
First use Aug. 7, 1967.

SN 309,945. American Marine, Incorporated, Cocoa Beach, Fla. Filed Oct. 18, 1968.

AQUAGARD

For Boat Sterilization Tanks (Int. Cl. 20).
First use July 11, 1968.

SN 310,110. Donald G. Larson, d.b.a. Hopkins Food Equipment, Hopkins, Minn. Filed Oct. 21, 1968.

WONDEROASTER

For Food Bags and Food Trays (Int. Cl. 20).
First use Sept. 5, 1968.

SN 310,773. W. R. Grace & Co., Duncan, S.C. Filed Oct. 29, 1968.

GOURMETWARE

For Covered Plastic Receptacles for Use in Vending Machines (Int. Cl. 20).
First use Oct. 8, 1968.

SN 311,050. Mitsubishi Rayon Co., Ltd., Chuo-ku, Tokyo, Japan. Filed Oct. 31, 1968.

ACRYWARE

Owner of Japanese Reg. No. 789,690, dated Aug. 10, 1968.
For House Wares and Table Wares Made From Synthetic Resins—Namely, Berry Plates, Saucers, Towel Saucers, Coasters, Pitchers, Glasses, Napkin Holders, Japanese Style Lunch Boxes, Compotes, Egg-Stands, Salad-Servers, and Plates (Int. Cl. 21).

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 314,060. Finesse Products, Inc., Mount Kisco, N.Y. Filed Dec. 10, 1968.

color mate

For White Fabric Handbags for Women (Int. Cl. 18).
First use on or about Nov. 24, 1965.

Class 5—Adhesives

SN 310,448. Delta American Corporation, Wheeling, Ill. Filed Oct. 24, 1968.

DELTAPE

For All Purpose Pressure Sensitive Tape (Int. Cl. 17).
First use February 1964.

Class 6—Chemicals and Chemical Compositions

SN 262,652. Rhein-Chemie Gesellschaft mit beschrankter Haftung, Heidelberg, Germany. Filed Jan. 5, 1967.

TALCULIN

Owner of German Reg. No. 674,713, dated Mar. 10, 1954.
For Softening Agents for Rubber, Plastics, and Adhesive Substances; Non-Foaming Separating Agents for the Prevention of Undesirable Tackiness of Sheets of Raw Rubber or Uncured Compounds and Extrusions; and Surface Active Agents (Int. Cl. 1).
First use Mar. 11, 1954; in commerce October 1966.

SN 276,717. United States Automotive, Inc., Colorado Springs, Colo. Filed July 24, 1967.

POWR

The drawing is lined for the colors yellow and red.
For Battery Reconditioning Additives (Int. Cl. 1).
First use June 15, 1967.

SN 287,568. Milchem Incorporated, d.b.a. Milchem Aquaness Chemical Division, Houston, Tex. Filed Dec. 26, 1967.

AQUANUL

For Biocides for the Control of Micro-Organisms in Oil Production Fluids and Cooling Water (Int. Cl. 5).
First use May 19, 1965.

SN 288,793. Cleveland Technical Center, Inc., Cleveland, Ohio. Filed Jan. 15, 1968.

D-24

Owner of Reg. Nos. 787,402, 787,646, and 787,940.
For Corrosion Inhibitors (Int. Cl. 2).
First use Jan. 19, 1967.

SN 288,794. Cleveland Technical Center, Inc., Cleveland, Ohio. Filed Jan. 15, 1968.

CLEVE-TEK

Owner of Reg. Nos. 787,402, 787,646, and 787,940.
For Corrosion Inhibitors (Int. Cl. 2).
First use Jan. 19, 1967.

SN 295,615. Chase & Marshall Laboratories, Colton, Calif. Filed Apr. 15, 1968.

RAPID FIRE

For Chemical Drying Agents Used in the Production of Dental Ceramics and Dental Investments for Casting Purposes (Int. Cl. 1).
First use in or about September 1967.

SN 296,249. Standard Oil Company, Flemington, N.J. Filed Apr. 23, 1968.

EDCO

For Industrial Chemical Additives and Processing Aids for Improving and Altering Characteristics and Performance of Petroleum Products; and Rust Inhibitors (Int. Cls. 1 and 2).
First use Nov. 2, 1967.

SN 296,250. Standard Oil Company, Flemington, N.J. Filed Apr. 23, 1968.

EDCO

For Aromatic, Hydrocarbon and Aliphatic Solvents for General Use in the Industrial Arts (Int. Cl. 1).
First use Oct. 6, 1967.

SN 298,772. Harris Serum & Supply Company, McCook, Nebr. Filed May 22, 1968.

PESTI SACK

The word "Sack" is disclaimed apart from the mark as shown.
For Insecticide (Int. Cl. 5).
First use Apr. 1, 1968.

SN 304,979. St. Joseph Lead Company, New York, N.Y. Filed Aug. 12, 1968.

LEAD-FREE ST. JOE ZINC OXIDE

No registration rights are claimed for the words "Lead-Free Zinc Oxide" apart from the mark shown in the drawing, but the applicant waives none of its common law rights therein. Owner of Reg. Nos. 728,124, 786,638, and others.
For Zinc Oxide (Int. Cl. 2).
First use Dec. 8, 1958.

SN 314,855. The Procter & Gamble Company, Cincinnati, Ohio. Filed Dec. 19, 1968.

OFF-SHOOT-T

For Tobacco Sucker Control Agent (Int. Cl. 5).
First use Nov. 7, 1968; Oct. 7, 1965, as to "Off-Shoot."

SN 314,856. The Procter & Gamble Company, Cincinnati, Ohio. Filed Dec. 19, 1968.

T

For Tobacco Sucker Control Agent (Int. Cl. 5).
First use Nov. 7, 1968.

SN 314,930. American Home Products Corporation, New York, N.Y. Filed Dec. 20, 1968.

Diaper Pure

Owner of Reg. Nos. 520,073 and 696,246.
For Disinfectant Which Helps in Preventing Diaper Rash, Deodorizes, and Aids in Cleaning (Int. Cl. 5).
First use Apr. 16, 1968.

Class 7 — Cordage

SN 309,665. Columbian Rope Company, Auburn, N.Y. Filed Oct. 15, 1968.

INTREPID

For Rope (Int. Cl. 22).
First use on or about Jan. 29, 1968.

SN 310,061. CF & I Steel Corporation, Denver, Colo. Filed Oct. 21, 1968.

TELE-ROEPAC

Owner of Reg. No. 821,003.
For Wire Rope and Cables (Int. Cl. 6).
First use Sept. 20, 1968.

SN 310,491. Papercraft Corporation, Pittsburgh, Pa. Filed Oct. 24, 1968.

Papercraft

Owner of Reg. No. 835,954.
For Ribbons and Bows (Int. Cl. 26).
First use Mar. 15, 1966.

SN 310,586. Papercraft Corporation, Pittsburgh, Pa. Filed Oct. 25, 1968.

For Ribbons and Bows (Int. Cl. 26).
First use Jan. 15, 1966.

Class 8 — Smokers' Articles, Not Including Tobacco Products

SN 300,736. A. Oppenheimer & Company, Inc., Maywood, N.J. Filed June 18, 1968.

DON ROBERTO

For Pipes (Int. Cl. 34).
First use Feb. 19, 1968.

SN 300,737. A. Oppenheimer & Company, Inc., Maywood, N.J. Filed June 18, 1968.

DON ROBERTO

For Pipes (Int. Cl. 34).
First use Feb. 19, 1968.

SN 300,802. Butane Match Corporation of America, Beverly Hills, Calif. Filed June 19, 1968.

BUTANE MATCH

The word "Butane" is disclaimed apart from the mark.
For Lighter for Cigars, Cigarettes, and Smoking Pipes (Int. Cl. 34).
First use June 6, 1968.

Class 10 — Fertilizers

SN 309,546. Cordray & Cordray, Grand Junction, Colo. Filed Oct. 14, 1968.

MOUNTAIN RIVER

For Fertilizer and Soil Amendment (Int. Cl. 1).
First use on or about Sept. 5, 1968.

SN 311,343. Agritec Co., Inc., Houston, Tex. Filed Nov. 5, 1968.

AGRITEC

For Nutrient Plant Matrix (Int. Cl. 1).
First use at least as early as Aug. 29, 1968.

Class 12 — Construction Materials

SN 261,242. Interoceanic Commodities Corporation, d.b.a. Henry Weis Manufacturing Co., Elkhart, Ind. Filed Dec. 21, 1966.

WEIS

The word "Weis" is a German word meaning "wise."
For Metal Partitions and Doors, and Shower and Toilet Compartments (Int. Cl. 6).
First use Nov. 15, 1966; at least as early as 1875 as to "Weis."

SN 265,455. S-G Steel Glide Mfg. Corp., New York, N.Y. Filed Feb. 16, 1967.

STEEL GLIDE

For Protective Windows, Preferably Installed on the Inside of Existing Windows To Provide a Positive Shield Against Street Noise, Dust, and the Like (Int. Cl. 6).
First use in or before October 1961.

SN 271,084. Vesuvius Crucible Company, Pittsburgh, Pa. Filed May 9, 1967.

COSMOLITE

For High Temperature Heat Resistant Refractory Calibrated Compositions (Int. Cl. 19).
First use Apr. 21, 1967.

SN 284,188. FlangeKlamp Corporation, Buffalo, N.Y. Filed Nov. 6, 1967.

FLANGEKLAMP

For Grid System Parts for Holding Ceiling Tiles (Int. Cl. 19).
First use at least as early as July 9, 1965.

SN 285,159. Swedish Rail System AB, Stockholm-Solna, Sweden. Filed Nov. 17, 1967.

TORSOFLEX

For Railroad Rail Supporting Pads (Int. Cl. 19).
First use on or about Oct. 20, 1967; in commerce Oct. 20, 1967.

SN 291,437. Seatex Corporation, Houston, Tex. Filed Feb. 19, 1968.

SEATEX

For Threaded Joint Sealing Compound Formed of Fluorocarbon Resins of Molybdenum Disulfide, Lithium and Synthetic Oils (Int. Cl. 17).
First use July 19, 1967.

SN 294,478. Corning Glass Works, Corning, N.Y. Filed Mar. 29, 1968.

PYRAM

For Building and Architectural Products, Specifically Wall Panels, and Cladding Used To Overlay Interior and Exterior Surfaces and Attached Thereto by Means of Adhesive and/or Mechanical Fasteners (Int. Cl. 19).
First use Mar. 14, 1968.

SN 298,964. R-H-R Prefab Manufacturing Company, Whittier, Calif. Filed May 28, 1968.

R-H-R

For Prefab Construction Panels (Int. Cl. 19).
First use Apr. 15, 1968.

SN 310,295. American Cyanamid Company, Wayne, N.J. Filed Oct. 23, 1968.

For Flashing (Int. Cl. 6).
First use Aug. 1, 1958.

SN 313,649. The Georgia Marble Company, Atlanta, Ga. Filed Dec. 5, 1968.

CORKSTONE

For Natural Quartzite Uncut Stone for Building Veneers (Int. Cl. 19).
First use Mar. 27, 1968.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 288,474. The Youngstown Sheet and Tube Company, Boardman, Ohio. Filed Feb. 9, 1966.



For Metal and Plastic Pipe, Pipe Couplings, Tubing and Fittings (Int. Cls. 6 and 17).
First use Mar. 14, 1963.

SN 288,933. H. B. Sherman Manufacturing Company, d.b.a. H. B. Sherman Manufacturing Co., Battle Creek, Mich. Filed Nov. 1, 1967.

SHERMAN FLUIDIC

Owner of Reg. No. 534,170.
For Impulse Lawn Sprinkler Heads, as Well as Head and Supporting Base Combinations, and Parts Thereof (Int. Cl. 11).
First use Sept. 10, 1967.

SN 293,590. Selfix, Inc., Chicago, Ill. Filed Mar. 18, 1968.

GRIPPER

For Soap Holders (Int. Cl. 21).
First use Feb. 1, 1968.

SN 301,433. Karew Inc., West Barrington, R.I. Filed June 26, 1968.

Regency

For Matching Bath Ensemble Featuring a Cast Metal Guest Towel Holder, Baroque Style Soap Dish, Vanity Tissue Holder, Magnifier and Mirror, and a Toilet Tray (Int. Cl. 21).
First use on or about May 28, 1968.

SN 307,892. Syncroflow Inc., Downers Grove, Ill. Filed Aug. 19, 1968.

HYDROCUMULATOR

For Hydropneumatic Tank for Use in a Fluid Pressure Booster System (Int. Cl. 11).
First use July 1, 1968.

SN 310,657. Georgia-Pacific Corporation, Portland, Oreg. Filed Oct. 28, 1968.

CORMATIC

For Dispensers for Toilet Tissue (Int. Cl. 21).
First use Oct. 23, 1967.

SN 316,167. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Jan. 9, 1969.

3M

For Fasteners Made of Plastic (Int. Cl. 20).
First use Dec. 5, 1968.

SN 316,168. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Jan. 9, 1969.

HEDLOK

For Fasteners Made of Plastic (Int. Cl. 20).
First use Dec. 5, 1968.

SN 316,508. J. L. Thomson Rivet Corporation, Waltham, Mass. Filed Jan. 14, 1969.



For Rivets (Int. Cl. 6).
First use at least as early as Jan. 22, 1968.

Class 14—Metals and Metal Castings and Forgings

SN 283,224. Chemalloy Company, Inc., Philadelphia, Pa. Filed Oct. 24, 1967.

NITREX

For Addition Agents for Molten Steel, Comprising Agglomerated Forms of Pre-Measured Mixtures of Manganese or Ferromanganese Particles With a Nitrogen-Bearing Chemical Compound (Int. Cl. 6).
First use May 13, 1966.

SN 303,974. Anaconda Aluminum Company, Louisville, Ky. Filed July 31, 1968.

UNIVERSAL

For Aluminum Foil (Int. Cl. 6).
First use June 19, 1968.

SN 307,123. Muskegon Piston Ring Company, Muskegon, Mich. Filed Sept. 11, 1968.

QUESTOR

For Ferrous Castings, Raw or Slightly Machined (Int. Cl. 6).
First use on or about Aug. 16, 1968.

SN 315,359. Gemini Corporation, Rosemont, Ill. Filed Dec. 30, 1968.

GEMROD

For Precision Ground Steel, Stainless Steel, Brass, Aluminum, and Alloys Round Bar Stock (Int. Cl. 6).
First use Dec. 5, 1968.

Class 15—Oils and Greases

SN 307,535. Simoniz Company, Chicago, Ill. Filed Sept. 17, 1968.

SIMONIZ Special

No claim is made to the exclusive use of the word "Special" alone. The drawing is lined for the color orange, but color is not a part of the mark. Owner of Reg. Nos. 137,701, 855,409, and others.
For Oil and Gasoline Additives for Automobiles (Int. Cl. 1).
First use Aug. 23, 1968.

Class 16—Protective and Decorative Coatings

SN 294,481. Duron Paint Manufacturing Company, Inc., Beltsville, Md. Filed Mar. 28, 1968.



Owner of Reg. No. 581,794 and others.
For Paints (Int. Cl. 2).
First use on or about Feb. 15, 1968; on or about Sept. 1, 1947 as to "Duron."

SN 308,862. Artique Enterprises, Inc., Walkertown, N.C. Filed Oct. 4, 1968.

EPOXA-COLOR

For Decorative and Protective Coating Material for Ceramics, Wood, Leather, Metal, Fabric, and Paper Products (Int. Cl. 2).
First use July 1968.

SN 310,046. American Tar Company, Seattle, Wash. Filed Oct. 21, 1968.

ATCO

Owner of Reg. Nos. 396,999, 430,879, and others.
For Roof Coating Primer, Gilsonite-Asphalt Paint, Carbon Elastic Paint, Stack and Boiler Paint, Asphalt Roof Coating, Asphalt Asbestos Fibre Coating, and Concrete Coating (Int. Cl. 2).
First use on or about Mar. 1, 1922.

Class 17—Tobacco Products

SN 310,029. Mendez Enterprises, Inc., Miami, Fla. Filed Oct. 21, 1968.



For Cut Tobacco and Cigars (Int. Cl. 34).
First use Jan. 23, 1965.

SN 315,870. Universal Cigar Corporation, New York, N.Y. Filed Dec. 30, 1968.

LA OPTIMA

Owner of Reg. No. 794,683.
For Cigars (Int. Cl. 34).
First use 1866.

Class 18—Medicines and Pharmaceutical Preparations

SN 296,641. Bristol-Myers Company, New York, N.Y. Filed Apr. 26, 1968.

ASSURE

Owner of Reg. No. 710,463.
For Oral Antiseptic Mouthwash (Int. Cl. 5).
First use Mar. 27, 1968.

Class 19—Vehicles

SN 302,746. Metalloy Steel Foundry, Inc., Sacramento, Calif. Filed July 15, 1968.

CAN'T MISS

For Automatic Couplings for Rail Cars (Int. Cl. 12).
First use about Mar. 10, 1952.

SN 305,158. Recreational Vehicles of America, Inc., Benton Harbor, Mich. Filed Aug. 14, 1968.



For Vehicle Bodies, More Particularly Bodies With Living and Camping Facilities Mounted on Trailers, Self-Propelled Chassis or Removably Mounted on Trucks (Int. Cl. 12).
First use Feb. 21, 1966.

SN 305,555. Melvin R. Launius, Greenville, S. C. Filed Aug. 20, 1968.

AUTO-TRON

For Skid Control Device for Use on Motor Vehicles (Int. Cl. 12).
First use May 1968.

SN 305,635. Coburn & Sargent, Inc., Hialeah, Fla. Filed Aug. 21, 1968.

Aquasport

For Boats (Int. Cl. 12).
First use July 17, 1965.

SN 306,369. Goldfish Sailboat Company, Inc., Waxahachie, Tex. Filed Aug. 30, 1968.



For Sailboats (Int. Cl. 12).
First use July 17, 1968.

SN 312,978. American Motors Corporation, Kenosha, Wis. Filed Nov. 25, 1968.

AMX

For Automobiles and Structural Parts Thereof (Int. Cl. 12).
First use in or before February 1968.

SN 312,979. American Motors Corporation, Kenosha, Wis. Filed Nov. 25, 1968.

SST

For Automobiles and Structural Parts Thereof (Int. Cl. 12).
First use in or before October 1966.

SN 315,301. Caravans International Limited, Saffron Walden, Essex, England. Filed Dec. 27, 1968.



For House Trailers, Travel Trailers, and Motor Caravans (Int. Cl. 12).
First use June 17, 1967; in commerce September 1967.

Class 20—Linoleum and Oiled Cloth

SN 283,632. Congoleum Industries, Inc., Kearny, N.J., assignee of Congoleum-Nairn Inc., Kearny, N.J. Filed Oct. 30, 1967.

ROMAN ACCENT

Owner of Reg. Nos. 748,846 and 773,543.
For Plastic Coverings of the Smooth Surface, Resilient Type for Surfaces Such as Floors, Walls, Countertops, and the Like, in the Form of Rolls, Rugs, and Tiles (Int. Cl. 27).
First use Sept. 29, 1967.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 271,173. Prestodial, Inc., New York, N.Y. Filed May 10, 1967.

PRESTODIAL

For Automatic Telephone Dialing Equipment (Int. Cl. 9).
First use Aug. 12, 1964.

SN 279,467. Fisher Radio Corporation, Long Island City, N.Y. Filed Aug. 31, 1967.

STEREOBEAM

For Radio Receiving Sets Having Therein Special Circuitry for Multiplex Operation, and Devices for Adapting Frequency Modulated Radio Receiving Sets for Multiplex Operation (Int. Cl. 9).
First use July 3, 1961.

SN 288,351. Robroy Industries, Inc., Verona, Pa. Filed Jan. 8, 1968.

ROBROY FLEX

Applicant disclaims the word "Flex" apart from the mark as shown.
For Plastic Coated Metallic Conduits for Electrical Conductors (Int. Cl. 9).
First use about Mar. 20, 1966.

SN 298,449. Information Instruments Incorporated, Ann Arbor, Mich. Filed May 17, 1968.

PDQ

For Computer Interface Equipment—Namely, Apparatus for Converting Process Data Supplied Thereto to a Computer-Compatible Form and Vice Versa (Int. Cl. 9).
First use Aug. 8, 1967.

SN 299,382. Ristance Corporation, Bremen, Ind. Filed May 29, 1968.



For Electrical Wiring Assemblies (Int. Cl. 9).
First use Jan. 1, 1967.

SN 302,772. Spero Electric Corporation, Cleveland, Ohio. Filed July 15, 1968.

RELITE MITE

For Electrical Lighting Fixtures (Int. Cl. 11).
First use July 1966.

SN 303,196. Reda Pump Company, Bartlesville, Okla. Filed July 19, 1968.

REDALEAD

For Electrically Insulated Wire Cable and Conductors Embodying a Lead Sheath (Int. Cl. 9).
First use May 3, 1968.

SN 303,197. Reda Pump Company, Bartlesville, Okla. Filed July 19, 1968.

REDALENE

For Wire Cable and Conductors Provided with Thermoplastic Insulation (Int. Cl. 9).
First use May 1, 1968.

SN 303,524. Gerome Manufacturing Company, Uniontown, Pa. Filed July 24, 1968.

TESTOX

For Electrical Terminal Boxes (Int. Cl. 9).
First use June 26, 1968.

SN 303,835. Sprague Electric Company, North Adams, Mass. Filed July 29, 1968.

SADT

For Silicon Alloy Diffused Base Transistors (Int. Cl. 9).
First use Apr. 1, 1959.

SN 303,836. Sprague Electric Company, North Adams, Mass. Filed July 29, 1968.

MAT

For Microalloy Transistors (Int. Cl. 9).
First use March 1957.

SN 303,855. Dividean, Incorporated, Severn, Md. Filed July 11, 1968.

VID-E-MOTOR

For Electric Motors (Int. Cl. 7).
First use Apr. 21, 1967.

SN 304,095. Johns-Manville Corporation, New York, N.Y. Filed Aug. 1, 1968.

QUINTEX

Owner of Reg. Nos. 522,312, 583,828, and others.
For Electrical Insulation (Int. Cl. 17).
First use at least on or about June 27, 1968.

SN 305,128. General Cable Corporation, New York, N.Y. Filed Aug. 14, 1968.

GENCORWELD

For Electrical Cables, Particularly Welding Cables (Int. Cl. 9).
First use about March 1967.

SN 305,227. Matsushita Electric Industrial Co., Ltd., Kadoma-shi, Osaka, Japan. Filed Aug. 15, 1968.

Exact-O-Vision

For Television Receivers (Int. Cl. 9).
First use Mar. 25, 1968; in commerce Apr. 19, 1968.

SN 305,228. Matsushita Electric Industrial Co., Ltd., Kadoma-shi, Osaka, Japan. Filed Aug. 15, 1968.

THE YORKTOWN

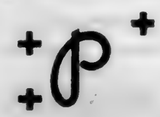
For Television Receivers (Int. Cl. 9).
First use Mar. 29, 1968; in commerce Apr. 19, 1968.

SN 305,779. Sterling Information Services, Ltd., New York, N.Y., assignee of International Telemeter Corporation, Los Angeles, Calif. Filed Aug. 22, 1968.

FOCUS 12

For Television Signal Converters (Int. Cl. 9).
First use July 6, 1967.

SN 305,854. Positronic Industries, Inc., Springfield, Mo. Filed Aug. 23, 1968.



For Electrical Components—Namely, Radio Frequency Connectors, Rack and Panel Connectors, Cylindrical Connectors, Capacitors, and Filters (Int. Cl. 9).
First use June 27, 1968.

SN 306,515. Sears, Roebuck and Co., Chicago, Ill. Filed Sept. 3, 1968.

WAYFARER

For Shortwave Portable Radios (Int. Cl. 9).
First use on or about Oct. 19, 1967.

SN 306,523. Transformer-Electronics Company, Boulder, Colo. Filed Sept. 3, 1968.



For Miniaturized Regulated Power Supply Units in the Nature of Transformers, Converters, and Photomultiplier Circuit Breakers (Int. Cl. 9).
First use in or about the early part of 1959.

SN 307,004. Carpenter Mfg. Co., Somerville, Mass. Filed Sept. 10, 1968.

MOBILITE

For Electric Spotlights for Vehicles (Int. Cl. 11).
First use on or about Nov. 20, 1933.

SN 307,824. Belden Corporation, Chicago, Ill. Filed Sept. 20, 1968.

CELENON

For Electrical Wire (Int. Cl. 9).
First use July 12, 1968.

SN 310,111. Donald G. Larson, d.b.a. Hopkins Food Equipment, Hopkins, Minn. Filed Oct. 21, 1968.

WONDEROASTER

For Electrically Operated Rotisseries (Int. Cl. 11).
First use Sept. 5, 1968.

SN 314,807. N.V. Philips' Gloeilampenfabrieken, Eindhoven, Netherlands. Filed Dec. 18, 1968.



Owner of U.S. Reg. Nos. 681,200, 837,968, and others.
For Radios; Radio-Phonograph Combinations; Radio-Tape Recording Combinations; High Fidelity Equipment—Namely, Tuners, Amplifiers and Loudspeakers; and Parts Therefor (Int. Cl. 9).
First use 1939 on radios; in commerce at least as early as December 1949.

SN 315,464. Natvar Corporation, Woodbridge, N.J. Filed Dec. 31, 1968.

F-LAR

For Electrical Insulation Material in Sheet and Tape Form (Int. Cl. 17).
First use Nov. 13, 1968.

Class 22 — Games, Toys, and Sporting Goods

SN 302,074. HMH Publishing Co. Inc., Chicago, Ill. Filed July 5, 1968.



Owner of Reg. Nos. 643,926 and 791,333.
For Golf Putters, Club Head Covers, Golf Balls, and Golf Tees (Int. Cl. 28).
First use in or about December 1963.

SN 312,392. Mattel, Inc., Hawthorne, Calif. Filed Nov. 18, 1968.

DANCERINA

For Dolls, Doll Clothing, and Doll Accessories (Int. Cl. 28).
First use Oct. 23, 1968.

SN 313,834. Plymouth Wholesale Corporation, New York, N.Y. Filed Dec. 6, 1968.

RODDYMATIC

Owner of Reg. No. 734,104 and others.
For Fishing Rods, Reels, Line, Landing Nets, Handles, Guides, Reel Seats, Lures, and All Fishing Tackle (Int. Cls. 22 and 28).
First use at least since March 1967.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

SN 269,770. Metalcraft Engineering Company, Lincoln, Nebr. Filed Apr. 21, 1967.

"TURN-TITE"

For Wire Tightener (Int. Cl. 8).
First use January 1952.

SN 279,078. Lathan Manufacturing Co., Redwood City, Calif. Filed Aug. 25, 1967.

AERO TRACTOR

Applicant disclaims the word "Tractor" apart from the mark as shown.
For Self-Propelled, Manually Guidable Machines for Towing and Maneuvering Aircraft for Storage in and Removal From Hangars and for Positioning Aircraft in Airports and Airfields (Int. Cl. 7).
First use in or about 1957.

SN 280,555. Char-Lynn Company, Eden Prairie, Minn. Filed Sept. 18, 1967.



For Hydraulic Motors, Hydraulic Pumps, Pneumatic Motors; and Power Hydraulic Steering Apparatus for Vehicles and Machinery—Namely, Farm Equipment, Lift Trucks, Construction Machinery and Material Handling Equipment (Int. Cls. 7 and 12).
First use on or about July 1, 1964.

SN 280,604. FMC Corporation, Chicago, Ill., by merger from Link-Belt Company, Chicago, Ill. Filed Sept. 18, 1967.

RENITORQ

For Gears, Gear Drives and Parts Thereof, Speed Reducers and Parts Thereof, and Variable Speed Drives and Parts Thereof (Int. Cl. 7).
First use Aug. 18, 1967.

SN 289,345. Sperry Rand Corporation, New York, N.Y. Filed Jan. 22, 1968.

SPERRY RAND

For Farm Machinery—Namely, Animal Feeders; Bale Throwers; Balers; Combines; Corn Shellers; Elevators; Fertilizer Distributors; Forage Blowers; Forage Harvesters; Grinder Mixers; Hay Conditioners; Manure Spreaders; Material Choppers; Material Handling Equipment—Namely, Screw; Belt and Endless Chain Conveyors; Mowers; Crop Cutting and Conditioning Machines; Rakes; Silage Distributors; Silo Unloaders; Automatic Farm Bale Wagons; Windrowers; and Swathers (Int. Cl. 7).
First use Aug. 25, 1967.

SN 289,346. Sperry Rand Corporation, New York, N.Y. Filed Jan. 22, 1968.

SPERRY RAND

For Farm Machinery—Namely, Animal Feeders; Bale Throwers; Balers; Combines; Corn Shellers; Elevators; Fertilizer Distributors; Forage Blowers; Forage Harvesters; Grinder Mixers; Hay Conditioners; Manure Spreaders; Material Choppers; Material Handling Equipment—Namely, Screw; Belt and Endless Chain Conveyors; Mowers; Crop Cutting and Conditioning Machines; Rakes; Silage Distributors; Silo Unloaders; Automatic Farm Bale Wagons; Windrowers; and Swathers (Int. Cl. 7).
First use Aug. 25, 1967.

SN 289,348. Sperry Rand Corporation, New York, N.Y. Filed Jan. 22, 1968.



For Farm Machinery—Namely, Animal Feeders; Bale Throwers; Balers; Combines; Corn Shellers; Elevators; Fertilizer Distributors; Forage Blowers; Forage Harvesters; Grinder Mixers; Hay Conditioners; Manure Spreaders; Material Choppers; Material Handling Equipment—Namely, Screw; Belt and Endless Chain Conveyors; Mowers; Crop Cutting and Conditioning Machines; Rakes; Silage Distributors; Silo Unloaders; Automatic Farm Bale Wagons; Windrowers; and Swathers (Int. Cl. 7).
First use Aug. 25, 1967.

SN 295,670. Quick Service Textiles Inc., Chicago, Ill. Filed Apr. 15, 1968.

BAN-ROL

Owner of Reg. No. 768,236.
For an Attachment to a Sewing Machine for Feeding and Cutting Strip Material To Be Sewed Thereon (Int. Cl. 7).
First use Mar. 4, 1968.

SN 296,135. Fawn Engineering Company, Des Moines, Iowa. Filed Apr. 22, 1968.

Fawn

For Machines for Vending Cigarettes, Candy, Pastry, Coffee, Popcorn, and Soft Drinks (Int. Cl. 9).
First use about Apr. 1, 1949.

SN 296,137. Federal Machine Corp. Des Moines, Iowa Filed Apr. 22, 1968.

Federal

For Machines for Vending Cigarettes, Candy, Pastry, Coffee, Popcorn, and Soft Drinks (Int. Cl. 9).
First use about Jan. 2, 1961.

SN 304,515. T.F.H Publications, Inc., Jersey City, N.J. Filed Aug. 6, 1968.

WHISPERJET

For Aquarium Air Pump (Int. Cl. 7).
First use July 23, 1968.

SN 304,561. UTD Corporation, Athol, Mass. Filed Aug. 7, 1968.

BUTTERFIELD THRED-RITE

Owner of Reg. No. 856,988.
For Screw Thread Cutting Dies and Die Holders (Int. Cl. 7).
First use 1938.

SN 304,998. Universal Oil Products Company, d.b.a. UOP Air Correction Division, Des Plaines, Ill. Filed Aug. 12, 1968.

VENTRI-SPHERE

For Scrubbing Apparatus for Washing Gaseous Streams (Int. Cl. 7).
First use Sept. 14, 1967.

SN 305,112. Big Drum, Inc., Columbus, Ohio. Filed Aug. 14, 1968.

CUPTROLLER

For Machine for Filling and Sealing Cups (Int. Cl. 7).
First use Oct. 15, 1967.

SN 305,137. IMC Corporation of America, Tipp City, Ohio. Filed Aug. 14, 1968.

IMC

For Woodworking Machinery—Namely, Rip Saws, Routers, Trim Saws, Facing Planers and Thickness Surfacers, and Accessories Therefor (Int. Cl. 7).
First use May 21, 1968.

SN 305,411. The Devilbiss Company, Toledo, Ohio. Filed Aug. 19, 1968.
Owner of Reg. Nos. 533,019, 771,830, and others.

DeVILBISS Hustler

For Paint Spraying Apparatus and Parts Thereof (Int. Cl. 7).
First use Aug. 2, 1968.

SN 305,459. Wilson Jones Company, Niles, Ill. Filed Aug. 19, 1968.

PET

For Paper Punches (Int. Cl. 16).
First use 1914.

SN 305,680. Roof Manufacturing Company, Pontiac, Ill. Filed Aug. 21, 1968.

PALOMINO

For Riding Lawn Mowers (Int. Cl. 7).
First use on or before Aug. 31, 1967.

SN 305,912. Borg-Warner Corporation, Chicago, Ill. Filed Aug. 26, 1968.

SLIMLINE

For Bearings for Rotating Shafts (Int. Cl. 7).
First use on or prior to June 7, 1968.

SN 305,944. Lear Siegler, Inc., Detroit, Mich. Filed Aug. 26, 1968.

GEAROLL

For Gear Forming Equipment—Namely, Gear Rolling Dies (Int. Cl. 7).
First use June 20, 1968.

SN 306,128. The Fisher-Pierce Co., Inc., Rockland, Mass. Filed Aug. 28, 1968.

BEARCAT

Owner of Reg. No. 546,727.
For Motors for Marine Propulsion (Int. Cl. 7).
First use July 8, 1968.

SN 306,275. The Seeburg Corporation, Chicago, Ill. Filed Aug. 29, 1968.

CHOICE VEND

Owner of Reg. No. 672,174.
For Vending Machines (Int. Cl. 9).
First use on or about Nov. 8, 1967.

SN 306,526. Wallace-Murray Corporation, New York, N.Y. Filed Sept. 3, 1968.

NuLastic

For Vibration Dampers for Internal Combustion Engines (Int. Cl. 7).
First use July 10, 1968.

SN 306,774. Hoague-Sprague Corporation, Lynn, Mass. Filed Sept. 6, 1968.

GLUFIT

For Papar Box Forming Machines (Int. Cl. 7).
First use Jan. 23, 1968.

SN 307,048. The Salem Tool Company, Salem, Ohio. Filed Sept. 10, 1968.

MUL-T

For Coal Augers (Int. Cl. 7).
First use Aug. 16, 1968.

SN 307,108. General Nucleonics Inc., Columbus, Ohio. Filed Sept. 11, 1968.

MONITER

For Turnstile (Int. Cl. 6).
First use October 1963.

SN 307,453. General Foundry Service Corporation, San Leandro, Calif. Filed Sept. 16, 1968.

HUGGAMOLD

For Casting Mold Jackets (Int. Cl. 6).
First use June 14, 1957.

SN 307,841. Robert B. Huxtable, d.b.a. Sugar Bush Supplies Co., Lansing, Mich. Filed Sept. 20, 1968.

MY-T-LITE

For Power Take-Off Attachment for Chain Saws (Int. Cl. 7).
First use July 18, 1968.

SN 308,219. Miner Industries, Inc., New York, N.Y. Filed Sept. 25, 1968.

HELIO-MAT

For Balloon Vending Machines (Int. Cl. 9).
First use Sept. 1, 1968.

SN 308,220. Miner Industries, Inc., New York, N.Y. Filed Sept. 25, 1968.

BALLOON-O-MAT

For Balloon Vending Machines (Int. Cl. 9).
First use Sept. 1, 1968.

SN 308,477. Federal-Mogul Corporation, Southfield, Mich. Filed Sept. 30, 1968.

TUFGARD

For Bushings (Int. Cl. 7).
First use May 15, 1968.

SN 309,258. Hollymatic Corporation, Park Forest, Ill. Filed Oct. 9, 1968.

GMG

For Mixer, Particularly for Subdivided Meat (Int. Cl. 7).
First use Aug. 29, 1968.

Class 26 — Measuring and Scientific Appliances

SN 274,874. Interdata Incorporated, Eatontown, N.J. Filed June 27, 1967.

INTERDATA

For Digital Computers Including Peripheral Equipment, Software, Digital Memory Systems and Digital Logic Components (Int. Cl. 9).
First use Mar. 6, 1967.

SN 283,528. Ingold Electrodes, Inc., Watertown, Mass. Filed Oct. 27, 1967.

INGOLD

For Electrodes for Measuring Acidity-Alkalinity Conditions, Oxidation-Reduction Potentials or Specific Ion Concentrations—Namely, pH Electrodes, Reference Electrodes, and Metallic Electrodes (Int. Cl. 9).
First use in or before December 1960.

SN 295,495. Bach Auricon, Inc., Los Angeles, Calif. Filed Apr. 12, 1968.

PRO-600

For Photographic and Sound-Recording Equipment—Namely, Sound-on-Film Cameras, Photographic Lenses, Ground Glass Focusing System, View Finders, Sound-on-Film Recording Amplifiers, Sound-Proof Camera Housings, and Film Magazines, and Carrying Cases and Trunks Therefor (Int. Cl. 9).
First use May 1955.

SN 301,264. Sircor Instruments Corp., Roslyn, N.Y. Filed June 24, 1968.

CAP-PET

For Disposable Capillary Pipettes for Laboratory Use (Int. Cl. 9).
First use Dec. 1, 1967.

SN 302,503. Liberty Optical Manufacturing Co., Inc., Newark, N.J. Filed July 11, 1968.

VERGO

Owner of Reg. No. 861,655.
For Spectacle Lenses (Int. Cl. 9).
First use Apr. 30, 1968.

SN 304,169. White's Electronics, Inc., Sweet Home, Oreg. Filed Aug. 1, 1968.

COINMASTER

For Mineral and Metal Detectors (Int. Cl. 9).
First use Jan. 2, 1964.

SN 304,170. White's Electronics, Inc., Sweet Home, Oreg. Filed Aug. 1, 1968.

NUGGETMASTER

For Mineral and Metal Detectors (Int. Cl. 9).
First use July 1, 1958.

SN 304,172. White's Electronics, Inc., Sweet Home, Oreg. Filed Aug. 1, 1968.

TREASUREMASTER

For Mineral and Metal Detectors (Int. Cl. 9).
First use July 1, 1958.

SN 306,126. Engler Instrument Company, Jersey City, N.J. Filed Aug. 28, 1968.

SERVICE-ON-SIGNAL

For Hour Meters (Int. Cl. 9).
First use Apr. 3, 1968.

SN 306,569. Industrial Inventions, Incorporated, Monmouth Junction, N.J. Filed Sept. 4, 1968.

CRICKET

For Audible Detector and Monitor of Electrical Impulses (Int. Cl. 9).
First use Nov. 24, 1967.

SN 306,582. James North (Australia) Pty. Ltd., Annandale, New South Wales, Australia. Filed Sept. 4, 1968.

FILTREX

Priority claimed under Sec. 44(d) on Australian Reg. No. 217,329, dated Mar. 4, 1968.
For Industrial Protective Lenses Including Welding Filter Lenses, and Sunglass Lenses (Int. Cl. 9).

SN 306,926. Kuhlmann-Impex Inc., Houston, Tex. Filed Sept. 9, 1968.

Kuratio

For Drafting Desks (Int. Cl. 16).
First use Nov. 16, 1967.

SN 308,269. Bausch & Lomb Incorporated, Rochester, N.Y. Filed Sept. 26, 1968.

ORTHOGON

Owner of Reg. No. 251,531.
For Ophthalmic Lenses and Lens Blanks (Int. Cl. 9).
First use at least as early as 1958.

SN 308,717. Princeton Gamma-Tech, Incorporated, Newark, N.J. Filed Oct. 2, 1968.

DUODE

For Semiconductor Spectrometer (Int. Cl. 9).
First use June 7, 1968.

SN 308,859. A.I.C. Photo, Inc., New York, N.Y. Filed Oct. 4, 1968.

AiC

For Photographic Cameras, Projectors, Lenses, Filters, Filter Holders, Shutters, Photographic Enlargers, Film Splicers, Film Transparency Viewers, Film Winders, Projection Screens, Exposure Meters, Film Printing and Developing Apparatus, Developing Tanks, Film Magazines, Tripods, Light Sensitive Photographic Paper and Films, Photographic Printers, Camera Carrying Cases and Accessory Cases, Sold With Cameras and Accessories, Electronic Flash Lighting Apparatus, Incandescent Flash Attachments for Cameras and Film Editing Apparatus (Int. Cls. 1 and 9).
First use on or about Sept. 1, 1967.

SN 309,956. Endevco Corporation, Pasadena, Calif. Filed Oct. 18, 1968.

Q-FLEX

For Accelerometers (Int. Cl. 9).
First use Feb. 1, 1967.

SN 310,050. Argus Incorporated, Chicago, Ill. Filed Oct. 21, 1968.

SIDEKICK

For Photographic Equipment—Namely, Cameras (Int. Cl. 9).
First use May 24, 1968.

SN 310,279. Ambac Industries, Inc., Pittsburgh, Pa. Filed Jan. 10, 1969.

FLO-PROVER

For Portable Panel Board Device for Measuring Volumetric Fuel Flow From a Diesel Engine Injection Pump Without Removal From the Engine (Int. Cl. 9).
First use on or about Aug. 15, 1967.

Class 27 — Horological Instruments

SN 308,122. Montre de Sport Genève S.A., Geneva, Switzerland. Filed Sept. 24, 1968.

TAMMY

Owner of Swiss Reg. No. 229,147, dated Dec. 22, 1967.
For Watches and Watch Parts (Int. Cl. 14).

Class 31 — Filters and Refrigerators

SN 295,575. Universal American Corporation, Detroit, Mich. Filed Apr. 12, 1968.

RADIAL-AIRE

For Cooling Unit for Walk in Coolers (Int. Cl. 11).
First use 1958.

SN 301,026. Automotive Filters Inc., Los Angeles, Calif. Filed June 21, 1968.

CLASSIC

For Oil Filters (Int. Cl. 11).
First use on or before Mar. 15, 1968.

SN 305,936. Hungerford & Terry, Inc., Clayton, N.J. Filed Aug. 26, 1968.

STRATAFILT

For Filter Medium Primarily for Filtering Water Containing Iron and/or Manganese (Int. Cl. 11).
First use Feb. 8, 1968.

Class 32 — Furniture and Upholstery

SN 310,569. James B. Lansing Sound, Inc., Los Angeles, Calif. Filed Oct. 25, 1968.

JBL

Owner of Reg. Nos. 782,827 and 782,828.
For Cabinets and Enclosures for High Fidelity Audio, Stereo and Electronic Equipment, Loudspeakers and Speaker Systems (Int. Cl. 20).
First use in 1949.

SN 310,913. Neiman Steel Equipment Company, Inc., Philadelphia, Pa. Filed Oct. 30, 1968.

KLIP-O-MATIC

For Industrial Boltless Steel Shelf Units Including Shelves, Uprights, Panels, Label Holders, Bin Dividers, Shelf Boxes, Box Dividers, Tie Clips, and Spring Fasteners (Int. Cl. 20).
First use Nov. 23, 1962.

SN 312,419. Rudolph Beaver, Inc., Belmont, Mass. Filed Nov. 18, 1968.

SELECT-O-RACK

For Racks for the Storage of Medical Surgical Instruments (Int. Cl. 20).
First use Oct. 25, 1968.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 277,050. S. T. Johnson Co., Oakland, Calif. Filed July 28, 1967.

S. T. JOHNSON CO.

For Power Type Oil and Gas Burners for Installation in or as an Integral Part of Packaged Indirect Fired Furnaces, Boilers and Water Heaters, Used for Heating Residential Dwellings and Office Buildings and for Producing Hot Water for Domestic Use (Int. Cl. 11).
First use 1906.

SN 279,718. The Coleman Company, Inc., Wichita, Kans. Filed Sept. 6, 1967.

DIAL-TEMP

For Portable Catalytic Heaters for Use in Tents, Campers Duck Blinds and the Like (Int. Cl. 11).
First use during or before February 1967.

SN 295,306. Carrier Corporation, Syracuse, N.Y. Filed Apr. 10, 1968.

Carrier

Owner of Reg. Nos. 267,368, 553,098, and others.
For Compressors Used With Air Conditioning Equipment (Int. Cl. 11).
First use April 1961.

SN 298,810. Crane Co., New York, N.Y. Filed May 22, 1968.

HYDROLEC

For Electric Hydronic Boilers and Controls Therefor Sold as a Unit and Parts Therefor (Int. Cl. 11).
First use Nov. 24, 1967.

SN 303,358. Standard Fuel Engineering Co., Detroit, Mich. Filed July 22, 1968.

CHORE BOY

Owner of Reg. No. 547,305.
For Gas Burners for Use in Coal or Oil Burning Furnaces To Convert the Same to Use of Gas as a Fuel (Int. Cl. 11).
First use on or about Aug. 23, 1946.

SN 316,863. C. Cretors & Co., Chicago, Ill. Filed Jan. 17, 1969.



For Commercial Popcorn Machines (Int. Cl. 11).
First use in or before 1910.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 282,306. United Products Co., Inc., Fort Wayne, Ind. Filed Oct. 11, 1967.



For Slipper Seals, Back-Up Rings, O-Rings, Piston Rings, Scraper Rings, Lip Seals, and Gaskets (Int. Cls. 7 and 17).
First use Sept. 1, 1964.

SN 306,598. Tri-Point Industries, Inc., Commack, N.Y. Filed Sept. 4, 1968.

TRI-PAC

For Seals—Namely, "O" Rings, "V" Rings and Single Turn Backup Rings Using Polytetrafluoroethylene (Int. Cl. 17).
First use Aug. 9, 1968.

SN 310,323. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed Oct. 23, 1968.

G 101

For Tires (Int. Cl. 12).
First use Jan. 4, 1966.

Class 36 — Musical Instruments and Supplies

SN 108,901. Kovo, Podnik Zahranicniho Obchodu Pro Dovoz a Vyvoz Vyrobku Presneho Strojirenstvi, Prague, Czechoslovakia. Filed Nov. 22, 1960.

KOVO

Owner of Czechoslovakian Reg. No. 150,455, dated Apr. 20, 1950.
For Phonographs, Phonograph Records, Mechanical and Electrical Talking Machines, Phonograph Needles, and Parts and Accessories of Said Goods (Int. Cl. 9).

SN 296,889. Tetragrammaton Records, Inc., Beverly Hills, Calif. Filed Apr. 29, 1968.

TETRAGRAMMATON RECORDS

Applicant disclaims the word "Records" apart from the mark as shown.
For Record Album Covers, Phonograph Record Albums, Magnetic Tapes, Cartridge Tapes, and Phonograph Records (Int. Cl. 9).
First use Feb. 8, 1968.

SN 296,890. Tetragrammaton Records, Inc., Beverly Hills, Calif. Filed Apr. 29, 1968.



Applicant disclaims the word "Records" apart from the mark as shown.
For Record Album Covers, Phonograph Record Albums, Magnetic Tapes, Cartridge Tapes, and Phonograph Records (Int. Cls. 9 and 16).
First use Feb. 8, 1968.

SN 316,050. GWP Records, Inc., New York, N.Y. Filed Jan. 8, 1969.

GWP

For Phonograph Records (Int. Cl. 9).
First use Dec. 9, 1968.

SN 316,367. Barone Music Publishers, Inc., La Grange Park, Ill. Filed Jan. 13, 1969.

INTER-REC

For Phonograph Records (Int. Cl. 9).
First use Dec. 28, 1968.

SN 316,402. Audio Applications, Inc., Englewood, N.J. Filed Jan. 13, 1969.

VOICE-MASTER

For Electric Dictating Machines (Int. Cl. 9).
First use December 1967.

SN 317,240. Kas Mo Productions, d.b.a. Kas-Mo, Pennsauken, N.J. Filed Jan. 22, 1969.

VENT

For Grooved Phonograph Records (Int. Cl. 9).
First use on or about Aug. 1, 1968.

Class 37 — Paper and Stationery

SN 299,966. French Paper Company, Niles, Mich. Filed June 7, 1968.

TEX-O-SET

For Printing Paper Sold in Wholesale Lots (Int. Cl. 16).
First use May 1936.

SN 301,642. Reichhold Chemicals, Inc., White Plains, N.Y. Filed June 28, 1968.

METRON

For Overlay for Plywood Comprising Resin Impregnated Paper (Int. Cl. 16).
First use Mar. 6, 1968.

SN 301,769. Rolar, Inc., Williamsport, Pa. Filed July 1, 1968.

ROLAR

For Wrapping Paper—Namely, Material Made of Paper or Synthetic Materials and Used in Packaging and Wrapping (Int. Cl. 16).
First use Feb. 5, 1968.

SN 303,815. Norcross, Inc., New York, N.Y. Filed July 29, 1968.

Norcross

For Stationery—Namely, Writing Paper, Note Paper, and Envelopes (Int. Cl. 16).
First use June 13, 1968.

SN 303,840. John W. Tarn, Pittsburgh, Pa. Filed July 29, 1968.

SEE — CURITY

For Coin Wrappers (Int. Cl. 16).
First use about June 1966.

SN 304,580. Blaisdell, Inc., Bethayres, Pa., by change of name from Blaisdell Pencil Company, Bethayres, Pa. Filed Aug. 7, 1968.

SPREE

For Ink Markers (Int. Cl. 16).
First use Apr. 4, 1968.

SN 304,594. Eagle Pencil Company, Danbury, Conn. Filed Aug. 7, 1968.

COLOROFF

For Lead Pencils (Int. Cl. 16).
First use May 14, 1968.

SN 304,595. Eagle Pencil Company, Danbury, Conn. Filed Aug. 7, 1968.

FLING

For Ink Markers (Int. Cl. 16).
First use Mar. 26, 1968.

SN 304,770. Federated Department Stores, Inc., Columbus, Ohio. Filed Aug. 9, 1968.

GOLD CIRCLE

For Paper and Stationery—Namely, Toilet Tissue, Napkins, Towels, Typewriter Paper, Pads, Notebook Fillers, Tablets, Looseleaf Binders, and Facial Tissues (Int. Cl. 16).
First use Jan. 22, 1968.

SN 304,957. Pacific Adhesives Company, Inc., Hillsboro, Oreg. Filed Aug. 12, 1968.

PACOLAY

For Resin-Impregnated Paper Sheets for Use as Overlay Coatings for Plywood, Particle Board, and Lumber (Int. Cl. 16).
First use Apr. 17, 1968.

SN 305,243. Port Huron Paper Company, Port Huron, Mich Filed Aug. 15, 1968.

PORT HURON

Owner of Reg. Nos. 203,769, 621,575, and others.
For Bond and Manifold Papers (Int. Cl. 16).
First use 1929.

SN 307,041. Pendory Company Limited, Chiyoda-ku, Tokyo, Japan. Filed Sept. 10, 1968.

Onoffree

Owner of Japanese Reg. No. 601,516, dated Nov. 27, 1962.
For Photograph Albums (Int. Cl. 16).

SN 309,571. Hammermill Paper Company, Erie, Pa. Filed Oct. 14, 1968.

OLD CLOISTER

For Writing, Drawing, and Book Paper, Paper for Covers of Pamphlets and Catalogues, and Cardboard (Int. Cl. 16).
First use in or about March 1902.

SN 313,242. Separon Company, Inc., New York, N.Y. Filed Nov. 29, 1968.

SEPARON

For Separable Sheet Used in the Preparation of Stencils (Int. Cl. 16).
First use July 1, 1960.

Class 38 — Prints and Publications

SN 290,418. Tecnifax Corp., Holyoke, Mass. Filed Feb. 6, 1968.

VISU-BOOK

For Integrated Package of Photographic Transparencies (Int. Cl. 9).
First use Dec. 26, 1967.

SN 306,885. Conwed Corporation, St. Paul, Minn. Filed Sept. 9, 1968.

CONWED

For Company Newsletter for Dispensing Information About the Company (Int. Cl. 16).
First use about Nov. 9, 1966.

SN 307,630. The Denver Publishing Company, Denver, Colo. Filed Sept. 18, 1968.

DEAR MRS. MAYFIELD

For Daily Newspaper Column (Int. Cl. 16).
First use at least as early as Apr. 13, 1942.

SN 307,694. United Publishing, Sign and Display Corp., Cleveland, Ohio. Filed Sept. 18, 1968.

SIGN AND DISPLAY INDUSTRY

Owner of Reg. No. 829,978.
For Magazine Published From Time to Time, Usually Monthly, Directed to Persons Concerned With Signs and Displays (Int. Cl. 16).
First use June 1, 1963.

SN 308,266. Amoco Enterprises, Inc., Chicago, Ill. Filed Sept. 26, 1968.

INROADS

For Newsletter (Int. Cl. 16).
First use June 28, 1968.

SN 308,270. Board of Publication of the Methodist Church, Inc., d.b.a. The Graded Press, Nashville, Tenn. Filed Sept. 26, 1968.

MUSIC MINISTRY

For Magazine Published Monthly (Int. Cl. 16).
First use Aug. 20, 1959.

SN 308,306. National Market Reports, Inc., Chicago, Ill. Filed Sept. 26, 1968.

TRUCK BLUE BOOK OFFICIAL USED TRUCK VALUATIONS

Owner of Reg. No. 752,685.
For Periodical Booklets Issued Approximately Twice Yearly (Int. Cl. 16).
First use January 1959.

SN 308,676. Buffalo Courier-Express, Inc., Buffalo, N.Y. Filed Oct. 2, 1968.

COURIER-EXPRESS

Owner of Reg. Nos. 506,805 and 794,826.
For Newspaper (Int. Cl. 16).
First use on or about July 14, 1926.

SN 308,759. A. S. Babcock, d.b.a. A. S. Babcock & Company, San Francisco, Calif. Filed Oct. 3, 1968.

TRAVELORE

For Printed Periodic Travel Guides for Tourists (Int. Cl. 16).
First use Sept. 9, 1968.

SN 308,780. Giltravel Publications, Inc., Miami, Fla. Filed Oct. 3, 1968.

BEAU-MART

For Shopping Guides (Int. Cl. 16).
First use July 31, 1967.

SN 309,608. National Newspaper Syndicate, Inc., Chicago, Ill. Filed Oct. 14, 1968.

ANIMAL CRACKERS

For Comic Strip (Int. Cl. 16).
First use Feb. 15, 1968.

SN 313,516. Phillips Petroleum Company, Bartlesville, Okla. Filed Dec. 3, 1968.

FIBERLINES

For Periodically Produced Brochures for Distribution of Textile Information to the Trade (Int. Cl. 16).
First use at least as early as Oct. 22, 1968.

SN 313,717. Norcross, Inc., New York, N.Y. Filed Dec. 5, 1968.

SEND'N SPIN

For Greeting Cards (Int. Cl. 16).
First use Oct. 30, 1968.

SN 314,431. McGraw-Hill, Inc., New York, N.Y. Filed Dec. 13, 1968.

THE BUSINESS WEEK LETTER

No claim is made to the word "Letter" apart from the mark as shown. Owner of Reg. No. 549,742.
For Weekly Newsletter (Int. Cl. 16).
First use June 26, 1968.

SN 314,543. Educational Development Corporation, Palo Alto, Calif. Filed Dec. 16, 1968.

READALONG

For Series of Books for Teaching Reading (Int. Cl. 16).
First use Jan. 8, 1968.

Class 39 — Clothing

SN 301,726. Eagle Clothes, Inc., New York, N.Y. Filed July 1, 1968.



INN SHOP

Applicant disclaims the word "Shop" apart from the mark as shown. Owner of Reg. Nos. 66,879, 711,919, and others.
For Men's Coats, Topcoats, and Suits (Int. Cl. 25).
First use June 5, 1968; June 1883 as to the design of the eagle.
Subj. to Intf. with SN 307,371.

SN 303,553. White Swan Uniforms, Inc., New York, N.Y. Filed July 24, 1968.

SWAN QUEEN

Owner of Reg. Nos. 194,124 and 813,065.
For Ladies' and Women's Uniforms (Int. Cl. 25).
First use June 25, 1968.

SN 303,554. White Swan Uniforms, Inc., New York, N.Y. Filed July 24, 1968.

SWAN KING

Owner of Reg. Nos. 194,124 and 813,065.
For Men's Uniforms (Int. Cl. 25).
First use June 25, 1968.

SN 303,999. Donald R. Kracke, d.b.a. Rickie Tickie Stickies, Long Beach, Calif. Filed July 31, 1968.

BOTTLE CAPS

The word "Caps" is disclaimed apart from the mark as shown.
For Novelty Felt Hats (Int. Cl. 25).
First use July 17, 1968.

SN 304,085. Glen Raven Mills, Inc., Glen Raven, N.C. Filed Aug. 1, 1968.

CONVERT-ABLES

For Hosiery and a Girdle/Stocking Combination Garment (Int. Cl. 25).
First use July 16, 1968.

SN 305,563. Philadelphia Pants Company, Philadelphia, Pa. Filed Aug. 20, 1968.

J-L-F

For Men's and Boys' Pants (Int. Cl. 25).
First use June 27, 1968.

SN 306,976. Angelica Corporation, St. Louis, Mo. Filed Aug. 28, 1968.

REVERSA-GARB

For Hospital Gowns (Int. Cl. 25).
First use July 22, 1968.

SN 307,098. Harry Fischer Corporation, Philadelphia, Pa. Filed Sept. 11, 1968.

PORT-O-DAWN

For Men's and Boys' Outer Coats (Int. Cl. 25).
First use in or before 1945.

SN 307,352. S.A.R.L. Vetements de Vacances, Paris, France. Filed Sept. 12, 1968.

VdeV

For Clothing for Men, Women and Children—Namely, Slacks, Waist-Coats, Jackets, Lumber-Jackets, Sweaters, Coats and Raincoats, One and Two-Piece Dresses and Skirts (Int. Cl. 25).
First use May 21, 1963; in commerce June 7, 1963.

SN 307,413. Berkshire International Corporation, Reading, Pa. Filed Sept. 16, 1968.

Exactly Yours

For Panty Girdle-Stocking Combination (Int. Cl. 25).
First use Aug. 28, 1968.

SN 307,443. Eliminator Tire & Rubber Co., Inc., Thompsonville, Conn. Filed Sept. 16, 1968.

Eliminator

For Footwear (Int. Cl. 25).
First use Sept. 12, 1968.

SN 307,636. Endicott Johnson Corporation, Endicott, N.Y. Filed Sept. 18, 1968.

Royal Shield

For Safety Shoes (Int. Cl. 9).
First use July 2, 1968.

SN 307,890. Well Made Pants Co., Baltimore, Md. Filed Sept. 20, 1968.

EPPLEE

For Trousers (Int. Cl. 25).
First use in or about March 1968.

SN 308,129. Palais Royal of Houston, Inc., Houston, Tex. Filed Sept. 24, 1968.

MOZELLE

For Girdles (Int. Cl. 25).
First use Aug. 15, 1968.

SN 308,709. Cary Middlecoff, Memphis, Tenn. Filed Oct. 2, 1968.

CARY MIDDLECOFF

For Men's Slacks (Int. Cl. 25).
First use prior to 1960.

SN 308,787. Kayser-Roth Corporation, New York, N.Y. Filed Oct. 3, 1968.

CREW-MASTER

Owner of Reg. Nos. 761,380 and 829,144.
For Men's and Boys' Hosiery (Int. Cl. 25).
First use Sept. 11, 1968.

SN 308,808. Phillips-Van Heusen Corporation, New York, N.Y. Filed Oct. 3, 1968.

THE FOUR ONE SEVEN

Ownership of Reg. No. 856,610.
For Men's and Boys' Shirts, Cuffs, Collars, Pajamas, Sports Shirts, Underwear, Knit Shirts, and Slacks and Sweaters (Int. Cl. 25).
First use Aug. 28, 1968.

SN 308,912. Mister Pants, Inc., New York, N.Y. Filed Oct. 4, 1968.

DUNGEON

For Ladies' Skirts, Slacks, Shirts, Sweaters, and Blouses (Int. Cl. 25).
First use Aug. 29, 1968.

SN 309,486. Sears, Roebuck and Co., Chicago, Ill. Filed Oct. 11, 1968.

THI-TOP

For Hosiery (Int. Cl. 25).
First use on or about June 6, 1968.

SN 312,859. The Lovable Company, Atlanta, Ga. Filed Nov. 22, 1968.

YOUNG SPIRIT

For Women's Foundation Garments (Int. Cl. 25).
First use Nov. 13, 1968.

SN 312,964. Valsey-Bristol Shoe Company Incorporated, Monett, Mo. Filed Nov. 25, 1968.

JJ

Owner of Reg. No. 795,268.
For Shoes (Int. Cl. 25).
First use at least as early as Jan. 9, 1968.

SN 313,031. Silvil Corporation, New York, N.Y. Filed Nov. 25, 1968.

SILVIL

For Pajamas, Night Shirts and Nightgowns for Men, Women and Children; Shirts and Robes for Men and Boys; and Beachwear—Namely, Cabana Sets and Swimsuits for Men, Women and Children, and Swimming Trunks for Men and Boys (Int. Cl. 25).
First use May 2, 1968.

SN 314,019. Fox Run Ltd., New York, N.Y. Filed Dec. 10, 1968.

FOXRUN

For Men's and Women's Wearing Apparel, i.e., Raincoats, Pants, Scarves, Car Coats, Shirts, Vests, Suits, Dresses, Jackets, Skirts, and Sweaters (Int. Cl. 25).
First use June 1, 1965.

SN 314,295. Maidenform, Inc., New York, N.Y. Filed Dec. 12, 1968.

LACE-CONFECTION

Owner of Reg. Nos. 634,886, 791,470, and 838,885.
For Foundation Garments and Lingerie (Int. Cl. 25).
First use Nov. 8, 1968.

SN 314,296. Maidenform, Inc., New York, N.Y. Filed Dec. 12, 1968.

UNDERCLING

Owner of Reg. Nos. 585,345, 855,157, and others.
For Foundation Garments and Lingerie (Int. Cl. 25).
First use Nov. 8, 1968.

SN 314,297. Maidenform, Inc., New York, N.Y. Filed Dec. 12, 1968.

MINI-CLING

Owner of Reg. No. 783,131.
For Foundation Garments and Lingerie (Int. Cl. 25).
First use Nov. 8, 1968.

SN 314,298. Maidenform, Inc., New York, N.Y. Filed Dec. 12, 1968.

STRETCH-CONFECTION

Owner of Reg. Nos. 634,886, 791,470, and 838,885.
For Foundation Garments and Lingerie (Int. Cl. 25).
First use Nov. 8, 1968.

SN 314,299. Maidenform, Inc., New York, N.Y. Filed Dec. 12, 1968.

BRIEFCLING

Owner of Reg. Nos. 819,563 and 824,482.
For Foundation Garments and Lingerie (Int. Cl. 25).
First use Nov. 8, 1968.

SN 314,384. Bobbie Brooks, Incorporated, Cleveland, Ohio. Filed Dec. 13, 1968.

ADDENDA

For Women's and Girls' Apparel—Namely, Dresses, Pants, Skirts, Vests, Sweaters, Blouses, Shorts, and Culottes (Int. Cl. 25).
First use Nov. 5, 1968.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 304,266. Viking Carpets, Inc., New York, N.Y. Filed Aug. 2, 1968.

VOYAGER

For Carpets and Rugs (Int. Cl. 27).
First use Feb. 6, 1967.

SN 311,559. Wyomissing Corporation, Reading, Pa. Filed Nov. 7, 1968.

Talvex

For Adhesive Face Stocks—Namely, Fabric to Which an Adhesive Can Be Applied (Int. Cl. 24).
First use Oct. 25, 1968.

SN 311,756. E. T. Barwick Industries, Inc., Chamblee, Ga. Filed Nov. 12, 1968.

ROYALITE

For Carpets (Int. Cl. 27).
First use May 4, 1966.

SN 311,757. E. T. Barwick Industries, Inc., Chamblee, Ga. Filed Nov. 12, 1968.

WYANDOTTE

For Carpets (Int. Cl. 27).
First use May 25, 1966.

SN 311,758. E. T. Barwick Industries, Inc., Chamblee, Ga. Filed Nov. 12, 1968.

HER HIGHNESS

For Carpets (Int. Cl. 27).
First use June 13, 1966.

SN 312,089. E. T. Barwick Industries, Inc., Chamblee, Ga. Filed Nov. 14, 1968.

BELLE ANNE

For Carpets (Int. Cl. 27).
First use June 15, 1966.

SN 312,094. E. T. Barwick Industries, Inc., Chamblee, Ga. Filed Nov. 14, 1968.

DELBROOK

For Carpets (Int. Cl. 27).
First use May 5, 1966.

SN 312,095. E. T. Barwick Industries, Inc., Chamblee, Ga. Filed Nov. 14, 1968.

DATELINE

For Carpets (Int. Cl. 27).
First use Sept. 15, 1965.

SN 312,097. E. T. Barwick Industries, Inc., Chamblee, Ga. Filed Nov. 14, 1968.

SPARTACUS

For Carpets (Int. Cl. 27).
First use Jan. 29, 1967.

SN 312,098. E. T. Barwick Industries, Inc., Chamblee, Ga. Filed Nov. 14, 1968.

ZINNIAS

For Carpets (Int. Cl. 27).
First use May 27, 1965.

SN 312,099. E. T. Barwick Industries, Inc., Chamblee, Ga. Filed Nov. 14, 1968.

ROYAL HIGHNESS

For Carpets (Int. Cl. 27).
First use Dec. 12, 1967.

SN 312,100. E. T. Barwick Industries, Inc., Chamblee, Ga. Filed Nov. 14, 1968.

TAMARISK

For Carpets (Int. Cl. 27).
First use Nov. 21, 1967.

SN 312,101. E. T. Barwick Industries, Inc., Chamblee, Ga. Filed Nov. 14, 1968.

NITELIFE

For Carpets (Int. Cl. 27).
First use Nov. 16, 1966.

SN 312,104. E. T. Barwick Industries, Inc., Chamblee, Ga. Filed Nov. 14, 1968.

HAVEN MANOR

For Carpets (Int. Cl. 27).
First use Dec. 9, 1965.

SN 312,105. E. T. Barwick Industries, Inc., Chamblee, Ga. Filed Nov. 14, 1968.

TIMES SQUARE

For Carpets (Int. Cl. 27).
First use Nov. 9, 1966.

SN 312,106. E. T. Barwick Industries, Inc., Chamblee, Ga. Filed Nov. 14, 1968.

TERRASET

For Carpets (Int. Cl. 27).
First use Sept. 29, 1967.

SN 312,119. E. T. Barwick Industries, Inc., Chamblee, Ga. Filed Nov. 14, 1968.

MOON VALLEY

For Carpets (Int. Cl. 27).
First use Nov. 4, 1967.

SN 312,121. E. T. Barwick Industries, Inc., Chamblee, Ga. Filed Nov. 14, 1968.

VICEROY

For Carpets (Int. Cl. 27).
First use May 18, 1967.

SN 312,125. E. T. Barwick Industries, Inc., Chamblee, Ga. Filed Nov. 14, 1968.

SUNPOINT

For Carpets (Int. Cl. 27).
First use May 10, 1967.

SN 312,126. E. T. Barwick Industries, Inc., Chamblee, Ga. Filed Nov. 14, 1968.

LUMINOUS

For Carpets (Int. Cl. 27).
First use May 4, 1967.

SN 312,127. E. T. Barwick Industries, Inc., Chamblee, Ga. Filed Nov. 14, 1968.

PRIVATE PARTY

For Carpets (Int. Cl. 27).
First use Nov. 9, 1966.

SN 314,499. R. W. Norman Company, Inc., d.b.a. R. W. Norman Co., Norman's, and Norman's of Salisbury, Salisbury, N.C. Filed Dec. 16, 1968.

NORMAN'S

Owner of Reg. No. 632,931.
For Custom Draperies and Bedspreads (Int. Cl. 24).
First use Jan. 26, 1955.

Class 44—Dental, Medical, and Surgical Appliances

SN 277,895. Kas Manufacturing Co., Inc., New York, N.Y. Filed Aug. 9, 1967.

TeenSteem

For Electrically Operated Facial Sauna (Int. Cl. 11).
First use Apr. 10, 1967.

SN 291,038. Computer Instruments Corporation, Hempstead, N.Y. Filed Feb. 14, 1968.

Tel EK

For Portable Electrocardiograph Data Recording and Transmitting Equipment (Int. Cl. 10).
First use Dec. 29, 1967.

SN 291,768. The Pelton & Crane Company, Charlotte, N.C. Filed Feb. 23, 1968.

THE EXECUTIVE

The word "The" is disclaimed apart from the mark as a whole without waiving any of applicant's common law rights thereto.
For Dental Operatory Which Consists of a Cabinet Unit Having the Dental Work Implements and Accessories Used by a Dentist (Int. Cl. 10).
First use Dec. 15, 1967.

SN 300,751. Technical Manufacturing Corporation, Lincoln, Nebr. Filed June 18, 1968.

REHAB-CHAIR

For Wheel Chairs—Namely, Adjustable Wheel Chairs and Wheel Chairs That Can Be Converted Into a Number of Positions and Into Beds, and Accessories Therefor (Int. Cl. 12).
First use November 1966.
Subj. to Intf. with SN 301,590.

SN 305,254. Selectmagic Corp., Dallas, Tex. Filed Aug. 15, 1968.

SELECTMAGIC

For Electronic Devices for Applying Electric Impulses to the body (Int. Cl. 10).
First use July 29, 1968.

SN 311,674. Espe Fabrik Pharmazeutischer Praparate GmbH, Seefeld, Oberbayern, Germany. Filed Nov. 8, 1968.

DURELON

For Materials for Dental Uses—Namely, Dental Cement for Crowns, Bridges and Inlays and Material for Lining and and Filling Tooth Cavities (Int. Cl. 5).
First use Aug. 27, 1968; in commerce Sept. 12, 1968.

SN 311,924. Princo Instruments, Inc., Southampton, Pa. Filed Nov. 12, 1968.

EKONOTRODE

For Equipment for Electrocardiography and for Cardiac Monitoring—Namely, EKG Electrodes; Adhesive Discs; Adapter Cables; Re-Usable Adhesive Electrodes; Color-Coded Snap-On Cables; and EKG Kits Comprising a Plurality of the Foregoing (Int. Cl. 10).
First use on or about May 1, 1968.

SN 312,407. Task Corporation, Anaheim, Calif. Filed Nov. 18, 1968.

SERVOX

For Demand Valve Oxygen Administration Apparatus for Medical Uses (Int. Cl. 10).
First use August 1968.

SN 313,024. Plastojet Corporation, New York, N.Y. Filed Nov. 25, 1968.

PORTA-PICK

For Portable Appliances for Oral Hygiene Utilizing a Jet of Water for Massaging Gums and Cleaning Spaces Adjacent the Teeth (Int. Cl. 10).
First use Sept. 16, 1968.

SN 314,137. Curiel Products Corporation, d.b.a. Kiva Dental Mfg. Co., Phoenix, Ariz. Filed Dec. 11, 1968.

KIVA-LINE

For Denture Reliner (Int. Cl. 5).
First use Nov. 26, 1968.

SN 314,404. Becton, Dickinson and Company, East Rutherford, N.J. Filed Dec. 13, 1968.

FORMOCATH

For Medical Grade Polyethylene Tubing (Int. Cl. 10).
First use on or about Aug. 11, 1967.

SN 314,405. Becton, Dickinson and Company, East Rutherford, N.J. Filed Dec. 13, 1968.

SAFEGUIDE

For Wire for Use in Medical Procedures Requiring Flexibility and Fine Tolerances (Int. Cl. 10).
First use on or about Jan. 5, 1968.

SN 314,687. Tomy International Orthodontic Distributors, Inc., Buffalo, N.Y. Filed Dec. 17, 1968.

ORTHO TOMY

For Orthodontic Bands, Orthodontic Brackets, Buccal Tubes, Lingual Buttons, Orthodontic Elastics and Laboratory Attachments (Int. Cl. 10).
First use Nov. 14, 1968.

SN 314,688. Tomy International Orthodontic Distributors, Inc., Buffalo, N.Y. Filed Dec. 17, 1968.

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For Orthodontic Bands, Orthodontic Brackets, Buccal Tubes, Lingual Buttons, Orthodontic Elastics and Laboratory Attachments (Int. Cl. 10).
First use Nov. 14, 1968.

SN 314,970. Handelsselskabet Simonsen & Weels Eftf. A/S, Albertslund, Denmark. Filed Dec. 20, 1968.

MODURA

For Rails and Guides for Medical and Surgical Equipment (Int. Cl. 10).
First use June 9, 1966; in commerce June 9, 1966.

SN 314,977. Arthur E. Look, Inc., West Roxbury, Mass. Filed Dec. 20, 1968.

SURGAMID

For Sutures (Int. Cl. 10).
First use Aug. 9, 1968.

SN 315,034. Bio-Engineering, Inc., d.b.a. Berkeley Tonometer Company, Berkeley, Calif. Filed Dec. 23, 1968.

VIBRODILATOR

For Instrument for Dilating the Cervix of the Uterus (Int. Cl. 10).
First use Dec. 9, 1968.

SN 315,203. CMP Industries, Inc., Albany, N.Y. Filed Dec. 26, 1968.

VERNO

For Acrylic Resin for Dentures (Int. Cl. 5).
First use November 1936.

Class 45—Soft Drinks and Carbonated Waters

SN 272,644. Tahitian Foods, Inc., Studio City, Calif. Filed May 29, 1967.

CAPTAIN COOK'S Instant

The word "Instant" is disclaimed apart from the balance of the mark as shown.
For Nonalcoholic Mix To Be Used in the Preparation of Alcoholic Cocktails (Int. Cl. 32).
First use May 4, 1967.

SN 292,503. The Seven-Up Company, St. Louis, Mo. Filed Mar. 5, 1968.

WET & WILD

Applicant disclaims the word "Wet" apart from the mark as shown.
For Soft Drinks (Int. Cl. 32).
First use Feb. 1, 1966.

SN 298,636. The Southland Corporation, Dallas, Tex. Filed May 20, 1968.

THE GLOB

For Fruit Flavored, Semi-Frosen Soft Drinks (Int. Cl. 32).
First use at least as early as Mar. 1, 1968.

Class 46—Foods and Ingredients of Foods

SN 246,180. Johnston Foods, Inc., Glendale, Calif. Filed May 20, 1966.

FRUIT SUNDAE

The word "Fruit" is disclaimed apart from the mark as shown.
For Food Product Consisting of Low Fat Yogurt and Fruit (Int. Cl. 29).
First use Apr. 17, 1964.

SN 249,509. Joseph Culpepper, Opa-Locka, Fla. Filed July 5, 1966.



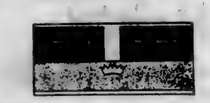
For Barbecue Sauce (Int. Cl. 30).
First use Dec. 12, 1954.

SN 252,562. Food Guild Corporation, Evanston, Ill. Filed Aug. 17, 1966.



The drawing is lined for the colors red and green, but no claim is made to color as a feature of the mark.
For Canned Vegetable Juices, Olives, Pickles, Salad Dressing, Canned Vegetables, and Canned Sea Foods (Int. Cls. 29 and 32).
First use 1951.

SN 258,321. Otto Roth and Co., Inc., New York, N.Y. Filed Nov. 9, 1966.



For Cheese (Int. Cl. 29).
First use July 13, 1965.

SN 267,310. Snokist Growers, by change of name from Blue Ribbon Big Y Growers, Diamond Fruit Growers, Inc., Snookum Packers Association, Wenoka Federation, Yakima, Wash. Filed Mar. 22, 1967.



The word "Apple" is disclaimed apart from the mark as shown.
For Fresh Apples (Int. Cl. 31).
First use July 3, 1936.

SN 268,956. Godiva S.p.r.l., Brussels, Belgium. Filed Apr. 12, 1967.

GODIVA
Chocolatier de Belgique

Applicant disclaims any exclusive rights in the words "Chocolatier de Belgique" apart from the mark as shown. The English translation of the mark is "Godiva The Chocolate Maker of Belgium." Owner of U.S. Reg. No. 836,376.
For Candy (Int. Cl. 30).
First use Jan. 3, 1967; in commerce Jan. 3, 1967.

SN 271,688. Borden, Inc., New York, N.Y., by change of name from The Borden Company, New York, N.Y. Filed May 17, 1967.



Applicant disclaims the word "Corn" apart from the mark as shown.
For Bite-Size Cornmeal Snack Food Product (Int. Cl. 30).
First use Mar. 1, 1967.

SN 280,593. Independent Grocers' Alliance Distributing Co., Chicago, Ill. Filed Sept. 18, 1967.

TABLEFRESH

No claim is made to the exclusive right to the use of the word "Fresh" apart from the mark as shown. Owner of Reg. Nos. 667,181 and 796,837.
For Fresh Fruits and Vegetables—Namely, Celery, Lemons, Apples, Oranges, Grapefruit, Lettuce, Carrots, Spinach, Kale, Potatoes, Onions, and Cranberries (Int. Cl. 31).
First use May 1960.

SN 281,144. Vera-Tex Products, Inc., Forth Worth, Tex. Filed Sept. 25, 1967.

MARINITOS

For Sea Food Flavored Snack Items Having Mackerel, Shrimp, and Flour as the Principal Ingredients (Int. Cl. 30).
First use Sept. 1, 1967.

SN 288,715. Russell Stover Candies, Inc., Kansas City, Mo. Filed Oct. 30, 1967.

SATINS AND CHIPS

For Candy (Int. Cl. 30).
First use during November 1961.

SN 284,897. The Dykem Company, St. Louis, Mo. Filed Nov. 15, 1967.

HEXIE

For Artificial Sweetener for Food Use (Int. Cl. 1).
First use Nov. 6, 1967.

SN 285,846. Penn Maid Foods, Inc., Philadelphia, Pa. Filed Nov. 21, 1967.

CALORIE COUNTERS

For Cottage Cheese (Int. Cl. 29).
First use Nov. 14, 1967.

SN 286,883. Miles Laboratories, Inc., Elkhart, Ind., assignee of Marschall Dairy Laboratory, Inc., Madison, Wis. Filed Dec. 13, 1967.

MARSCHALL

Owner of Reg. Nos. 724,083 and 807,129.
For Bacterial Cultures, Starter Media, Enzymes, Food Colors and Enzyme Treated Preparations, All for Use in the Commercial Manufacturing and Processing of Dairy, Bakery, Meat, Confectionery and Snack Food Products (Int. Cls. 1 and 2).
First use at least as early as Apr. 1, 1957.

SN 289,195. Ibel S/A. Conservas Alimenticias, Sorocaba- Sao Paulo, Brazil. Filed Jan. 9, 1969.

IBEL

For Heart of Palms or Palmito (Int. Cl. 29).
First use Mar. 21, 1956; in commerce Aug. 31, 1967.

SN 289,952. Aloro Food Products Limited, Cooksville, Ontario, Canada. Filed Jan. 31, 1968.

CAESAR'S CHOICE

Owner of Canadian Reg. No. 147,259, dated Sept. 23, 1966.
For Refrigerated Pizza Pies (Int. Cl. 30).

SN 290,014. Prodotti Alimentary G. Arrigoni & C. S.p.A., d.b.a. Prodotti Alimentary G. Arrigoni & C., Cesena, Italy. Filed Jan. 31, 1968.

ARRIGONI

For Canned Fruit Cocktail in Syrup, Apricots in Syrup, Cherries in Light Syrup, Pears in Syrup, Peaches in Syrup, Sliced Peaches in Syrup, Tomato Juice, Italian Peeled Plum Tomatoes, Rice With Meat Sauce, Ravioli in Tomato Sauce, Noodles in Tomato Sauce, Tomato and Cheese Sauce, Tomato Sauce With Clams, Boiled White Beans, Asparagus au Naturel, Green Peas au Naturel, Green Beans, Capers in White Wine Vinegar, Small Artichokes in Olive Oil, Olives in Brine, Green Peppers in Wine Vinegar, Mixed Pickles in White Wine Vinegar, Antipasto, Hams and Fish (Int. Cls. 29, 30, and 32).
First use 1917; in commerce 1917.

SN 290,174. Keebler Company, Elmhurst, Ill. Filed Feb. 2, 1968.

TWIST 'N CRISP

The word "Crisp" is disclaimed except as a part of the combination word mark shown.
For Crackers (Int. Cl. 30).
First use Jan. 8, 1968.

SN 291,259. Fishbrook Amalgamated Pty. Ltd., Mount Gambier, South Australia. Filed Feb. 16, 1968.



For Prepared Fish Products—Namely, Fish, Shell-Fish (Crustaceans), and Molluses (Int. Cl. 29).
First use at least as early as December 1961; in commerce at least as early as January 1967.

SN 291,610. Jewett & Sherman Co., d.b.a. Holsum Foods, Waukesha, Wis. Filed Feb. 21, 1968.

DIZZY

For Peanut Butter and Jelly Spread (Int. Cl. 29).
First use on or about Jan. 26, 1968.

SN 292,712. Revere Sugar Refinery, Charlestown, Mass. Filed Mar. 7, 1968.



For Sugar (Int. Cl. 30).
First use Aug. 15, 1967.

SN 292,982. United States Tobacco Company, New York, N.Y. Filed Mar. 11, 1968.



The drawing is lined for the colors red and brown. Owner of Reg. No. 782,537.
For Candy Bars Wrapped for Retail Sale (Int. Cl. 30).
First use February 1966.

SN 293,140. Honey's Incorporated, Charlotte, N.C. Filed Mar. 13, 1968.

HONEY'S

For Fried Chicken, Sandwiches, Coffee, Milk, and Tea (Int. Cls. 29 and 30).
First use in or about January 1943.

SN 293,386. Horn & Hardart Baking Co., Philadelphia, Pa. Filed Mar. 15, 1968.

LESS WORK FOR MOTHER

Owner of Reg. Nos. 505,906 and 534,551.
For Fresh Meat Products—Namely, Beef Pies, Chicken Pies, Salisbury Steaks, Vienna Roast (Meat Loaf), Chicken Croquettes, and Creamed Chipped Beef; Packaged Luncheon Meats—Namely, Frankfurters, Ham Slices, and Bacon; Frozen Meat Products—Namely, Beef and Chicken Pies, Beef Stew, Chicken a la King, Beef Burgundy, Frozen Dinners Such as Chicken a la King and Vienna Roast With Vegetables, and Lamb Stew; Frozen and Fresh Fish Products—Namely, Fish Cakes, Crab Cakes, Fried Codfish, Salmon Cutlets, and Tuna Fish Cutlets; Frozen and Fresh Vegetables—Namely, Creamed Spinach, Baked Beans, Mashed Sweet Potatoes and Mashed Turnips; Fresh Salads—Namely, Potato Salad, Cole Slaw, Health Salad, Pickled Cucumbers, Tossed Green Salad, Creamed Cabbage, and Raisin and Carrot Salad; Desserts—Namely, Rice Pudding, Tapioca Pudding, Vanilla Pudding, Chocolate Pudding, and Gelatin; Bakery Products—Namely, Bread, Rolls, Danish Pastries, Layer Cakes, Loaf Cakes, Cup Cakes, Specialty Cakes, and Fruit and Custard Pies (Int, Cls. 29, 30, and 31).
First use Dec. 8, 1925.

SN 293,452. Alroy Packing Co., San Francisco, Calif. Filed Mar. 18, 1968.

SILVER Castle

For Caviar, Horseradish, Tartar Sauce, Cocktail Sauce, Crab Cocktail, Shrimp Cocktail, Oyster Cocktail, Pickled Herring in Jars, and Louis Dressing (a Mayonnaise Based Dressing to Which Is Added Condiments Such as Catsup, Pickles, Chopped Olives, Onions and Parsley (Int. Cls. 29 and 30).
First use June 15, 1947.

SN 294,592. Carnation Company, Los Angeles, Calif. Filed Apr. 1, 1968.

CONTADINA

The mark is an Italian word for "peasant woman" or "country dance." Owner of Reg. Nos. 124,957, 565,166, and 585,012.
For Tomato Salad (Int. Cl. 29).
First use April 1967.

SN 295,123. Dairyland Food Laboratories, Inc., Waukesha, Wis. Filed Apr. 8, 1968.

REGALASE

For Milk Clotting Enzyme Blend for Food Manufacturing (Int. Cl. 1).
First use Mar. 11, 1968.

SN 295,227. M. H. Greenebaum, Inc., New York, N.Y. Filed Apr. 9, 1968.

QUEEN KRISTINA

For Canned Meats—Namely, Hams (Int. Cl. 29).
First use Dec. 18, 1967.

SN 295,492. American Biscuit Company, d.b.a. Danish Cookie Co., Passaic, N.J. Filed Apr. 12, 1968.

DANISH
HOME STYLE

Applicant disclaims the words "Danish" and "Home Style" separate and apart from the mark as shown, reserving unto itself all common law rights which it may have or acquire in said terms.
For Sugar Wafers and Cookies (Int. Cl. 30).
First use Oct. 31, 1967.

SN 296,869. Raskas Products, Inc., St. Louis, Mo. Filed Apr. 29, 1968.

SOUR WONDER

Applicant makes no claim to the word "Sour" apart from the mark as shown.
For Non-Butterfat Dressing (Int. Cl. 29).
First use Apr. 27, 1967.

SN 297,149. The Quaker Oats Company, Chicago, Ill. Filed May 2, 1968.

LUV

For Cat Food (Int. Cl. 31).
First use Mar. 7, 1968.

SN 298,374. Whitney-Fidalgo Seafoods, Inc., Seattle, Wash. Filed May 16, 1968.

RUBINSTEIN'S

For Seafood—Namely, Salmon, Tuna, and Crab (Int. Cl. 29).
First use August 1960.

SN 298,730. Mort R. Kleval, d.b.a. Kleval Co., Columbus, Ohio. Filed May 21, 1968.

JELLY SEAL PRODUCTS

The word "Products" and the representation of the goods are disclaimed apart from the mark as shown.
For Frozen Dairy and Non-Dairy Confection—Namely, Ice Cream Bars, Fudge Bars, Push-Ups, Ice Cream in Containers, Ice Milk, and Flavored Frozen Ice Confections on a Stick (Int. Cl. 30).
First use Apr. 9, 1968.

SN 299,883. Stoppenbach Sausage Company, d.b.a. W. F. Thiele Company, Jefferson, Wis. Filed June 6, 1968.

GRILLIES

For Meat Sausage Composed of Beef, Pork or Veal (Int. Cl. 29).
First use Dec. 24, 1951.

SN 300,636. Wayne Candies, Inc., Fort Wayne, Ind. Filed June 17, 1968.

wayne

Owner of Reg. Nos. 514,365, 779,562, and others.
For Candies (Int. Cl. 30).
First use on or before Feb. 12, 1968.

SN 302,331. Holiday Frosted Food Company, d.b.a. The Serv-A-Nation Corp., Philadelphia, Pa. Filed July 9, 1968.

SERV-A-NATION

For Frozen Prepared Meat Dishes (Int. Cl. 29).
First use Apr. 16, 1968.

SN 302,527. Saucy Susan Products, Inc., Briarcliff Manor, N.Y. Filed July 11, 1968.

THE SAUCE FOR LOVERS

Applicant disclaims exclusive rights in the word "Sauce" apart from the mark as shown.
For Sauce for Use on Meats, Poultry, and Fish, and as a Condiment (Int. Cl. 30).
First use May 3, 1968.

SN 302,690. Ready Italy Foods Co., Fargo, N. Dak. Filed July 15, 1968.

READY ITALY

For Combination Packages for Making Pizzas, the Pizzas Being Packaged and Frozen (Int. Cl. 30).
First use June 3, 1968.

SN 303,221. Perry H. Chipurnoi Inc., Long Island City, N.Y. Filed July 22, 1968.

CHIPS

Owner of Reg. Nos. 721,456 and 816,409.
For Licorice Candy (Int. Cl. 30).
First use Aug. 25, 1959.

SN 303,314. Karo's Seafoods, Inc., Los Angeles, Calif. Filed July 22, 1968.

Karo

For Fresh and Frozen Fish (Int. Cl. 29).
First use approximately May 7, 1962.

SN 304,497. Pangburn Company, Inc., Fort Worth, Tex. Filed Aug. 6, 1968.

COFFEE-N-CREME

Owner of Reg. No. 779,665.
For Candy (Int. Cl. 30).
First use Apr. 5, 1968.

SN 305,797. Amurol Products Company, Naperville, Ill. Filed Aug. 23, 1968.

Amurol

Owner of Reg. Nos. 545,249 and 690,630.
For Chewing Gum, Candy, and Cookies (Int. Cl. 30).
First use Jan. 12, 1950.

SN 309,204. Mead Johnson & Company, Evansville, Ind. Filed Oct. 9, 1968.

NUTRAMENT

Owner of Reg. No. 713,626.
For Food Product, in Powdered Form, To Be Mixed With Milk To Make a Nutritionally Complete Food Beverage (Int. Cl. 5).
First use on or prior to July 17, 1968.

SN 309,339. R. J. Reynolds Foods, Inc., New York, N.Y. Filed Oct. 10, 1968.

KANT-KWIT

For Snack Food Products—Namely Candied Popcorn (Int. Cl. 30).
First use July 2, 1968.

SN 314,034. Ralston Purina Company, St. Louis, Mo. Filed Dec. 10, 1968.



For Breakfast Cereal (Int. Cl. 30).
First use Nov. 7, 1968.

SN 314,683. Ralston Purina Company, St. Louis, Mo. Filed Dec. 17, 1968.

TEMP-R-RATED

For Chicken Feed (Int. Cl. 31).
First use Nov. 29, 1968.

SN 314,685. Ralston Purina Company, St. Louis, Mo. Filed Dec. 17, 1968.

PRO-LAY

For Poultry Feed (Int. Cl. 31).
First use March 1964.

SN 314,754. Co-Op Vegetable Distributors, Inc., d.b.a. Co-Op Vegetable Distrs., Inc., Glendale, Ariz. Filed Dec. 18, 1968.

Roadrunner

For Fresh Vegetables (Int. Cl. 31).
First use Nov. 20, 1968.

SN 315,137. Grain Processing Corporation, Muscatine, Iowa. Filed Dec. 24, 1968.

MALTRIN

For Hydrolized Cereal Solids (Int. Cl. 30).
First use on or about Aug. 9, 1968.

Class 47 — Wines

SN 279,995. United Vintners, Inc., d.b.a. Italian Swiss Colony, San Francisco, Calif. Filed Sept. 11, 1967.

VINO PRIMO

No claim is made to the word "Vino" apart from the mark as shown.
For Wines (Int. Cl. 33).
First use Aug. 8, 1967.
Subj. to Intf. with SN 300,539.

SN 285,762. Remy-Pannier, Saint Hilaire-Saint-Florent, France. Filed Nov. 28, 1967.

CHAMPMESLE

Owner of French Reg. No. 3,265, dated Sept. 2, 1964 (Saumur); Natl. Inst. No. 232,069.
For Wine (Int. Cl. 33).

SN 313,232. Guild Wine Co., d.b.a. Guild Wine Company, Lodi, Calif. Filed Nov. 29, 1968.

RUBAIYAT

For Wines (Int. Cl. 33).
First use May 25, 1935.

Class 48 — Malt Beverages and Liquors

SN 287,436. Kiku-Masamune Sake Brewing Co., Ltd., Higashinada-ku, Kobe, Hyogo Prefecture, Japan. Filed Dec. 22, 1967.

KIKU SAKE

The word "Kiku" means chrysanthemum. The word "Sake" is disclaimed apart from the mark as shown. Owner of U.S. Reg. Nos. 320,161 and 617,273.
For Japanese Brewed Sake (Int. Cl. 33).
First use Nov. 11, 1966; in commerce Nov. 11, 1966.

SN 287,437. Kiku-Masamune Sake Brewing Co., Ltd., Higashinada-ku, Kobe, Hyogo Prefecture, Japan. Filed Dec. 22, 1967.

KIKU

The English translation of the word "Kiku" is "chrysanthemum." Owner of U.S. Reg. Nos. 320,161 and 617,273.
For Japanese Brewed Sake (Int. Cl. 33).
First use Nov. 11, 1966; in commerce Nov. 11, 1966.

SN 287,438. Kiku-Masamune Sake Brewing Co., Ltd., Higashinada-ku, Kobe, Hyogo Prefecture, Japan. Filed Dec. 22, 1967.



The Japanese characters are translated as follows: The characters on the left are transliterated to mean "Kunaicho Go-Yo-Tatsu," which means "purveyors to the Imperial Household Agency"; and the characters on the right transliterate to "Nada No Ki-Ippon," which means "pure Nada rice wine." "Nada" is a place famous for its production of rice wine. The word "Kiku" means "chrysanthemum"; and the word "Masamune" is the name of a famous Japanese sword maker, deceased. No claim is made to either of the Japanese characters or "Japanese Sake," apart from the mark as shown. Owner of U.S. Reg. Nos. 320,161 and 617,273.
For Japanese Brewed Sake (Int. Cl. 33).
First use Nov. 11, 1966; in commerce Nov. 11, 1966.

SN 300,447. G. Heileman Brewing Company, Inc., La Crosse, Wis. Filed June 14, 1968.

JUNIOR

Owner of Reg. No. 502,972.
For Beer (Int. Cl. 32).
First use Feb. 19, 1940.

Class 49 — Distilled Alcoholic Liquors

SN 308,427. Mediterranean Importing Co., Inc., Long Island City, N.Y. Filed Sept. 30, 1968.

CIAO

The word "Ciao" means both "hello" and "goodbye" in the English language.
For Liqueurs (Int. Cl. 33).
First use Aug. 23, 1968.

Class 50 — Merchandise Not Otherwise Classified

SN 308,291. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed Sept. 26, 1968.

BRAVO

For Offset Printing Blankets (Int. Cl. 16).
First use Feb. 12, 1968.

Class 51 — Cosmetics and Toilet Preparations

SN 287,514. Bebe Distributing International, Inc., Shreveport, La. Filed Dec. 26, 1967.



For Perfume, Toilet Water, Cologne, Bath Oil, and Perfume Oil (Int. Cl. 3).
First use at least as early as Nov. 2, 1967.

SN 290,076. Clairol Incorporated, New York, N.Y. Filed Feb. 1, 1968.

SKIN SELTZER

Applicant disclaims the word "Skin" apart from the mark as shown.
For Skin Freshener (Int. Cl. 3).
First use Dec. 4, 1967.

SN 292,648. Lancôme S.A., Paris, France. Filed Mar. 7, 1968.

BIENFAIT DU MATIN

The English translation of "Bienfait du Matin" is "morning blessing." Owner of French Reg. No. 723,872, dated Apr. 14, 1967.
For Face Creams and Skin Lotion (Int. Cl. 3).

SN 296,608. Hortense McNeil, d.b.a. Poly-Tropic, Bronx, N.Y. Filed Apr. 16, 1968.

POLY-TROPIC

For Hair and Scalp Conditioner (Int. Cl. 3).
First use July 5, 1958.

SN 297,528. Bristol-Myers Company, New York, N.Y. Filed May 7, 1968.

NAKED IN THE RAIN

For Perfume and Cosmetic-Bath Oil (Int. Cl. 3).
First use Apr. 1, 1968.

SN 300,574. Foremost-McKesson, Inc., d.b.a. Norcliff Laboratories, New York, N.Y. Filed June 17, 1968.

ORABRITE

Owner of Reg. Nos. 246,008, 765,643, and others.
For Denture Cleanser (Int. Cl. 3).
First use at least as early as June 11, 1968.

SN 301,118. Yardley of London, Inc., New York, N.Y. Filed June 21, 1968.

WHITE LAVENDER

Applicant disclaims the word "Lavender" apart from the mark as shown.
For Cologne, Talc With Deodorant, Bubble Bath, and Emollient Bath Oil (Int. Cls. 3 and 5).
First use June 4, 1968.

SN 304,220. Helene Curtis Industries, Inc., Chicago, Ill. Filed Aug. 2, 1968.

HEAT'S ON

For Hair Conditioner Dispensed as a Hot Foam (Int. Cl. 3).
First use on or about June 21, 1968.

SN 305,342. Merle Norman Cosmetics, Inc., Los Angeles, Calif. Filed Aug. 16, 1968.



For Nail Enamel Fixative (Int. Cl. 3).
First use May 22, 1968.

SN 305,395. Bristol-Myers Company, New York, N.Y. Filed Aug. 19, 1968.

BOUYANT

For Hair Groom and Conditioner (Int. Cl. 3).
First use May 9, 1968.

SN 305,479. The Nestle-LeMur Company, New York, N.Y. Filed Aug. 19, 1968.

PRETTY NEAT

For Hair Toning Preparation (Int. Cl. 3).
First use July 30, 1968.

SN 305,993. Summit Laboratories, Inc., Indianapolis, Ind. Filed Aug. 26, 1968.



For Hair Glossifier and Conditioner (Int. Cl. 3).
First use July 21, 1968.

SN 309,504. Mark Anthony Drug Co., Inc., Miami, Fla. Filed Oct. 14, 1968.

BERMUDA TAN

No claim is made for the word "Tan" apart from the mark as shown.
For Sun Tan Preparations (Int. Cl. 3).
First use July 1968.

SN 309,565. Foremost-McKesson, Inc., d.b.a. McKesson Laboratories, New York, N.Y. Filed Oct. 14, 1968.

BRACE

Owner of Reg. Nos. 357,523 and 442,752.
For Toothpaste (Int. Cl. 3).
First use at least as early as Oct. 4, 1968.

SN 310,829. The J. B. Williams Company, Inc., New York, N.Y. Filed Oct. 30, 1968.

SUN-FLUFF BY SKOL

Owner of Reg. Nos. 314,006, 343,554, and 542,734.
For Suntan Cream (Int. Cl. 3).
First use Apr. 26, 1954

SN 314,489. Colgate-Palmolive Company, New York, N.Y. Filed Dec. 16, 1968.

CROWNING TOUCH

For Hair Conditioner and Wave Set (Int. Cl. 3).
First use Nov. 12, 1968.

SN 314,490. Colgate-Palmolive Company, New York, N.Y. Filed Dec. 16, 1968.

SEX APPEAL

Owner of Reg. Nos. 715,553, 796,121, and others.
For Dentifrice (Int. Cl. 3).
First use Nov. 12, 1968.

SN 314,491. Colgate-Palmolive Company, New York, N.Y. Filed Dec. 16, 1968.

GRENADIER

Owner of Reg. No. 326,676.
For Hair Dressing Preparation (Int. Cl. 3).
First use Nov. 12, 1968.

SN 315,004. The Gillette Company, d.b.a. The Toni Company, Chicago, Ill. Filed Dec. 23, 1968.

LEKTRO SET

No claim is made to any exclusive right to the word "Set," apart from the mark as shown.
For Heat-Sensitive Hair Setting Sprays (Int. Cl. 3).
First use at least as early as Dec. 1, 1967.

SN 315,356. Flame of Hope, Inc., Hyannisport, Mass. Filed Dec. 30, 1968.

NEW FLAME

For Perfume (Int. Cl. 3).
First use Nov. 14, 1968.

SN 315,521. Chesebrough-Pond's Inc., New York, N.Y. Filed Jan. 2, 1969.

CINDY

For Nail Polish and Lipsticks (Int. Cl. 3).
First use Dec. 3, 1968.

Class 52 — Detergents and Soaps

SN 253,528. Heatbath Corporation, Springfield, Mass. Filed Aug. 31, 1966.

DURASTRIP

For Industrial Stripping Compounds for Stripping Paint, Lacquer, Japan, Porcelain Enamel, and Other Coatings From Metal Objects (Int. Cl. 1).
First use Sept. 2, 1959.

SN 282,528. Arizona Agrochemical Corporation, Phoenix, Ariz. Filed Oct. 16, 1967.

P-S-R

For Combined Cleaning and Stain Removing Chemicals for Use in Swimming Pools (Int. Cl. 3).
First use June 1, 1967.

SN 287,718. Berwyn Industries Corporation, Orlando, Fla. Filed Dec. 28, 1967.

SAFE POWER

The word "Safe" is disclaimed from the mark as shown without waiving any of applicant's common law rights.
For Household Cleaner (Int. Cl. 3).
First use Dec. 14, 1967.

SN 290,271. The Firestone Tire & Rubber Company, Akron, Ohio. Filed Feb. 5, 1968.

PERMA LASTIC

Owner of Reg. Nos. 615,629 and 647,281.
For Preparations for Cleaning Wall Tiles (Int. Cl. 3).
First use July 21, 1967.

SN 293,467. Bestmart, Inc., Cleveland, Ohio. Filed Mar. 18, 1968.

KWIK WAY

Owner of Reg. No. 567,839.
For Liquid Detergents for Washing Dishes and Fine Fabrics (Int. Cl. 3).
First use September 1959.

SN 297,529. Bristol-Myers Company, New York, N.Y. Filed May 7, 1968.

NAKED IN THE RAIN

For Hair Shampoo (Int. Cl. 3).
First use Apr. 1, 1968.

SN 297,584. Clairol Incorporated, New York, N.Y. Filed May 7, 1968.

SHAMPOO 'N SHEEN

Applicant disclaims "Shampoo" apart from the mark as shown.
For Hair Shampoo (Int. Cl. 3).
First use Apr. 23, 1968.

SN 307,150. Todd Chemical Company, Inc., Great Neck, N.Y. Filed Sept. 11, 1968.

THE FUN SHAMPOO

Applicant disclaims the word "Shampoo" apart from the mark as shown.
For Children's Hair Shampoo (Int. Cl. 3).
First use May 24, 1966.

SN 308,573. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Oct. 1, 1968.

WILD BATH

Applicant makes no exclusive claim to the word "Bath," apart from the mark as shown.
For Toilet Soap (Int. Cl. 3).
First use Aug. 28, 1968.

SERVICE MARKS

Class 100 — Miscellaneous

SN 286,820. Harrison Security Services, Inc., Jackson, Miss. Filed Dec. 13, 1967.



For Security Services—Namely, Guard and Fire Protection of the Property of Others (Int. Cl. 42).
First use May 5, 1967.

SN 289,905. Morris A. Levin, d.b.a. Allstate Hearing Aid Service, Fort Lauderdale, Fla. Filed Jan. 30, 1968.

ALLSTATE

For Fitting Hearing Aids for Others (Int. Cl. 42).
First use Jan. 2, 1966.

SN 296,819. The Downtowner Corporation, Memphis, Tenn. Filed Apr. 29, 1968.



Owner of Reg. Nos. 737,345, 827,680, and others.
For Motor Inn Reservation Services (Int. Cl. 42).
First use Aug. 1, 1967.

SN 301,473. Town House Motels, Magnolia, Ark. Filed June 26, 1968.

TOWN HOUSE MOTEL

Without waiver of common law rights, applicant disclaims the word "Motel" apart from the mark as shown.
For Motel Services (Int. Cl. 42).
First use on or about Aug. 2, 1958.

SN 301,754. Miami Springs Villas, Inc., Miami Springs, Fla. Filed July 1, 1968.

My Apartment

For Restaurant Services (Int. Cl. 42).
First use Jan. 15, 1968.

SN 308,244. Wilscam Enterprises, Inc., Denver Colo. Filed Sept. 25, 1968.

THE HUNGRY FARMER

Owner of Reg. No. 835,631.
For Restaurant and Liquor Bar Services (Int. Cl. 42).
First use May 22, 1964.

Class 101 — Advertising and Business

SN 242,422. Leonard E. Boeske, Downers Grove, Ill. Filed Apr. 1, 1966.

CAMEO

The drawing is lined for the color orange.
For Rendering Technical Assistance to Those in the Condominium Field in All Phases of Such Housing (Int. Cl. 35).
First use on or prior to July 4, 1963.

SN 243,304. Leonard E. Boeske, Downers Grove, Ill. Filed Apr. 13, 1966.

CAMEO-MINIUM

For Management Services Relating to Condominium Apartments (Int. Cl. 35).
First use on or prior to July 4, 1963.

SN 263,172. Glendinning Companies, Inc., Westport, Conn. Filed Jan. 24, 1967.



For Promoting the Sale of Goods and/or Services of Others Through the Distribution of Printed Materials and Advertising Designed for Promotional Contests (Int. Cl. 35).
First use Mar. 4, 1965.

SN 279,497. Record Club of America, Inc., York, Pa. Filed Aug. 31, 1967.



The words "Guaranteed Same Day Express Service" are disclaimed apart from the mark as shown.
For Phonograph Record Mail Order Service (Int. Cl. 35).
First use Apr. 19, 1967.

SN 290,259. The Cloth World, Inc., Amarillo, Tex. Filed Feb. 5, 1968.

Cloth World

The word "Cloth" is disclaimed apart from the mark as shown.
For Retail Cloth and Notion Store Services (Int. Cl. 35).
First use Aug. 25, 1965.

SN 291,484. D. L. Blair Corporation, New York, N.Y. Filed Feb. 20, 1968.

RPM

For Fostering the Sale of Goods and Services of Others by Arranging Promotion Programs in Association With the Sport of Automobile Racing and Professional Automobile Racing Drivers (Int. Cl. 35).
First use Feb. 15, 1968.

SN 295,810. R. Dixon Speas Associates, Inc., Manhasset, N.Y. Filed Apr. 17, 1968.

COMPS

For Planning the Repair and Maintenance of Aircraft by Means of Computers (Int. Cl. 35).
First use Mar. 5, 1968.

SN 300,884. The Albert Appraisal Company, Inc., Croton-on-Hudson, N.Y. Filed June 20, 1968.



For Real Estate Appraising (Int. Cl. 35).
First use April 1965.

SN 307,313. Copper Kettle, Inc., Dallas, Tex. Filed Sept. 13, 1968.

COPPER KETTLE

For Retail Gift Shop Services Specializing in Housewares (Int. Cl. 35).
First use at least as early as Apr. 15, 1966.
Subj. to Intf. with SN 307,980.

Class 102 — Insurance and Financial

SN 296,535. Hearthstone Insurance Company of Massachusetts, Boston, Mass. Filed Apr. 25, 1968.

HEARTHSTONE Insurance Company of Massachusetts

Owner of Reg. No. 815,969.
For Insurance Underwriting Services (Int. Cl. 36).
First use September 1968.

SN 311,554. National Express Company, Philadelphia, Pa. Filed Nov. 7, 1968.



Applicant disclaims the terms "Money Orders" and "Safe, Sure, Convenient," apart from the mark as shown. Owner of Reg. No. 655,646.
For Sale of Money Orders and Collection and Payment of Utility Bills (Int. Cl. 36).
First use Jan. 3, 1955.

Class 103 — Construction and Repair

SN 296,797. Berger Lumber Corp., West Kingston, R.I. Filed Apr. 29, 1968.

KINGSTON KOTTAGES

No claim of exclusive right is made to "Kottages" for the services recited.
For Erection of Prefabricated Homes (Int. Cl. 37).
First use on or about Mar. 23, 1957.

SN 296,977. National Service Industries, Inc., Atlanta, Ga. Filed Apr. 30, 1968.

HEALTH IN MOTION

For Rental of Athletic Clothing, Including the Supplying of Trunks and T-Shirts, and Cleaning of Same (Int. Cl. 37).
First use Apr. 15, 1968.

SN 297,453. Otho Gordon Taylor, Atlanta, Ga. Filed May 6, 1968.



The "Silhouette" appearing on the drawing is a purely fictitious individual.
For Dry Cleaning Services (Int. Cl. 37).
First use Dec. 1, 1967.

Class 105 — Transportation and Storage

SN 287,844. United Air Lines, Inc., Chicago, Ill. Filed Dec. 29, 1967.

FUNBIRD

Owner of Reg. No. 843,032.
For Air Transportation of Passengers (Int. Cl. 39).
First use Oct. 6, 1967.

SN 306,482. The Greyhound Corporation, Chicago, Ill. Filed Sept. 3, 1968.

SUPERCRUISER

For Motor Bus Transportation of Passengers and Goods (Int. Cl. 39).
First use June 27, 1968.

Class 106 — Material Treatment

SN 286,354. Martin Processing Company, Incorporated, Martinsville, Va. Filed Dec. 6, 1967.

CARPETTI

For Treating Filaments of Others, Used in the Manufacture of Textile Products (Int. Cl. 40).
First use Nov. 17, 1967.

SN 300,232. Picture Corporation, Minneapolis, Minn. Filed June 12, 1968.

SNAP STOP

For Photographic Services—Namely, Developing and Processing of Photographic Film (Int. Cl. 40).
First use Apr. 24, 1968.

SN 306,338. Colt Drapery Cleaners, Inc., Burlingame, Calif. Filed Aug. 30, 1968.



For Cleaning and Treating Draperies and Fabric Window Coverings (Int. Cl. 40).
First use 1957.

Class 107 — Education and Entertainment

SN 286,667. Gulf States Theatres, Inc., McComb, Miss. Filed Dec. 11, 1967.

SHOWTOWN U.S.A.

The letters "U.S.A." are disclaimed apart from the mark as shown.
For Motion Picture Theatre Services (Int. Cl. 41).
First use Feb. 27, 1965.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1—Raw or Partly Prepared Materials

868,840. MISCELLANEOUS DESIGN. Domestic Marble & Stone Corporation. MULTIPLE CLASS (Classes 1 and 12). SN 290,084. Pub. 2–18–69. Filed 2–1–68.

868,841. DOMAR AND DESIGN. Domestic Marble & Stone Corporation. MULTIPLE CLASS (Classes 1 and 12). SN 290,085. Pub. 2–18–69. Filed 2–1–68.

868,842. ALPHAGLOSS. Anglo-American Clays Corporation. SN 304,045. Pub. 2–18–69. Filed 8–1–68.

868,843. ALPHACOTE. Anglo-American Clays Corporation. SN 304,046. Pub. 2–18–69. Filed 8–1–68.

868,844. F FELCO AND DESIGN. Farmers Regional Cooperative. SN 305,271. Pub. 2–18–69. Filed 8–16–68.

Class 2—Receptades

868,845. ACELLA. J. H. Benecke Beteiligungsgesellschaft mit beschrankter Haftung & Co. KG., by change of name from J. H. Benecke. SN 44,867. Pub. 11–24–59. Filed 1–29–58.

868,846. EXPOVISTO. Jonas Tempelhof. SN 245,997. Pub. 2–18–69. Filed 5–18–66.

868,847. LOCK-TEMP. Lochinvar Water Heater Corporation. SN 296,852. Pub. 2–18–69. Filed 4–29–68.

868,848. SILITE FOAM WARE AND DESIGN. Si Lite, Incorporated. SN 298,478. Pub. 2–18–69. Filed 5–17–68.

868,849. CELL-PAK. Geo. J. Ball, Inc. SN 299,093. Pub. 2–18–69. Filed 5–27–68.

868,850. STRUCTO-CELL. Purex Corporation, Ltd. SN 302,472. Pub. 2–18–69. Filed 7–11–68.

868,851. PRIDE AND DESIGN. Pride Container Corporation. SN 305,063. Pub. 2–18–69. Filed 8–13–68.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

868,852. IMAGE. Canterbury Belts, Ltd. MULTIPLE CLASS (Classes 3, 28, and 39). SN 270,642. Pub. 2–18–69. Filed 5–4–67.

868,853. SAMSONITE CLASSIC ATTACHE DIPLOMAT. Samsonite Corporation. SN 281,627. Pub. 2–18–69. Filed 10–2–67.

868,854. SAMSONITE SIGNAT ATTACHE SUBURBAN. Samsonite Corporation. SN 281,628. Pub. 2–18–69. Filed 10–2–67.

868,855. SAMSONITE CLASSIC ATTACHE STATESMAN. Samsonite Corporation. SN 281,629. Pub. 2–18–69. Filed 10–2–67.

868,856. SAMSONITE CLASSIC ATTACHE COMMUTER. Samsonite Corporation. SN 281,630. Pub. 2–18–69. Filed 10–2–67.

868,857. SAMSONITE SIGNAT ATTACHE ENVOY. Samsonite Corporation. SN 281,631. Pub. 2–18–69. Filed 10–2–67.

868,858. MISCELLANEOUS DESIGN. Sarne Company, Inc. SN 288,541. Pub. 2–18–69. Filed 1–10–68.

868,859. DOG TENDA AND DESIGN. The Vacuum Cleaner Corporation of America. SN 291,455. Pub. 2–18–69. Filed 2–19–68.

868,860. FASHION MATES. Sarne Company, Inc. SN 295,560. Pub. 2–18–69. Filed 4–12–68.

868,861. HEREFORD BRAND AND DESIGN. Tandy Corporation, d.b.a. Tex Tan Western Leather Co. MULTIPLE CLASS (Classes 3 and 39). SN 299,720. Pub. 2–18–69. Filed 6–5–68.

868,862. STAT KIT. Stat-Pak, Incorporated. SN 304,871. Pub. 2–18–69. Filed 8–12–68.

Class 4—Abrasives and Polishing Materials

868,863. "CER-CRE." William C. Coons, Jr., d.b.a. The Marwin Company. SN 297,425. Pub. 2–18–69. Filed 5–6–68.

868,864. TRANS-LITE. S. C. Johnson & Son, Inc. SN 310,824. Pub. 2–18–69. Filed 10–30–68.

Class 6—Chemicals and Chemical Compositions

868,865. TIL. British Titan Products Company, Limited. SN 280,300. Pub. 2–18–69. Filed 9–14–67.

868,866. SAGAVAC. Seravac Laboratories (Pty.) Limited. SN 287,382. Pub. 2–18–69. Filed 12–21–67.

868,867. VHR. The Perkin-Elmer Corporation. SN 296,572. Pub. 2–18–69. Filed 4–25–68.

868,868. CHLOR-RID. Hartz Mountain Products Corp. SN 297,674. Pub. 2–18–69. Filed 5–8–68.

868,869. BLAVIN. Reichhold Chemicals, Inc. SN 297,707. Pub. 2–18–69. Filed 5–8–68.

868,870. WESLINK. Weston Chemical Corporation. SN 297,906. Pub. 2–18–69. Filed 5–10–68.

868,871. WESFLEX. Weston Chemical Corporation. SN 297,907. Pub. 2–18–69. Filed 5–10–68.

868,872. RENOX. Foseco International Limited. SN 298,223. Pub. 2–18–69. Filed 5–15–68.

868,873. KARDEL. Union Carbide Corporation. SN 298,270. Pub. 2–18–69. Filed 5–15–68.

868,874. SURFEL. Union Carbide Corporation. SN 298,271. Pub. 2–18–69. Filed 5–15–68.

868,875. F–95. Calgon Corporation. SN 298,413. Pub. 2–18–69. Filed 5–17–68.

868,876. BUXCIDE. Chevron Chemical Company. SN 298,423. Pub. 2–18–69. Filed 5–17–68.

868,877. LUCONYL. Badische Anilin- & Soda-Fabrik Aktiengesellschaft. SN 298,685. Pub. 2–18–69. Filed 5–21–68.

868,878. STAYCIN. The Baker Castor Oil Company. SN 299,203. Pub. 2–18–69. Filed 5–28–68.

868,879. TANDEX. FMC Corporation. SN 299,225. Pub. 2–18–69. Filed 5–28–68.

868,880. TAI WINDS. Avon Products, Inc. SN 299,298. Pub. 2–18–69. Filed 5–29–68.

868,881. SEA WILLOW. Avon Products, Inc. SN 299,302. Pub. 2–18–69. Filed 5–29–68.

868,882. NOIT CART. Blain Industries, Inc. SN 299,642. Pub. 2–18–69. Filed 6–4–68.

868,883. MICROWET. GAF Corporation. SN 299,769. Pub. 2–18–69. Filed 6–5–68.

Class 7—Cordage

868,884. VELVET-FAB. Sun Chemical Corporation. SN 295,469. Pub. 2–18–69. Filed 4–11–68.

868,885. VELVET-RIB. Sun Chemical Corporation. SN 295,470. Pub. 2–18–69. Filed 4–11–68.

868,886. BUDDY. John C. Hopkins, d.b.a. Power-Rate Sales Co. SN 303,418. Pub. 2–18–69. Filed 7–23–68.

868,887. SB BRANDING IRON AND DESIGN. Schermerhorn Bros. Co. SN 304,018. Pub. 2–18–69. Filed 7–31–68.

Class 8—Smokers' Artides, Not Including Tobacco Products

868,888. ACELLA. J. H. Benecke Beteiligungsgesellschaft mit beschrankter Haftung & Co. KG., by change of name from J. H. Benecke. SN 44,869. Pub. 11–3–59. Filed 1–29–58.

Class 10—Fertilizers

868,889. GRACE AND DESIGN. W. R. Grace & Co. SN 279,550. Pub. 2–18–69. Filed 9–1–67.

868,890. BREA. Collier Carbon and Chemical Corporation. SN 298,428. Pub. 2–18–69. Filed 5–17–68.

868,891. FEDERAL LAWN MASTER. Federal Chemical Company. SN 301,827. Pub. 2–18–69. Filed 7–2–68.

868,892. AMAZE. Lloyd Harley Bowen, d.b.a. The Garden Mart. SN 303,500. Pub. 2–18–69. Filed 7–24–68.

868,893. AGRI-FLO. Continental Oil Company. SN 305,204. Pub. 2–18–69. Filed 8–15–68.

868,894. VIKING SHIP. Norsk Hydro-Elektrisk Kvaelstofaktieselskab. SN 305,964. Pub. 2–18–69. Filed 8–26–68.

868,895. FANCIFUL FIGURE. Continental Oil Company. SN 305,404. Pub. 2–25–69. Filed 8–19–68.

Class 11—Inks and Inking Materials

868,896. PROTECTOGRAPH. Burroughs Corporation. SN 296,802. Pub. 2–18–69. Filed 4–29–68.

868,897. SUNCURE. Sun Chemical Corporation. SN 298,875. Pub. 2–18–69. Filed 5–22–68.

Class 12—Construction Materials

868,840. (See Class 1 for this trademark.)

868,841. (See Class 1 for this trademark.)

868,898. RODOPLY. W. R. Grace & Co., assignee of Electrovert Inc. SN 264,121. Pub. 2–18–69. Filed 1–16–67.

868,899. TOP LINE. Oatey Co., by change of name from The L. R. Oatey Company. MULTIPLE CLASS (Classes 12, 16, and 34). SN 270,693. Pub. 2–18–69. Filed 5–4–67.

868,900. VAN-GUARD. Kane Manufacturing Corporation. SN 275,271. Pub. 2–18–69. Filed 7–3–67.

868,901. P AND DESIGN. Perstorp Aktiebolag. SN 275,465. Pub. 2–18–69. Filed 7–6–67.

868,902. AIR-FRAME. Harvestall Industries, Inc. SN 280,705. Pub. 2–18–69. Filed 9–19–67.

868,903. BON COAT AND DESIGN. M & D Enterprises, Inc. SN 285,239. Pub. 2–18–69. Filed 11–20–67.

868,904. SPACE-RITE. Pomona Tile Manufacturing Company. SN 297,213. Pub. 2–18–69. Filed 5–2–68.

868,905. CLOISTER. U.S. Plywood-Champion Papers Inc. SN 298,389. Pub. 2–18–69. Filed 5–17–68.

868,906. PABCO. Fibreboard Corporation. SN 303,297. Pub. 2–18–69. Filed 7–22–68.

868,907. RED RING AND DESIGN. Missouri Portland Cement Company. SN 303,427. Pub. 2–18–69. Filed 7–23–68.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

868,908. CHEMISTAT. Water Service Laboratories, Inc. SN 278,545. Pub. 2–18–69. Filed 8–17–67.

868,909. WIG-WAG. Commercial Mechanisms, Inc. SN 279,812. Pub. 2–18–69. Filed 9–7–67.

868,910. THRUSH. Thrush Products, Inc., d.b.a. H. A. Thrush & Company. MULTIPLE CLASS (Classes 13, 23, and 34). SN 287,477. Pub. 2–18–69. Filed 12–26–67.

868,911. DIRECTION 2000. American Standard Inc. SN 292,665. Pub. 2–18–69. Filed 3–7–68.

868,912. PURR SUEDE. Beneke Corporation. SN 293,792. Pub. 2–18–69. Filed 3–21–68.

868,913. AMERICAN AND DESIGN. American Racing Equipment. MULTIPLE CLASS (Classes 13 and 19). SN 295,788. Pub. 2–18–69. Filed 4–17–68.

868,914. HEPA-LINE PRODUCT. Henry A. Patnaude. MULTIPLE CLASS (Classes 13 and 19). SN 298,280. Pub. 2–18–69. Filed 5–16–68.

868,915. DRIP-TROL. Virginia Chemicals Inc. SN 303,458. Pub. 2–18–69. Filed 7–23–68.

868,916. RS 95. Republic Steel Corporation. SN 307,751. Pub. 2–18–69. Filed 9–19–68.

868,917. SYNCHRO-CHEK. W. John Woolley, d.b.a. W. J. Woolley Company. SN 309,805. Pub. 2–18–69. Filed 10–16–68.

Class 14—Metals and Metal Castings and Forgings

868,918. CALSIBAR. Union Carbide Corporation. SN 293,330. Pub. 2–18–69. Filed 3–14–68.

868,919. MASTALLOY. Masten Corporation. SN 299,688. Pub. 2–18–69. Filed 6–4–68.

868,920. GELIDE. Geoscience Instruments Corporation. SN 299,770. Pub. 2–18–69. Filed 6–5–68.

868,921. PIPIN' HOT. Louis Dejonge and Company. SN 304,186. Pub. 2–18–69. Filed 8–2–68.

Class 16—Protective and Decorative Coatings

868,899. (See Class 12 for this trademark.)

Class 18—Medicines and Pharmaceutical Preparations

868,922. DEPEPTHINE. G. D. Searle & Co. SN 284,744. Pub. 2–18–69. Filed 11–13–67.

868,923. BAONKINE AND DESIGN. Etnah Rochou Boutté. SN 303,394. Pub. 2–18–69. Filed 7–23–68.

Class 19—Vehicles

868,913. (See Class 13 for this trademark.)

868,914. (See Class 13 for this trademark.)

868,924. ACELLA. J. H. Benecke Beteiligungsgesellschaft mit beschrankter Haftung & Co. KG., by change of name from J. H. Benecke. SN 44,866. Pub. 9-29-59. Filed 1-29-58.

868,925. CONCORDE. Brunswick Corporation. SN 286,638. Pub. 2-18-69. Filed 12-11-67.

Class 21 — Electrical Apparatus, Machines, and Supplies

868,926. CAMBLOCK. G. T. Schjeldahl Company, by change of name and mesne assignment from Waltham Precision Instrument Company, Inc. SN 190,215. Pub. 10-18-66. Filed 4-2-64.

868,927. SKYLYTE. Cal-West Electric, Inc. SN 272,351. Pub. 2-18-69. Filed 5-25-67.

868,928. HIWRAP. Simplex Wire and Cable Company. SN 289,926. Pub. 12-31-68. Filed 1-30-68.

868,929. MINI-SYNC. Dynair Electronics, Inc. SN 297,178. Pub. 2-18-69. Filed 5-2-68.

868,930. 160-T. Fisher Radio Corporation. SN 299,663. Pub. 2-18-69. Filed 6-4-68.

Class 22 — Games, Toys, and Sporting Goods

868,931. FAWN. Fawn Engineering Company. SN 296,134. Pub. 2-18-69. Filed 4-22-68.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

868,910. (See Class 13 for this trademark.)

868,932. YORK'S SPAT-R-WAY. Chicago Welding Sales Company, d.b.a. York Engineering Company. SN 267,917. Pub. 2-18-69. Filed 3-30-67.

868,933. HARVEST SUPREME. Big Bear, Inc. SN 274,117. Pub. 2-18-69. Filed 6-16-67.

868,934. RAUCH AND DESIGN. The Rauch Corporation. SN 279,414. Pub. 2-18-69. Filed 8-30-67.

868,935. STRIPE-OMATIC. United States Machinery, Inc. SN 279,880. Pub. 2-18-69. Filed 9-7-67.

868,936. HYDRO-WASH. Rees Blow Pipe Mfg. Co. SN 281,220. Pub. 2-18-69. Filed 9-26-67.

868,937. ELASTOMATIC. Triulzi S.p.A. SN 288,411. Pub. 2-18-69. Filed 10-30-67.

868,938. CLICK 'N CLEAN. Rival Manufacturing Company. SN 294,661. Pub. 2-18-69. Filed 4-1-68.

868,939. ILLINOIS. Illinois Tool Works Inc. SN 295,527. Pub. 2-18-69. Filed 4-12-68.

868,940. KING. H. D. Hudson Manufacturing Company. SN 304,040. Pub. 2-18-69. Filed 8-1-68.

868,941. HANDYMAN. The Stanley Works. SN 304,873. Pub. 2-18-69. Filed 8-12-68.

868,942. SUMITOMO. Sumitomo Metal Industries, Ltd. SN 308,440. Pub. 2-18-69. Filed 9-30-68.

Class 26 — Measuring and Scientific Appliances

868,943. DATALOG. Litton Business Systems, Inc., by merger and change of name from Monroe International Corporation. SN 239,428. Pub. 10-29-68. Filed 2-23-66.

868,944. RMS AND DESIGN. RMS Engineering, Inc. SN 240,539. Pub. 2-18-69. Filed 3-9-66.

868,945. SELECT-A-SHOW. A.V.P.S. Corporation. SN 264,378. Pub. 2-18-69. Filed 2-10-67.

868,946. SEATASK. Divcon International (U.K.) Limited. SN 281,561. Pub. 2-18-69. Filed 10-2-67.

868,947. COLORDELTARON. Henry's Camera Corporation. SN 282,084. Pub. 2-18-69. Filed 10-9-67.

868,948. COMBIFIX. Tesa S.A. SN 282,148. Pub. 2-18-69. Filed 10-9-67.

868,949. INFRA 2. Intertech Corporation. SN 288,216. Pub. 2-18-69. Filed 1-5-68.

868,950. B AND CIRCLE DESIGN. Burroughs Corporation. SN 289,168. Pub. 2-18-69. Filed 1-19-68.

868,951. LOGI-TROL. The Aro Corporation. SN 292,755. Pub. 2-18-69. Filed 3-8-68.

868,952. GOLDEN T. T.G. & Y. Stores Company. SN 292,827. Pub. 2-18-69. Filed 3-8-68.

868,953. RS BEC AND DESIGN. BEC Pressure Controls Corp. SN 293,218. Pub. 2-18-69. Filed 3-14-68.

868,954. VISIPRINTER. Honeywell Inc. SN 296,537. Pub. 2-18-69. Filed 4-25-68.

868,955. PETITE. The National Cash Register Company. SN 298,617. Pub. 2-18-69. Filed 5-20-68.

868,956. LOGMATIC. Dytro Corporation. SN 299,733. Pub. 9-10-68. Filed 6-5-68.

868,957. WELLING AND DESIGN. Welling International Corp. SN 300,766. Pub. 2-18-69. Filed 6-18-68.

868,958. HYDROSCAN. Leeds & Northrup Company. SN 301,234. Pub. 2-18-69. Filed 6-24-68.

868,959. KLIMB-SAVER. Main-Wall Enterprises. SN 301,439. Pub. 2-18-69. Filed 6-26-68.

868,960. CHROMAFIX. Tracor, Inc. SN 301,787. Pub. 2-18-69. Filed 7-1-68.

868,961. MINI-COLOR. Houston Fearless Corporation. SN 303,167. Pub. 2-18-69. Filed 7-19-68.

868,962. FINEX. GAF Corporation. SN 306,134. Pub. 2-18-69. Filed 8-28-68.

868,963. MICO. Mettler Instrument Corporation. SN 306,259. Pub. 2-18-69. Filed 8-29-68.

Class 27 — Horological Instruments

868,964. THE AVENGERS. ABC Television Films Limited, assignee of A.B.C. Television Limited. SN 282,943. Pub. 2-18-69. Filed 9-26-67.

868,965. ATOMACHRON. Bulova Watch Company, Inc. SN 304,585. Pub. 2-18-69. Filed 8-7-68.

868,966. ATOMATRON. Bulova Watch Company, Inc. SN 304,586. Pub. 2-18-69. Filed 8-7-68.

Class 28 — Jewelry and Precious-Metal Ware

868,852. (See Class 3 for this trademark.)

868,967. STATE HERITAGE. H, Inc. SN 303,794. Pub. 2-18-69. Filed 7-29-68.

868,968. SILVER LACE. International Silver Company. SN 308,256. Pub. 2-18-69. Filed 9-26-68.

Class 29 — Brooms, Brushes, and Dusters

868,969. HOUSE OF FULLER. The Fuller Brush Company. SN 297,284. Pub. 2-18-69. Filed 5-3-68.

Class 31 — Filters and Refrigerators

868,970. STERIFIL. Millipore Corporation. SN 268,887. Pub. 2-18-69. Filed 4-11-67.

868,971. REPP AND DESIGN. The Virtis Company, Inc. SN 284,852. Pub. 2-18-69. Filed 11-14-67.

868,972. LAUREL. Robert Marsh Enterprises, Inc. SN 293,940. Pub. 2-18-69. Filed 3-22-68.

868,973. AMINEX. Bio-Rad Laboratories. SN 297,371. Pub. 2-18-69. Filed 5-6-68.

868,974. JACADEAN. Dean Products, Inc. SN 300,805. Pub. 2-18-69. Filed 6-19-68.

Class 32 — Furniture and Upholstery

868,975. ACELLA. J. H. Benecke Beteiligungsgesellschaft mit beschrankter Haftung & Co. KG., by change of name from J. H. Benecke. SN 49,116. Pub. 1-20-59. Filed 4-7-58.

868,976. ROMANCE. Merillat Woodworking Company. SN 291,622. Pub. 2-18-69. Filed 2-21-68.

868,977. CORONA COLLECTION. Schnadig Corporation. SN 295,256. Pub. 2-18-69. Filed 4-9-68.

868,978. ROYALETAINER. Fortune Plastics, Inc. SN 305,041. Pub. 2-18-69. Filed 8-13-68.

868,979. HERALD HOUSE. L. & B. Products Corp. SN 306,063. Pub. 2-18-69. Filed 8-27-68.

868,980. DOUGLAS. Douglas Furniture Corporation. SN 311,091. Pub. 2-18-69. Filed 11-1-68.

Class 33 — Glassware

868,981. DURA SEAL. Century Industries, Inc. SN 282,056. Pub. 2-18-69. Filed 10-9-67.

868,982. ANCHOR HOCKING. Anchor Hocking Glass Corporation. SN 282,253. Pub. 2-18-69. Filed 10-11-67.

868,983. H AND ANCHOR DESIGN. Anchor Hocking Glass Corporation. SN 282,256. Pub. 2-18-69. Filed 10-11-67.

868,984. NESATRON. PPG Industries, Inc. SN 310,524. Pub. 2-18-69. Filed 10-25-68.

Class 34 — Heating, Lighting, and Ventilating Apparatus

868,899. (See Class 12 for this trademark.)

868,910. (See Class 13 for this trademark.)

868,985. ZIRCOLOX. National Beryllia Corp. SN 267,969. Pub. 2-18-69. Filed 3-30-67.

868,986. IHF AND DESIGN. Industrial Heating and Finishing Co., Inc. SN 280,871. Pub. 2-18-69. Filed 9-21-67.

868,987. SEQUENCE-PAK. Raypak Company, Inc. SN 300,003. Pub. 2-18-69. Filed 6-7-68.

868,988. CRAGMET AND DESIGN. Cragmet Corporation. SN 300,071. Pub. 2-18-69. Filed 6-10-68.

868,989. PVS (DESIGN). Wheeling Service & Supply, Inc. SN 300,147. Pub. 2-18-69. Filed 6-10-68.

868,990. JACADEAN. Dean Products, Inc. SN 300,806. Pub. 2-18-69. Filed 6-19-68.

868,991. IFB. Aero-Flow Dynamics, Inc. SN 301,393. Pub. 2-18-69. Filed 6-26-68.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

868,992. FABAIR. Haveg Industries, Inc. SN 282,188. Pub. 2-18-69. Filed 10-10-67.

868,993. HOLD FAST AND DESIGN. American Lace Leather Co. Inc. SN 305,388. Pub. 2-18-69. Filed 8-19-68.

868,994. TORQUE-FLEX. The Goodyear Tire & Rubber Company. SN 308,292. Pub. 2-18-69. Filed 9-26-68.

868,995. PACELON. Thor Power Tool Company. SN 308,326. Pub. 2-18-69. Filed 9-26-68.

868,996. TUFF-CORE. Albany Felt Company. SN 308,448. Pub. 2-18-69. Filed 9-30-68.

868,997. FORMULA. Tire Distributors, Incorporated. SN 308,642. Pub. 2-18-69. Filed 10-1-68.

Class 37 — Paper and Stationery

868,998. ACELLA. J. H. Benecke Beteiligungsgesellschaft mit beschrankter Haftung & Co. KG., by change of name from J. H. Benecke. SN 3,075. Pub. 5-19-59. Filed 2-21-56.

868,999. C AND DESIGN. Churchill Business Forms Company. SN 273,179. Pub. 3-12-68. Filed 6-6-67.

869,000. CONTINUOUS DATA PROCESSING FORMS AND DESIGN. Churchill Business Forms Company. SN 273,180. Pub. 10-1-68. Filed 6-6-67.

869,001. C CHURCHILL BUSINESS FORMS COMPANY AND DESIGN. Churchill Business Forms Company. SN 273,181. Pub. 10-1-68. Filed 6-6-67.

869,002. SCANNER. Dur-O-Lite Pencil Company. SN 299,115. Pub. 2-18-69. Filed 5-27-68.

Class 38 — Prints and Publications

869,003. BANDWAGON AND DESIGN. Bandwagon U.S.A., Inc., assignee of Bayuk Cigars Incorporated. SN 241,962. Pub. 9-19-67. Filed 3-28-66.

869,004. TORCH (DESIGN). Harper & Row, Publishers, Incorporated. SN 256,092. Pub. 3-12-68. Filed 10-10-66.

869,005. JOURNAL OF COMPOSITE MATERIALS. Washington University and Monsanto Company (joint venture). SN 259,781. Pub. 7-30-68. Filed 11-30-66.

869,006. STORY. Scholastic Magazines, Inc. SN 273,531. Pub. 2-18-69. Filed 6-9-67.

869,007. BURROUGHS. Burroughs Corporation. SN 290,071. Pub. 2-18-69. Filed 2-1-68.

869,008. B AND CIRCLE DESIGN. Burroughs Corporation. SN 290,072. Pub. 2-18-69. Filed 2-1-68.

869,009. UNITED BUSINESS & INVESTMENT REPORT. United Business Service Company. SN 292,639. Pub. 2-18-69. Filed 3-6-68.

869,010. ATLAS. The World Press Company. SN 293,191. Pub. 2-18-69. Filed 3-13-68.

869,011. KOALA-TY KLASSIKS AND DESIGN. Richard Czerniowski, d.b.a. Koala-Ty Klassiks. SN 297,979. Pub. 2-18-69. Filed 5-13-68.

869,012. THE AMERICAN HOSPITAL PROFESSIONAL. Sutton Publishing Company, Inc. SN 298,483. Pub. 2-18-69. Filed 5-17-68.

869,013. THINK MINK. Jack Gasnick. SN 299,556. Pub. 2-18-69. Filed 6-3-68.

869,014. CROSSWINDS AND DESIGN. Clarity Publishing, Inc. SN 301,410. Pub. 2-18-69. Filed 6-26-68.

869,015. CLOUD 9. Alfred B. Rode. SN 305,069. Pub. 2-18-69. Filed 8-13-68.

869,016. HI TIMES. Board of Publication of the Methodist Church, Inc., d.b.a. The Graded Press. SN 306,012. Pub. 2-18-69. Filed 8-22-68.

Class 39 — Clothing

868,852. (See Class 3 for this trademark.)

868,861. (See Class 3 for this trademark.)

869,017. ACELLA. J. H. Benecke Beteiligungsgesellschaft mit beschrankter Haftung & Co. KG., by change of name from J. H. Benecke. SN 44,868. Pub. 4-7-59. Filed 1-29-58.

869,018. BEVERLY CREATIONS AND DESIGN. Dorothy M. Young, d.b.a. Beverly Creations. SN 246,509. Pub. 2-18-69. Filed 5-24-66.

869,019. TEX-SUN BRAND AND DESIGN. Tex-Sun Glove Company. SN 274,005. Pub. 2-18-69. Filed 6-15-67.

869,020. DURA-SET. The Joseph & Feiss Company. SN 279,487. Pub. 2-18-69. Filed 8-31-67.

869,021. ANGELICA - PREST. Angelica Corporation, by change of name from Angelica Uniform Company. SN 281,432. Pub. 2-18-69. Filed 9-29-67.

869,022. CLIPPERSHIP CANVAS. Oxford Industries, Inc. SN 281,613. Pub. 2-18-69. Filed 10-2-67.

869,023. SCUBA DUBA. Four Star Sportswear, Inc. SN 288,948. Pub. 2-18-69. Filed 1-16-68.

869,024. J. W. CARTER. Blue Bell Boots, Inc. SN 292,840. Pub. 2-18-69. Filed 3-11-68.

869,025. DOG HOUSE (DESIGN). Wolverine World Wide, Inc. SN 293,189. Pub. 2-18-69. Filed 3-13-68.

869,026. TALK-ABOUTS. M. Berman & Sons Inc. SN 293,347. Pub. 2-18-69. Filed 3-15-68.

869,027. MELBO. Melbo Clothing Incorporated. SN 293,541. Pub. 2-18-69. Filed 3-18-68.

869,028. GUI. Etablissements Gaston Verdier, Societe Anonyme. SN 294,268. Pub. 2-18-69. Filed 3-27-68.

869,029. VANAIRE. Van Raalte Company, Inc. SN 297,727. Pub. 2-18-69. Filed 5-8-68.

869,030. THE HOPPY SHOP. Spartans Industries, Inc. SN 300,982. Pub. 2-18-69. Filed 6-20-68.

869,031. NOVA-SET. Hart Schaffner & Marx. SN 301,225. Pub. 2-18-69. Filed 6-24-68.

869,032. FIRM 'N FLATTER. International Playtex Corporation. SN 302,335. Pub. 2-18-69. Filed 7-9-68.

869,033. SOFT-LIFE. French, Shriner & Urner Mfg. Co. SN 302,613. Pub. 2-18-69. Filed 7-12-68.

869,034. EBB TIDE. Par-Form Foundations, Inc. SN 302,636. Pub. 2-18-69. Filed 7-12-68.

869,035. WALLABEES. Padmore & Barnes Limited. SN 303,193. Pub. 2-18-69. Filed 7-19-68.

869,036. REFRIGIWEAR AND DESIGN. Refrigiwear Inc. SN 303,444. Pub. 2-18-69. Filed 7-23-68.

869,037. JA AND DESIGN. Jacob Ash Company, Inc. SN 303,760. Pub. 2-18-69. Filed 7-29-68.

869,038. VERONESE. Thomas W. Garland, Inc. SN 303,908. Pub. 2-18-69. Filed 7-30-68.

869,039. FLOAT COAT. The Empress Corporation. SN 307,321. Pub. 2-18-69. Filed 9-13-68.

869,040. GIRLFOOTING. Melville Shoe Corporation. SN 309,815. Pub. 2-18-69. Filed 10-17-68.

Class 40 — Fancy Goods, Furnishings, and Notions

869,041. SNEAKER SAVERS. Forest City Products, Inc. SN 290,838. Pub. 2-18-69. Filed 2-12-68.

869,042. DARLING. Darling Curler, Incorporated. SN 301,125. Pub. 2-18-69. Filed 6-24-68.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

869,043. ACELLA. J. H. Benecke Beteiligungsgesellschaft mit beschrankter Haftung & Co. KG., by change of name from J. H. Benecke. SN 3,074. Pub. 9-10-57. Filed 2-21-56.

869,044. VISLON. Tennessee Tufting Company. SN 234,482. Pub. 2-7-67. Filed 12-13-65.

869,045. DISCOVERY. B. Ashworth & Company (Overseas) Limited. SN 295,094. Pub. 2-18-69. Filed 4-8-68.

869,046. ARROYO. Abaco Fabrics Corp. (New York corporation), assignee of Abaco Fabrics Corp. (Deleware corporation). SN 296,286. Pub. 2-18-69. Filed 4-23-68.

869,047. ASTROMOD. J. P. Stevens & Co., Inc. SN 301,460. Pub. 2-18-69. Filed 6-26-68.

Class 44 — Dental, Medical, and Surgical Appliances

869,048. RODRIGUEZ-ALVAREZ. United States Catheter & Instrument Corporation (Delaware corporation), assignee of United States Catheter & Instrument Corporation (New York corporation). SN 220,589. Pub. 2-18-69. Filed 6-7-65.

869,049. RUSHING BEAUTY. Clairol Incorporated. SN 280,559. Pub. 2-18-69. Filed 9-18-67.

869,050. REPRESENTATION OF A MAN, A WOMAN AND A CHILD. Sani-Pac Corporation. SN 284,321. Pub. 2-18-69. Filed 11-7-67.

869,051. HYDROFLAME. Unitek Corporation. SN 291,295. Pub. 2-18-69. Filed 2-16-68.

869,052. TORSION-X-BRACED. Guardian Products Company, Inc. SN 296,151. Pub. 2-18-69. Filed 4-22-68.

869,053. TORSION-V-BRACED. Guardian Products Company, Inc. SN 296,153. Pub. 2-18-69. Filed 4-22-68.

869,054. STRIPE (DESIGN). Johnson & Johnson. SN 297,139. Pub. 2-18-69. Filed 5-2-68.

869,055. BIO/SYSTEMS. Bio/Systems, Inc. SN 297,498. Pub. 2-18-69. Filed 5-7-68.

869,056. CHAIR-MODE. The Max Wocher & Son Company, d.b.a. Duxe Products. SN 297,908. Pub. 2-18-69. Filed 5-10-68.

869,057. BILSOM. Gullfiber Aktiebolag. SN 301,489. Pub. 2-18-69. Filed 6-27-68.

869,058. QUICKI-DO. The Songrand Corporation. SN 303,199. Pub. 2-18-69. Filed 7-19-68.

869,059. ETHERMATIC. The Foregger Company, Inc. SN 305,433. Pub. 2-18-69. Filed 8-19-68.

869,060. MULTI-VEST. The Dentists' Supply Company of New York. SN 306,227. Pub. 2-18-69. Filed 8-29-68.

869,061. CAULK AND DESIGN. The Dentists' Supply Company of New York. SN 306,651. Pub. 2-18-69. Filed 9-5-68.

869,062. TELEFUSOR. George A. Malson, d.b.a. Malson Plastics. SN 306,791. Pub. 2-18-69. Filed 9-6-68.

869,063. RESPIHALER. Merck & Co., Inc. SN 307,339. Pub. 2-18-69. Filed 9-13-68.

Class 45 — Soft Drinks and Carbonated Waters

869,064. MARSH. Marsh Supermarkets, Inc. MULTIPLE CLASS (Classes 45 and 46). SN 268,919. Pub. 9-26-67. Filed 4-12-67.

Class 46 — Foods and Ingredients of Foods

869,064. (See Class 45 for this trademark.)

869,065. KING'S DELUXE AND DESIGN. King Foods, Inc., by change of name from King Packing, Inc. SN 217,348. Pub. 2-18-69. Filed 4-26-65.

869,066. HOWARD'S. Howard Food Products Company. SN 271,943. Pub. 2-18-69. Filed 5-19-67.

869,067. MISCELLANEOUS DESIGN. Needham Packing Company, Inc. SN 275,069. Pub. 2-18-69. Filed 6-29-67.

869,068. YAM YUMMIES. Stilwell Frozen Foods, Inc. SN 282,406. Pub. 2-18-69. Filed 10-12-67.

869,069. SILVER SKILLET. Silver Skillet Food Products Company. SN 286,072. Pub. 2-18-69. Filed 12-4-67.

869,070. SUNSHINE AND DESIGN. Sunshine Biscuits, Inc. SN 295,471. Pub. 2-18-69. Filed 4-11-68.

869,071. SUNSHINE AND FOUR-PANEL DESIGN. Sunshine Biscuits, Inc. SN 295,472. Pub. 2-18-69. Filed 4-11-68.

869,072. GOLDEN TRIANGLE. H. P. Hood & Sons, Inc. SN 303,417. Pub. 2-18-69. Filed 7-23-68.

869,073. PORTION-RITE. Foster Frosty Foods, Inc. SN 303,607. Pub. 2-18-69. Filed 7-25-68.

869,074. NUGGET. Nugget Distributors' Cooperative of America, Inc., d.b.a. Nugget Distributors, Inc. SN 304,741. Pub. 2-18-69. Filed 8-9-68.

869,075. BEG-MORE. O'Connell Packing Co. SN 306,618. Pub. 2-18-69. Filed 9-5-68.

869,076. NUGGET-MINER AND DESIGN. Nugget Distributors' Cooperative of America, Inc., d.b.a. Nugget Distributors, Inc. SN 307,617. Pub. 2-18-69. Filed 9-18-68.

Class 49 — Distilled Alcoholic Liquors

869,077. COGNAC MARNIER-LAPOSTOLLE AND DESIGN. Societe des Produits Marnier-Lapostolle. SN 293,747. Pub. 2-18-69. Filed 3-20-68.

869,078. LEWIS & CLARK. Alpha Industries, Inc. SN 304,643. Pub. 2-18-69. Filed 8-8-68.

869,079. REPRESENTATION OF A WINDSOR GUARD. National Distillers and Chemical Corporation, d.b.a. The Windsor Distillery Company. SN 307,067. Pub. 2-18-69. Filed 9-11-68.

Class 50 — Merchandise Not Otherwise Classified

869,080. AMERACELLA. J. H. Benecke Beteiligungsgesellschaft mit beschrankter Haftung & Co. KG., by change of name from J. H. Benecke. SN 1,196. Pub. 5-27-58. Filed 1-9-56.

869,081. ACELLA. J. H. Benecke Beteiligungsgesellschaft mit beschrankter Haftung & Co. KG., by change of name from J. H. Benecke. SN 3,071. Pub. 5-27-58. Filed 2-21-56.

869,082. SNAP-LOK. Arlington Aluminum Company. SN 271,217. Pub. 2-18-69. Filed 5-11-67.

869,083. 831. General Steel Industries, Inc., d.b.a. Flex-O-Lite Division. SN 281,065. Pub. 2-18-69. Filed 9-25-67.

Class 51 — Cosmetics and Toilet Preparations

869,084. ALGEMARINA. Bottger Kommanditgesellschaft Pharmazeutische und Kosmetische Praparate, by change of name from Prof. Sauerbruch-Praparate Bottger Kommanditgesellschaft. SN 222,063. Pub. 9-20-66. Filed 6-25-65.

869,085. ORIENTAL SPICE AND DESIGN. Shulton, Inc., assignee of Ellen Kaye Laboratories, Inc. SN 261,472. Pub. 3-26-68. Filed 12-27-66.

869,086. PERLINETTE. Rene Duval, nee Germaine Nicolle, d.b.a. Parfums Volnay. SN 270,909. Pub. 2-18-69. Filed 5-8-67.

869,087. DAINTY MIST. Richard Hudnut. SN 280,059. Pub. 2-18-69. Filed 9-11-67.

869,088. COLOR FLINGERS. Richard Hudnut. SN 280,060. Pub. 2-18-69. Filed 9-11-67.

869,089. NECESSAIRE. Richard Hudnut. SN 280,062. Pub. 2-18-69. Filed 9-11-67.

869,090. NUTRASPA. Owen Laboratories, Inc. SN 281,105. Pub. 2-18-69. Filed 9-25-67.

869,091. MINE. The Emko Company. SN 286,656. Pub. 2-18-69. Filed 12-11-67.

869,092. BECAUSE. The Emko Company. SN 286,657. Pub. 2-18-69. Filed 12-11-67.

869,093. BODYLAC. Invincible Products Corporation. SN 289,508. Pub. 2-18-69. Filed 1-24-68.

869,094. DAGGETT AND RAMSDELL PERFECT AND DESIGN. Daggett & Ramsdell International Corp. SN 289,882. Pub. 2-18-69. Filed 1-30-68.

869,095. IMPERIAL COLLECTION. Cosmetics Manufacturing Company, d.b.a. Imperial Del Oro. SN 291,139. Pub. 2-18-69. Filed 2-15-68.

869,096. DIAMOND SHEEN AND DESIGN. Pride Stores, Inc., d.b.a. Diamond Sheen Products. SN 292,126. Pub. 2-18-69. Filed 2-28-68.

869,097. KISMET. Tiffany Perfumes, Ltd. SN 296,055. Pub. 2-18-69. Filed 4-19-68.

869,098. DURAMENTA. Bristol-Myers Company. SN 296,635. Pub. 2-18-69. Filed 4-26-68.

869,099. SUMMER GLO. Bristol-Myers Company. SN 296,640. Pub. 2-18-69. Filed 4-26-68.

869,100. THE DISK. Clairol Incorporated. MULTIPLE CLASS (Classes 51 and 52). SN 296,913. Pub. 2-18-69. Filed 4-30-68.

869,101. FABULIGHTENER. Revlon, Inc. SN 296,983. Pub. 2-18-69. Filed 4-30-68.

869,102. SEE THE LIGHT. Avon Products, Inc. SN 297,944. Pub. 2-18-69. Filed 5-13-68.

869,103. SUSURRO. USV Pharmaceutical Corporation. SN 298,068. Pub. 2-18-69. Filed 5-13-68.

869,104. YEARNING. Avon Products, Inc. SN 298,544. Pub. 2-18-69. Filed 5-20-68.

869,105. INTERCHANGE. Avon Products, Inc. SN 298,547. Pub. 2-18-69. Filed 5-20-68.

869,106. MODERNIQUE. Avon Products, Inc. SN 298,549. Pub. 2-18-69. Filed 5-20-68.

869,107. EUGENE. Rayette-Faberge, Inc. SN 298,627. Pub. 2-18-69. Filed 5-20-68.

869,108. SUMMER GLO. Bristol-Myers Company. SN 298,799. Pub. 2-18-69. Filed 5-22-68.

869,109. UNEXPECTED. Avon Products, Inc. SN 299,293. Pub. 2-18-69. Filed 5-29-68.

869,110. TEMPLE BELLS. Avon Products, Inc. SN 299,303. Pub. 2-18-69. Filed 5-29-68.

869,111. BIRD IN FLIGHT. Avon Products, Inc. SN 299,307. Pub. 2-18-69. Filed 5-29-68.

869,112. ABSTRACT. Avon Products, Inc. SN 299,308. Pub. 2-18-69. Filed 5-29-68.

869,113. PLURAL. Alberto-Culver Company. SN 302,257. Pub. 2-18-69. Filed 7-9-68.

869,114. THE YEARLINGS. Alberto-Culver Company. SN 302,276. Pub. 2-18-69. Filed 7-9-68.

869,115. ICS. La Maur, Inc. SN 302,680. Pub. 2-18-69. Filed 7-15-68.

869,116. LEMON BRITE. The Gillette Company, d.b.a. The Toni Company. SN 302,890. Pub. 2-18-69. Filed 7-17-68.

869,117. GOLD AWARD. Ellen Kaye Laboratories, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 303,095. Pub. 2-18-69. Filed 7-19-68.

869,118. BEAUTIFAIR. Ray Drug Company, Inc. SN 304,961. Pub. 2-18-69. Filed 8-12-68.

869,119. CHRYSALIS. Charmaceuticals, Inc. SN 305,268. Pub. 2-18-69. Filed 8-16-68.

869,120. HEAT WAVE. Carol Edwards, Inc. SN 306,730. Pub. 2-18-69. Filed 9-6-68.

869,121. DEE DEE. Chas. Pfizer & Co., Inc. SN 307,392. Pub. 2-18-69. Filed 9-16-68.

869,122. IMPROMPTU. Chas. Pfizer & Co., Inc. SN 307,393. Pub. 2-18-69. Filed 9-16-68.

869,123. FEEL FREE. The Gillette Company. SN 310,520. Pub. 2-18-69. Filed 10-25-68.

869,124. GENTLE STRENGTH. Yardley of London, Inc. SN 310,739. Pub. 2-18-69. Filed 10-29-68.

869,125. SLICKER FLASH. Yardley of London, Inc. SN 310,741. Pub. 2-18-69. Filed 10-29-68.

Class 52 — Detergents and Soaps

869,100. (See Class 51 for this trademark.)

869,117. (See Class 51 for this trademark.)

869,126. DUSTOP. H. Kohnstamm & Co., Inc. SN 183,603. Pub. 11-24-64. Filed 12-26-63.

869,127. GUARD-ALL. Epic Chemicals, Inc. SN 222,564. Pub. 9-20-66. Filed 7-2-65.

869,128. CHEM-O. Madison Chemical Corporation. SN 279,312. Pub. 2-18-69. Filed 8-29-67.

869,129. CESS-FLO. Pequa Industries, Inc. SN 281,388. Pub. 2-18-69. Filed 9-28-67.

869,130. KEY BRITE AND DESIGN. Keystone Chemical Company, Inc. SN 283,128. Pub. 2-18-69. Filed 10-23-67.

869,131. DM-9. American Heritage Products, Inc. SN 298,527. Pub. 2-18-69. Filed 5-20-68.

869,132. YEARNING. Avon Products, Inc. SN 298,546. Pub. 2-18-69. Filed 5-20-68.

869,133. INTERCHANGE. Avon Products, Inc. SN 298,548. Pub. 2-18-69. Filed 5-20-68.

869,134. UNEXPECTED. Avon Products, Inc. SN 299,294. Pub. 2-18-69. Filed 5-29-68.

869,135. TAI WINDS. Avon Products, Inc. SN 299,299. Pub. 2-18-69. Filed 5-29-68.

869,136. BIRD IN FLIGHT. Avon Products, Inc. SN 299,306. Pub. 2-18-69. Filed 5-29-68.

869,137. ABSTRACT. Avon Products, Inc. SN 299,309. Pub. 2-18-69. Filed 5-29-68.

869,138. NIGHT SOUNDS. Avon Products, Inc. SN 299,310. Pub. 2-18-69. Filed 5-29-68.

869,139. EXPRESSION. Avon Products, Inc. SN 299,312. Pub. 2-18-69. Filed 5-29-68.

869,140. CTI AND DESIGN. Chemical Technical Industries, Inc. SN 302,917. Pub. 2-18-69. Filed 7-17-68.

Service Marks

Class 100 — Miscellaneous

869,141. BABY SITTERS OF AMERICA AND DESIGN. Baby Sitters of America, Inc. SN 261,566. Pub. 2-18-69. Filed 12-28-66.

869,142. RANGE RIDER OLD VULCAN BOB WIGGS AND DESIGN. Herbert H. Terrell, d.b.a. B and H Grill. SN 264,988. Pub. 2-18-69. Filed 2-17-67.

869,143. FULL MOLD PROCESS AND DESIGN. Full Mold Process, Inc. SN 265,300. Pub. 2-18-69. Filed 2-23-67.

869,144. BREVATOME. Societe Francaise pour la Gestion des Brevets d'Application Nucleaire. MULTIPLE CLASS (Classes 100 and 101). SN 276,272. Pub. 2-18-69. Filed 7-10-67.

869,145. LEASCO AND DESIGN. Leasco Data Processing Equipment Corporation. SN 277,560. Pub. 2-18-69. Filed 8-4-67.

869,146. OPTI-COPY. Western Blue Print Company. MULTIPLE CLASS (Classes 100 and 106). SN 278,838. Pub. 2-18-69. Filed 8-22-67.

869,147. RHUBUN. Sunshine Parti-Pal, Inc. SN 279,228. Pub. 2-18-69. Filed 8-28-67.

869,148. M+. Neal Mitchell Associates Incorporated. SN 280,079. Pub. 2-18-69. Filed 9-11-67.

869,149. THE NATURE CONSERVANCY AND DESIGN. The Nature Conservancy. SN 280,449. Pub. 2-18-69. Filed 9-15-67.

869,150. DESIGN OF TWO MEN. Russell's Foods, Inc., by change of name from Tas-Tee Catering, Inc. MULTIPLE CLASS (Classes 100 and 101). SN 281,831. Pub. 2-18-69. Filed 10-4-67.

869,151. "TAKE A BOY OR GIRL HUNTING AND FISHING" AB & HA AMERICAN BOATING & HUNTING ASSOCIATION AND DESIGN. American Boating & Hunting Association. SN 283,210. Pub. 2-18-69. Filed 10-24-67.

869,152. MOBILE HOST. Canteen Corporation. SN 285,197. Pub. 2-18-69. Filed 11-20-67.

869,153. ZABERVILLE. Rerebaz, Inc. SN 286,177. Pub. 2-18-69. Filed 12-4-67.

869,154. VALHALLA INN AND DESIGN. Valhalla Inn Limited. SN 286,737. Pub. 2-18-69. Filed 12-11-67.

869,155. VALHALLA INN. Valhalla Inn Limited. SN 286,738. Pub. 2-18-69. Filed 12-11-67.

869,156. STOWS. Stows of Manchester, Inc., by change of name from New England Snacks, Inc. SN 287,667. Pub. 2-18-69. Filed 12-27-67.

869,157. MR. CASH AND DESIGN. Gilman Street Pharmacy. SN 291,219. Pub. 2-18-69. Filed 2-6-68.

869,158. HEAD OF A MAN (DESIGN). Gilman Street Pharmacy. SN 291,223. Pub. 2-18-69. Filed 2-6-68.

869,159. THE FAMILY KITCHEN. John H. Kritikson, d.b.a. The Family Kitchen. SN 291,224. Pub. 2-18-69. Filed 10-25-67.

869,160. THE TUFTED TEXTILE CAPITAL OF THE WORLD AND DESIGN. Dalton-Whitfield Chamber of Commerce, Inc. SN 295,515. Pub. 2-18-69. Filed 4-12-68.

869,161. RUNAWAY BAY CLUB. Ray L. Allen. SN 296,088. Pub. 2-18-69. Filed 4-22-68.

869,162. NATIONAL KEY-MAN. National Work Clothes Rental. SN 296,707. Pub. 2-18-69. Filed 4-26-68.

869,163. CARPET CAPITAL OF THE WORLD ETC. AND DESIGN. Dalton-Whitfield Chamber of Commerce, Inc. SN 300,262. Pub. 2-18-69. Filed 6-12-68.

869,164. TOTE-A-POKE. Fam Rec Corporation. SN 310,221. Pub. 2-18-69. Filed 10-22-68.

Class 101 — Advertising and Business

869,144. (See Class 100 for this trademark.)

869,150. (See Class 100 for this trademark.)

869,165. GLAMOUR KITTY CONTEST AND DESIGN. Johnson-March Corp., d.b.a. Triple E Company. SN 239,775. Pub. 2-18-69. Filed 2-28-66.

869,166. TRAIL BLAZERS OF CHEMISTRY. The Chicago Section of the American Chemical Society. SN 265,692. Pub. 2-18-69. Filed 3-1-67.

869,167. B. Novo Services, Inc. SN 275,869. Pub. 2-18-69. Filed 7-12-67.

869,168. CINDERELLA OF THE WORLD. World Food and Agricultural Foundation, Inc. SN 275,890. Pub. 2-18-69. Filed 7-12-67.

869,169. P AND DESIGN. Harold M. Pitman Company. SN 282,624. Pub. 2-18-69. Filed 10-16-67.

869,170. GOLD STAR AND DESIGN. Parts Distributors Warehouse, Inc. SN 289,330. Pub. 2-18-69. Filed 1-22-68.

869,171. READY MONEY. J & H International Corporation. SN 292,694. Pub. 2-18-69. Filed 3-7-68.

869,172. WINELAND-U.S.A. San Martin Vineyards Company, d.b.a. San Martin Vineyards Co. SN 293,403. Pub. 2-18-69. Filed 3-15-68.

Class 102 — Insurance and Financial

869,173. GOLI. Crown Life Insurance Company. SN 281,362. Pub. 2-18-69. Filed 9-28-67.

869,174. I AND DESIGN. The Investamerica Group, Inc. SN 300,154. Pub. 2-18-69. Filed 6-11-68.

869,175. SUNCARD AND DESIGN. Suncard Services, Inc. SN 311,105. Pub. 2-18-69. Filed 11-1-68.

Class 103 — Construction and Repair

869,176. SYMPHONY OF SUDS. The Siggins Corporation. SN 284,112. Pub. 2-18-69. Filed S.R. 11-3-67; Am. P.R. 11-12-68.

869,177. GAF AND DESIGN. GAF Corporation. SN 309,426. Pub. 2-18-69. Filed 10-11-68.

869,178. WE ARE PROUD OF OUR CONNECTIONS. Brennan Bros. Co. Inc. SN 310,821. Pub. 2-18-69. Filed 10-30-68.

Class 106 — Material Treatment

869,146. (See Class 100 for this trademark.)

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

SECTION 1

(Combined Certificates)

869,186. Candyland, Inc., Jesup, Ga., by assignment and change of name from W. O. Patterson, d.b.a. The Towel and Tog Shop, Griffin, Ga. SN 271,827. Filed P.R. 5-18-67; Am. S.R. 8-16-68.

THE TOWEL AND TOG SHOP

Class 39—Clothing

For Women's and Children's Clothing—Namely, Beachwear, Swimwear, Neckwear, Dresses and Blouses (Int. Cl. 25).

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Towels and Pillow Slips (Int. Cl. 24).

First use Mar. 30, 1965.

SECTION 2

Class 1 — Raw or Partly Prepared Materials

869,179. Jack R. Warwick, New York, N.Y. SN 274,275. Filed P.R. 6-19-67; Am. S.R. 11-21-68.

SUPERWOOL

For Chemically Treated Wool Fibers (Int. Cl. 22).
First use May 1, 1967.

Class 6 — Chemicals and Chemical Compositions

869,180. Baxter Laboratories, Inc., Morton Grove, Ill. SN 284,440. Filed P.R. 11-9-67; Am. S.R. 1-23-69.

G-6-PD-SCREEN

For Diagnostic Screening Test for Glucose-6-Phosphate Dehydrogenase Deficiency for Use in the Laboratory (Int. Cl. 1).
First use on or about Sept. 13, 1967.

Class 18 — Medicines and Pharmaceutical Preparations

869,181. W. R. Grace & Co., New York, N.Y. SN 290,601. Filed P.R. 2-8-68; Am. S.R. 1-28-69.

SOW BisKit

For Food Supplement Containing Vitamins and Minerals for Sows During Gestation (Int. Cl. 5).
First use Mar. 16, 1967.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

869,182. Crane Packing Company, Morton Grove, Ill. SN 265,613. Filed P.R. 2-28-67; Am. S.R. 1-31-69.

THRED-TAPER

For Machine for Wrapping Tape Around a Threaded Article (Int. Cl. 7).
First use Feb. 8, 1966.

Class 26 — Measuring and Scientific Appliances

869,183. Marvel Engineering Company, Chicago, Ill. SN 283,019. Filed P.R. 10-20-67; Am. S.R. 2-6-69.

FILTERSIZOR

For Device in the Nature of a Slide Rule for Use in Determining Sizes of Filter Elements in Relation to Fluid Flow, Fluid Type, Filter Type and Filter Media Coarseness (Int. Cl. 9).
First use Aug. 10, 1967.

Class 36 — Musical Instruments and Supplies

869,184. Eastern Specialties Corporation, Mount Arlington, N.J. SN 294,482. Filed 2-24-69.

STEREO-MAGIC

For 8 Track Stereo Tape Players and Speakers Therefor (Int. Cl. 9).
First use Dec. 15, 1967.

Class 38 — Prints and Publications

869,185. Football News Company, Detroit, Mich. SN 300,275. Filed P.R. 6–12–68; Am. S.R. 2–17–69.

BASKETBALL WEEKLY

For Weekly Newspaper (Int. Cl. 16).
First use Nov. 14, 1967.

Class 39 — Clothing

869,186. See Section 1 (Combined Certificate).

Class 40 — Fancy Goods, Furnishings, and Notions

869,187. Posner Laboratories, Inc., Corona, N.Y. SN 284,431. Filed P.R. 11–9–67; Am. S.R. 1–27–69.

CURLY-LOKS

For Wigs and Hair Pieces (Int. Cl. 26).
First use Oct. 24, 1967.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

869,186. See Section 1 (Combined Certificate).

869,188. Textile Company of America, Los Angeles, Calif. SN 270,974. Filed P.R. 5–8–67; Am. S.R. 12–30–68.

fashion-in-prints

For Fabric of Cotton, Nylon, Silk, Rayon, Wool, Polyester and Mixtures Thereof Used for Apparel and Decorative Purposes (Int. Cl. 24).
First use Mar. 31, 1967.

Class 45 — Soft Drinks and Carbonated Waters

869,189. General Foods Corporation, White Plains, N.Y. SN 284,364. Filed P.R. 11–8–67; Am. S.R. 12–19–68.

TWIST 'N SHAKE

For Non-Alcoholic Cocktail Mix (Int. Cl. 32).
First use Aug. 3, 1967.

Class 46 — Foods and Ingredients of Foods

869,190. The W. E. Long Co.-Independent Bakers Co-Operative, Chicago, Ill. SN 269,434. Filed P.R. 4–18–67; Am. S.R. 1–30–69.

HONEY MEAL

For Bread (Int. Cl. 30).
First use July 8, 1966.

869,191. General Foods Corporation, White Plains, N.Y. SN 278,098. Filed P.R. 8–11–67; Am. S.R. 10–3–68.

SMOOTH 'N CREAMY

For Frozen Prepared Pudding (Int. Cl. 30).
First use July 28, 1967.

869,192. General Foods Corporation, White Plains, N.Y. SN 284,362. Filed P.R. 11–8–67; Am. S.R. 1–3–69.

TOSS 'N SERVE

For Salad Dressing Mix (Int. Cl. 29).
First use July 26, 1967.

869,193. Loggins Meat Co., Tyler, Tex. SN 285,930. Filed P.R. 11–30–67; Am. S.R. 2–7–69.

Flavor-Best

For Fresh Meat and Prepared Meat Products (Int. Cl. 29).
First use Apr. 1, 1967.

869,194. Etablissements L. Breton & Fils, Vitry-sur-Seine (Val-de-Marne), France. SN 287,534. Filed P.R. 12–26–67; Am. S.R. 10–23–68.

L. BRETON

Owner of French Reg. No. 712,613, dated Mar. 25, 1966.
For Fruit Preserves and Confectionery—Namely, Glazed Fruits and Glazed Nuts (Int. Cls. 29 and 30).

869,195. Horlicks Corporation, Racine, Wis. SN 287,555. Filed P.R. 12–26–67; Am. S.R. 12–6–68.

SMOOTH SHAKE

For Food Beverage in Powder Form (Int. Cl. 30).
First use Nov. 29, 1967.

869,196. Seabrook Farms Co., Inc., Seabrook, N.J. SN 289,341. Filed P.R. 1–22–68; Am. S.R. 10–30–68.

SWEET POTATOES HAWAIIAN

For Frozen Prepared Sweet Potatoes (Int. Cl. 29).
First use November 1966.

869,197. Fruits of Four Seasons, Lakeland, Fla. SN 293,371. Filed P.R. 3–15–68; Am. S.R. 1–30–69.

Fruits of Four Seasons

For Fruit Salad Packed in Sealed Jars and Composed of Orange Segments, Grapefruit Segments, Pineapple Chunks and Cherries (Int. Cl. 29).
First use Dec. 15, 1967.

869,198. Superior Growers & Packers, Inc., Los Angeles, Calif. SN 308,753. Filed P.R. 10–3–68; Am. S.R. 1–23–69.

Super Pak

For Fresh Carrots (Int. Cl. 31).
First use Oct. 21, 1967.

Class 49 — Distilled Alcoholic Liquors

869,199. Himmel Distillery Products, Inc., d.b.a. Dunhill Company, Ltd., Linden, N.J. SN 290,853. Filed 1–30–69.

PARIS

For Liqueurs, Fruit Flavored Brandies and Prepared Alcoholic Cocktails (Int. Cl. 33).
First use Jan. 17, 1968.

Class 50 — Merchandise Not Otherwise Classified

869,200. Kwikform Limited, Birmingham, England. SN 289,512. Filed P.R. 1–24–68; Am. S.R. 1–24–69.

KWIKSTAGE

Owner of British Reg. No. B860,995, dated Feb. 29, 1964.
For Metal Scaffolding and Parts and Fittings Therefor (Int. Cl. 6).

Class 51 — Cosmetics and Toilet Preparations

869,201. Yardley of London, Inc., Totowa, N.J. SN 258,742. Filed P.R.11–15–66; Am. S.R. 1–9–69.

DOLLYS

For Lipstick and Lip Polish (Int. Cl. 3).
First use July 29, 1966.

869,202. Kenra, Incorporated, Indianapolis, Ind. SN 272,502. Filed P.R. 5–26–67; Am. S.R. 1–29–69.

A TOUCH OF BODY

For Hair Waving Lotion and Hair Lotion Neutralizer (Int. Cl. 3).
First use November 1966.

869,203. L'Oreal, Paris, France. SN 284,686. Filed P.R. 11–13–67; Am. S.R. 1–29–69.

SUPER BLONDE

For Hair Lightener (Int. Cl. 3).
First use Apr. 14, 1967; in commerce Apr. 14, 1967.

869,204. Clairol Incorporated, New York, N.Y. SN 292,761. Filed P.R. 3–8–68; Am. S.R. 1–27–69.

frost&tip

For Hair Lightening and Hair Coloring Preparations (Int. Cl. 3).
First use Nov. 27, 1967.

Class 52 — Detergents and Soaps

869,205. Wasatch Chemical Company, Salt Lake City, Utah. SN 295,269. Filed P.R. 4–9–68; Am. S.R. 1–23–69.

ALTERNATE

For Laundry Detergent in Powdered Form (Int. Cl. 3).
First use Dec. 13, 1967.

TRADEMARK REGISTRATIONS RENEWED

32,870. SENSATION. Cl. 51 (Int. Cl. 3). 5–16–1890.
33,280. GEOMETRICAL RHOMB FIGURE DESIGN. Cl. 18 (Int. Cl. 5). 7–25–1899.
71,516. LUXURIA. Cl. 51 (Int. Cl. 3). 12–1–08.
72,303. "USMC" MONOGRAM. Cl. 23 (Int. Cl. 7). 1–12–09.
72,304. IVI. Cl. 23 (Int. Cl. 7). 1–12–09.
72,871. CASE. Cl. 23 (Int. Cl. 7). 3–2–09.
73,280. FILTRINE. Cl. 31 (Int. Cl. 24). 4–6–09.
73,700. "OPM" ENCLOSED BY TRIANGULAR DESIGN. Cl. 17 (Int. Cl. 34). 5–11–09.
73,947. CASE. Cl. 23 (Int. Cl. 7). 6–1–09.
74,473. REPRESENTATION OF HORSESHOE. Cl. 16 (Int. Cl. 2). 7–13–09.
74,603. "NAP" AND REPRESENTATION OF BELL. Cl. 25 (Int. Cl. 6). 7–27–09.
246,964. DEL-DIXI. Cl. 46 (Int. Cl. 29). 9–18–28.
247,432. JUNIOR. Cl. 46 (Int. Cl. 29). 9–25–28.
249,276. LIMB'RTONE. Cl. 18 (Int. Cl. 5). 11–13–28.
252,231. PERROL. Cl. 51 (Int. Cl. 3). 1–29–29.
252,556. REPRESENTATION OF A HAND. Cl. 6 (Int. Cl. 5). 2–12–29.
252,572. SULPHUR SMOKE. Cl. 6 (Int. Cl. 5). 2–12–29.
252,933. OLD MISSION. Cl. 46 (Int. Cl. 30). 2–19–29.
252,992. EKCOWARE. Cl. 13 (Int. Cl. 21). 2–19–29.
253,255. BE-BE-TEX. Cl. 5 (Int. Cl. 1). 2–26–29.
253,271. SOUTHERN. Cl. 15 (Int. Cl. 4). 2–26–29.
253,361. SHELL-ANE. Cl. 6 (Int. Cl. 4). 2–26–29.
254,304. PROGYNON. Cl. 18 (Int. Cl. 5). 3–19–29.
254,699. "DELTA AND DESIGN. Cl. 46 (Int. Cl. 30). 3–26–29.
254,858. RED STRIPE DESIGN. Cl. 37 (Int. Cl. 16). 4–2–29.
254,859. "RED STRIPE" AND DESIGN. Cl. 37 (Int. Cl. 16). 4–2–29.
254,979. "AUTEX" AND DESIGN. Cl. 21 (Int. Cl. 9). 4–2–29.
255,202. GLUTRIN. Cl. 5 (Int. Cl. 1). 4–16–29.
255,741. PARKER. Cl. 37 (Int. Cl. 16). 4–30–29.
256,026. A. 1. Cl. 46 (Int. Cl. 30). 5–7–29.
256,566. "GOLD BOAT" AND REPRESENTATION OF SAILBOAT. Cl. 46 (Int. Cl. 29). 5–21–29.
256,770. "EMPIRE" AND DESIGN. Cl. 21 (Int. Cl. 9). 5–21–29.
256,864. HI-WAY. Cl. 34 (Int. Cl. 11). 5–28–29.

257,153. DRIAL. Cl. 18 (Int. Cl. 5). 5-28-29.
257,464. "KARL'S KUSTOM MADE" ETC. AND REPRESENTATION OF SHOEMAKER. Cl. 39 (Int. Cl. 25). 6-11-29.
257,715. FALCO. Cl. 11 (Int. Cl. 2). 6-18-29.
257,790. HI-LUX. Cl. 34 (Int. Cl. 11). 6-18-29.
258,371. "VALET" AND REPRESENTATION OF RAZOR BLADE. Cl. 23 (Int. Cl. 8). 7-2-29.
258,573. DUCLEAN. Cl. 52 (Int. Cl. 3). 7-9-29.
439,799. BROTHERHOOD. Cl. 17 (Int. Cl. 34). 7-20-48.
439,889. MAGIKITCH'N AND DESIGN. Cl. 34 (Int. Cl. 11). 7-27-48.
441,960. MICROLINE. Cl. 26 (Int. Cl. 9). 2-8-49.
442,088. RAYDIST. Cl. 26 (Int. Cl. 9). 2-8-49.
442,197. CIBANTINE. Cl. 6 (Int. Cl. 2). 3-15-49.
442,374. DIAMOND AND DESIGN. Cl. 23 (Int. Cl. 12). 4-5-49.
442,416. REPRESENTATION OF A LITTLE CROW. Cl. 46 (Int. Cl. 30). 4-12-49.
442,461. SILVER FOAM. Cl. 52 (Int. Cl. 3). 4-12-49.
442,760. PHOTO-FLO. Cl. 6 (Int. Cl. 1). 5-31-49.
442,779. PARAMOUNT. Cl. 35 (Int. Cl. 12). 5-31-49.
501,222. MAGIKITCH'N AND DESIGN. Cl. 21 (Int. Cl. 11). 7-27-48.
503,852. MB. Cl. 23 (Int. Cl. 7). 11-2-48.
504,290. BURGESS. Cl. 21 (Int. Cl. 8). 11-30-48.
505,102. LESQUENDIEU. Cl. 52 (Int. Cl. 3). 12-21-48.
505,695. PFT AND DESIGN. Cl. 23 (Int. Cl. 11). 1-18-49.
506,313. RAINBOW. Cl. 19 (Int. Cl. 12). 2-1-49.
506,476. MINI-SPRING. Cl. 21 (Int. Cl. 9). 2-8-49.
506,477. MINI-SHIELD. Cl. 21 (Int. Cl. 9). 2-8-49.
506,529. SPRUCE EXTRACT. Cl. 6 (Int. Cl. 1). 2-8-49.
506,561. HEWITT. Cl. 52 (Int. Cl. 3). 2-8-49.
506,750. METROCIN. Cl. 18 (Int. Cl. 5). 2-15-49.
506,794. SPRUCE! Cl. 52 (Int. Cl. 3). 2-15-49.
506,915. REMBRANDT. Cl. 37 (Int. Cl. 16). 2-22-49.
506,999. BAGER AND DIAMOND DESIGN. Cl. 42 (Int. Cl. 24). 2-22-49.
507,026. CREAMETTE. Cl. 17 (Int. Cl. 34). 2-22-49.
507,028. NEWPORT. Cl. 1 (Int. Cl. 2). 2-22-49.
507,052. SOPHISTI-CREME. Cl. 51 (Int. Cl. 3). 2-22-49.
507,060. THE MAINSPRING. Cl. 38 (Int. Cl. 16). 2-22-49.
507,101. SHUR-SAFE. Cl. 35 (Int. Cl. 12). 2-22-49.
507,144. SPILL-STOP. Cl. 50 (Int. Cl. 20). 3-1-49.
507,204. WYETH IN SHIELD AND BANDS. Cl. 18 (Int. Cl. 5). 3-1-49.
507,337. DOT. Cl. 40 (Int. Cl. 26). 3-8-49.
507,338. DOT SYMBOL. Cl. 40 (Int. Cl. 26). 3-8-49.
507,406. CONTINENTAL. Cl. 14 (Int. Cl. 6). 3-8-49.
507,430. FROM NINE TO FIVE. Cl. 38 (Int. Cl. 16). 3-8-49.
507,515. DAREX. Cl. 16 (Int. Cl. 2). 3-15-49.
507,570. KOILSTRIP. Cl. 21 (Int. Cl. 11). 3-15-49.
507,711. GLISSENITE. Cl. 52 (Int. Cl. 3). 3-15-49.
507,796. CLARK. Cl. 19 (Int. Cl. 12). 3-22-49.
507,812. TRICO. Cl. 19 (Int. Cl. 12). 3-22-49.
507,918. BENNETT. Cl. 26 (Int. Cl. 9). 3-22-49.
507,985. JACI AND DESIGN. Cl. 18 (Int. Cl. 5). 3-22-49.
508,108. EAT MAID-RITE EATS AND DESIGN. Cl. 46 (Int. Cl. 29). 3-29-49.
508,149. GRAD-U-RELAY. Cl. 26 (Int. Cl. 11). 4-5-49.
508,591. KLOZURE. Cl. 35 (Int. Cl. 17). 4-12-49.
508,612. ARDOL. Cl. 6 (Int. Cl. 1). 4-12-49.
508,657. MISCELLANEOUS DESIGN. Cl. 105 (Int. Cl. 39). 4-12-49.
508,686. THE DOT LINE. Cl. 40 (Int. Cl. 26). 4-19-49.
508,806. WILSHIRE. Cl. 3 (Int. Cl. 18). 4-19-49.
508,844. SQUARE DEALING AND DESIGN. Cl. 102 (Int. Cl. 36). 4-19-49.
508,932. MERKIN AND DESIGN. Cl. 12 (Int. Cls. 17 and 19). 4-26-49.
509,064. TRISULFANOL. Cl. 18 (Int. Cl. 5). 4-26-49.
509,070. SPEIDEL. Cl. 28 (Int. Cl. 14). 4-26-49.
509,301. CORY. Cl. 21 (Int. Cl. 11). 5-3-49.
509,412. LAWRENCE CLOTHES. Cl. 39 (Int. Cl. 25). 5-3-49.
509,550. EMULPHOGENE. Cl. 6 (Int. Cl. 1). 5-10-49.
509,601. ADECO. Cl. 23 (Int. Cl. 7). 5-10-49.
509,659. SURE-HOLD. Cl. 5 (Int. Cls. 16 and 17). 5-10-49.
509,718. COMET. Cl. 19 (Int. Cl. 12). 5-10-49.
509,742. DELMOR. Cl. 18 (Int. Cl. 5). 5-10-49.
509,744. ADRIENNE. Cl. 51 (Int. Cl. 3). 5-10-49.
509,906. THERMO-WATT. Cl. 21 (Int. Cl. 11). 5-17-49.
510,001. WHEEL TRUING BRAKE SHOE. Cl. 19 (Int. Cl. 12). 5-17-49.
510,063. SOUTHPORT. Cl. 16 (Int. Cl. 2). 5-24-49.
510,065. MR. BIG. Cl. 39 (Int. Cl. 25). 5-24-49.
510,127. THE FLOW LINE. Cl. 38 (Int. Cl. 16). 5-24-49.
510,416. BE-GONE. Cl. 18 (Int. Cl. 5). 5-31-49.
510,436. NORDSTROM. Cl. 13 (Int. Cl. 6). 5-31-49.
510,593. WARD LEONARD. Cl. 21 (Int. Cl. 9). 6-7-49.
510,744. GLUTRIN. Cl. 6 (Int. Cl. 1). 6-7-49.
510,846. VM AND DESIGN. Cl. 18 (Int. Cl. 5). 6-14-49.
510,890. GOODMAN GAS MAIN STOPPER. Cl. 13 (Int. Cl. 6). 6-14-49.
510,992. CHANEL. Cl. 51 (Int. Cl. 3). 6-14-49.
511,255. FREE CHOICE AND DESIGN. Cl. 46 (Int. Cl. 30). 6-21-49.
511,332. TOASTSWELL. Cl. 21 (Int. Cl. 11). 6-21-49.
511,415. LA GRANDE. Cl. 32 (Int. Cl. 20). 6-21-49.
511,463. THE PAPER MATTER. Cl. 38 (Int. Cl. 16). 6-21-49.
511,584. ATF. Cl. 23 (Int. Cls. 7 and 9). 6-28-49.
512,068. ETON. Cl. 28 (Int. Cl. 8). 7-12-49.
512,073. PRINTWEIGH. Cl. 26 (Int. Cl. 9). 7-12-49.
512,259. AIR-CHROM. Cl. 14 (Int. Cl. 6). 7-12-49.
512,293. ROUTE OF THE 400 FLEET. Cl. 105 (Int. Cl. 39). 7-12-49.
512,700. MOORE'S. Cl. 34 (Int. Cl. 11). 7-26-49.
512,734. CANDENS. Cl. 16 (Int. Cl. 2). 7-26-49.
512,742. CLARK. Cl. 28 (Int. Cls. 7 and 12). 7-26-49.
512,863. WYAMINE. Cl. 18 (Int. Cl. 5). 7-26-49.
512,873. CHEK-RUST AND DESIGN. Cl. 16 (Int. Cl. 2). 7-26-49.
512,988. A TIMME TUFT. Cl. 39 (Int. Cl. 25). 8-2-49.
513,201. HEATBATH. Cl. 6 (Int. Cl. 1). 8-2-49.
513,444. V-8. Cl. 22 (Int. Cl. 28). 8-9-49.
513,528. KLING-TITE. Cl. 16 (Int. Cl. 2). 8-9-49.

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657,800. AMERICAN BUILDER. Cl. 38. 1-28-58.
658,353. SANITONE ETC. AND DESIGN. Cl. B. 2-11-58.
798,461. JEL-N-SERVE. Cl. 18. 11-9-65.
821,490. DONZI MARINE AND DESIGN. Cl. 19. 1-3-67.

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The following registrations issued Mar. 19, 1963

746,781. DURENKA. Cl. 1.
746,782. ENKOR. Cl. 1.
746,786. POLYALL. Cl. 1.
746,790. HYDRAPHAN. Cl. 2.
746,791. HYDRAPHAN AND DESIGN. Cl. 2.
746,792. WILLOWISP AND DESIGN. Cl. 2.
746,795. NISTANN. Cl. 6.
746,797. GRODRIN. Cl. 6.
746,798. DIVERGO. Cl. 6.
746,800. BIG KERNEL. Cl. 6.
746,809. REPRESENTATION OF MINER AND BURRO. Cl. 12.
746,816. TRAC-FED. Cl. 13.
746,818. SHUR-BITE. Cl. 13.
746,819. ZENITH. Cl. 13.
746,822. TAC. Cl. 15.
746,823. "6-T-1." Cl. 16.
746,828. INTER-VALS. Cl. 18.
746,834. FLAVOCILLIN. Cl. 18.
746,837. URBIMEGAN. Cl. 18.
746,838. TR 3 TRIUMPH AND BADGE DESIGN. Cl. 19.
746,840. WORKMASTER. Cl. 19.
746,846. MAITROL AND DESIGN. Cl. 21.
746,849. UNIVOX. Cl. 21.
746,851. MADEBA. Cl. 21.
746,853. AIR-O-SHEET. Cl. 22.
746,857. SANTA TOTE. Cl. 22.
746,858. PUZZLE PAL. Cl. 22.

746,865. GALILEO'S WHEEL. Cl. 22.
746,877. AQUA-FLATOR. Cl. 23.
746,878. OLD SCRATCH FACE FLY FLAP. Cl. 23.
746,879. POLAROSET. Cl. 26.
746,880. NU-ERA AND DESIGN. Cl. 26.
746,881. DIGI-DYNE DD AND DESIGN. Cl. 26.
746,884. UNIVOX. Cl. 26.
746,886. MINITUTOR. Cl. 26.
746,889. MAINSTREETER. Cl. 26.
746,890. M'LADY. Cl. 26.
746,892. COLOR-BRITE. Cl. 26.
746,902. 14K AND DESIGN. Cl. 28.
746,904. BBG. Cl. 28.
746,906. WCS CO. Cl. 28.
746,917. CTP (DESIGN). Cl. 28.
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746,923. MINIDOR. Cl. 31.
746,925. HAWTHORNE. Cl. 34.
746,929. CUSHION-CLAW. Cl. 35.
746,938. WHITING CLERICAL BOND. Cl. 37.
746,942. THE WORLD OF TRAVEL. Cl. 38.
746,943. IN A NUTSHELL AND DESIGN. Cl. 38.
746,945. THE JOURNAL OF NEW DRUGS. Cl. 38.
746,947. TAFFY'S TIPS. Cl. 38.
746,952. FLYER'S FORUM AND DESIGN. Cl. 38.
746,953. PACIFIC PROGRESS. Cl. 38.
746,955. DINOSAURIUM. Cl. 38.
746,957. T AND DESIGN. Cl. 38.
746,958. HELIOS. Cl. 38.
746,960. WEATHERVANE IN CIRCLE (DESIGN). Cl. 38.
746,961. PAUL HIGHTOWER SPEAKS. Cl. 38.
746,962. SENIOR YEARS. Cl. 38.
746,966. THE LATER YEARS. Cl. 38.
746,973. THE DUFFER. Cl. 39.
746,977. KLEEN-WRAP. Cl. 42.
746,980. ULSTRENE. Cl. 43.
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747,008. STEER HEAD AND DESIGN. Cl. 46.
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747,019. PLATINUM. Cl. 49.
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747,021. TIERRA DEL SOL. Cl. 49.
747,025. JUNGLE FLOWER. Cl. 50.
747,026. HALLMARK. Cl. 50.
747,028. FRANCISCAN. Cl. 50.
747,034. EGO. Cl. 51.
747,040. JADEX. Cl. 51.
747,048. CRYSTAL-3. Cl. 52.
747,050. DIR-VAN. Cl. 52.
747,057. THE COICE OF FM. Cl. 101.
747,059. PAMPERED POODLES. Cl. 101.
747,060. 7 AGES AND DESIGN. Cl. 101.
747,061. TELETHRIFT SHOP. Cl. 101.
747,608. KEY SYMBOL. Cl. 102.
747,075. PUTT-A-BIT. Cl. 103.
747,079. PERSONALLY SPEAKING. Cl. 107.
747,080. INSTINCTOR N.F.A.A. AND DESIGN. Cl. 200.
747,082. SOUNDS FOR SAFETY. Cl. 6.
747,083. JET-GAZ AND DESIGN. Cl. 6.
747,084. SOUNDS FOR SAFETY. Cl. 9.
747,089. BETTER B/B BULLT. Cl. 23.
747,090. WEITZ. Cl. 23.
747,092. STEVENS QUALITY BRUSHES. Cl. 29.
747,094. PULL-A-TAB. Cl. 39.
747,095. PLAY-WARMER. Cl. 39.
747,097. FAS-TAN. Cl. 44.

REGISTRATIONS PUBLISHED UNDER SEC. 12(c)

The following marks registered under the act of 1905, or the act of 1881, are published under the provisions of section 12(c) of the Trademark Act of 1946. These registrations are not subject to opposition but are subject to cancellation under section 14 of the act of 1946.

Class 1—Raw or Partly Prepared Materials

439,932. July 27, 1948. Oregon Bulb Farms, Sandym, Oreg. Pub. by Melridge, Inc., Gresham, Oreg.

GOLDEN CHALICE HYBRIDS

For Flower Bulbs (Int. Cl. 31).

Class 6—Chemicals and Chemical Compositions

252,239. Jan. 29, 1929. United Drug Company, Boston, Mass. Pub. by Rexall Drug and Chemical Company, d.b.a. Rexall Drug Company, Los Angeles, Calif.

Cherrosote

For Medicinal Preparation Containing Creosote and Guaiacol Sulphonates and Used for Coughs, Head Colds, and To Check Gastric Fermentation (Int. Cl. 5).

252,348. Feb. 5, 1929. United Drug Company, Boston, Mass. Pub. by Rexall Drug and Chemical Company, d.b.a. Rexall Drug Company, Los Angeles, Calif.

Alco-Rex

For Rubbing Alcohol Compound (Int. Cl. 5).

Class 17—Tobacco Products

442,101. Feb. 22, 1949. Amb-A-Tip Cigar Company, Baltimore, Md. Pub. by The S. Frieder & Sons Company, Philadelphia, Pa.

EARL MARSHAL

For Cigars (Int. Cl. 34).

Class 21—Electrical Apparatus, Machines, and Supplies

410,446. Nov. 26, 1944. Electronic Mechanics, Inc., Clifton, N.J. Pub. by Molecular Dielectrics, Inc., Clifton, N.J.

MYKROY

For Electrical Insulating Material in the Form of Sheets, Tubes or Bars or Pieces Molded or Machined To Fit in Electrical Apparatus.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

73,964. June 1, 1909. The W. A. Ives Manufacturing Co., Wallingford, Conn. Pub. by The Mephisto Tool Co., Inc., Hudson, N.Y.

Mephisto

For Augers, Auger Bits, Machine Bits, Expansive Bits, and Bit Braces (Int. Cls. 7 and 8).

Class 27—Horological Instruments

440,205. Aug. 17, 1948. Rene Brandt, Fabrique d'Horlogerie Ogival, La Chaux-de Fonds, Switzerland. Pub. by Ogival S.A., La Chaux-de Fonds, Switzerland.



For Watches and Parts Thereof (Int. Cl. 14).

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

23,616. Sept. 19, 1893. Eureka Fire Hose Company, New York, N.Y. Pub. by United States Rubber Company, New York, N.Y.

EUREKA

For Hydraulic Fire Hose.

23,617. Sept. 19, 1893. Eureka Fire Hose Company, New York, N.Y. Pub. by United States Rubber Company, New York, N.Y.

PARAGON

For Hydraulic Fire Hose.

Class 38—Prints and Publications

180,295. Feb. 26, 1924. The Tribune Company, Chicago, Ill. Pub. by Chicago Tribune Company, Chicago, Ill.

Colorolo Magazine

For Weekly Magazine Supplement for a Newspaper.

Class 39—Clothing

205,770. Nov. 17, 1925. Joseph F. Rosenau, d.b.a. Nannette Mfg. Co., Philadelphia, Pa. Pub. by Nannette Manufacturing Company, Inc., Philadelphia, Pa.

NANNETTE babe clo'es

For Children's Dresses, Nightgowns, etc.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

253,066. Feb. 19, 1929. J. L. Stifel & Sons, Wheeling, W. Va. Pub. by Indian Head Inc., New York, N.Y.

WHIRLWIND

For Cotton Piece Goods (Int. Cl. 24).

Class 44—Dental, Medical, and Surgical Appliances

73,654. May 4, 1909. United Drug Company, Boston, Mass. Pub. by Rexall Drug and Chemical Company, d.b.a. Rexall Drug Company, Los Angeles, Calif.

Rexall

For Absorbent Cotton (Int. Cl. 5).

Class 52—Detergents and Soaps

302,690. Apr. 25, 1933. Chanel, Inc., New York, N.Y. Pub. by registrant.

CHANEL

For Soap.

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MAY 6, 1969

(Registered ; Renewed ; Canceled ; Amended, Disclaimed, Corrected, etc. ; New Certificates ; 12c Publications.)

ABC Television Films Ltd., from A.B.C. Television Ltd., London, England. 868,964, pub. 2–18–69. Cl. 27.
A.B.C. Television Ltd. : *See*—
ABC Television Films Ltd.
A.V.P.S. Corp., New York, N.Y. 868,945, pub. 2–18–69. Cl. 26.
Abaco Fabrics Corp., from Abaco Fabrics Corp., New York, N.Y. 869,046, pub. 2–18–69. Cl. 42.
Adeco Products, Inc. : *See*—
Aircraft & Diesel Equipment Corp.
Aero-Flow Dynamics, Inc., Linden, N.J. 868,991, pub. 2–18–69. Cl. 34.
Aircraft & Diesel Equipment Corp., to Adeco Products, Inc., Chicago, Ill. 509,601, ren. 5–6–69. Cl. 23.
Albany Felt Co., Albany, N.Y. 868,996, pub. 2–18–69. Cl. 35.
Alberto-Culver Co., Melrose Park, Ill. 869,113–4, pub. 2–18–69. Cl. 51.
Allen, Cliff : *See*—
Allen, Clifford.
Allen, Clifford, d.b.a. Cliff Allen, Brawley, Calif. 747,008, canc. Cl. 46.
Allen, Ray L., Dunedin, Fla. 869,161, pub. 2–18–69. Cl. 100.
Alpha Industries, Inc., Helena, Mont. 869,078, pub. 2–18–69. Cl. 49.
Amb-A-Tip Cigar Co., Baltimore, Md., by The S. Frieder & Sons Co., Philadelphia, Pa. 442,101, 12(c) pub. 5–6–69. Cl. 17.
American Boating & Hunting Association, Dallas, Tex. 869,151, pub. 2–18–69. Cl. 100.
American Enka Corp., Enka, N.C. 746,781–2, canc. Cl. 1.
American Heritage Products, Inc., Portage, Ind. 869,131, pub. 2–18–69. Cl. 52.
American Home Products Corp. : *See*—
Katzinger, Edward, Co.
Laird, Bruce B.
Wyeth Inc.
American Lace Leather Co. Inc., Richmond, Va. 868,993, pub. 2–18–69. Cl. 35.
American Racing Equipment, Brisbane, Calif. 868,913, pub. 2–18–69. Multiple Class (Classes 13 and 19).
American Standard Inc., New York, N.Y. 868,911, pub. 2–18–69. Cl. 13.
American Type Founders Co., Inc. : *See*—
American Type Founders Sales Corp.
American Type Founders Sales Corp., Elizabeth, N.J., to American Type Founders Co., Inc., Nashville, Tenn. 511,534, ren. 5–6–69. Cl. 23.
Amsted Industries Inc. : *See*—
Diamond Chain Co., Inc.
Anchor Hocking Glass Corp., Lancaster, Ohio. 868,982–3, pub. 2–18–69. Cl. 33.
Angelica Corp., from Angelica Uniform Co., St. Louis, Mo. 869,021, pub. 2–18–69. Cl. 39.
Angelica Uniform Co. : *See*—
Angelica Corp.
Anglo-American Clays Corp., New York, N.Y. 868,842–3, pub. 2–18–69. Cl. 1.
Arlington Aluminum Co., Detroit, Mich. 869,082, pub. 2–18–69. Cl. 50.
Aro Corp., The, Bryan, Ohio. 868,951, pub. 2–18–69. Cl. 26.
Art Craft Optical Co., Inc., Rochester, N.Y. 746,889–90, canc. Cl. 26.
Art Craft Optical Co., Inc., Rochester, N.Y. 746,892, canc. Cl. 26.
Ash, Jacob, Co., Inc., Pittsburgh, Pa. 869,037, pub. 2–18–69. Cl. 39.
Ashworth, B., & Co. (Overseas) Ltd., London, England. 869,045, pub. 2–18–69. Cl. 42.
Associated Spring Corp., Bristol, Conn. 507,060, ren. 5–6–69. Cl. 38.
Autostrop Safety Razor Co. Inc., New York, N.Y., to The Gillette Co., Boston, Mass. 258,371, ren. 5–6–69. Cl. 23.
Avon Products, Inc., New York, N.Y. 868,880–1, pub. 2–18–69. Cl. 6.
Avon Products, Inc., New York, N.Y. 869,102, pub. 2–18–69. Cl. 51.
Avon Products, Inc., New York, N.Y. 869,104–6, pub. 2–18–69. Cl. 51.
Avon Products, Inc., New York, N.Y. 869,108–12, pub. 2–18–69. Cl. 51.
Avon Products, Inc., New York, N.Y. 869,132–9, pub. 2–18–69. Cl. 52.
Ayer, Harriet Hubbard, Inc. : *See*—
Thomas, Vincent B.
BEC Pressure Controls Corp., Davenport, Iowa. 868,953, pub. 2–18–69. Cl. 26.
B & H Grill : *See*—
Terrell, Herbert H.
Baby Sitters of America, Inc., Raleigh, N.C. 869,141, pub. 2–18–69. Cl. 100.
Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany. 868,877, pub. 2–18–69. Cl. 6.
Baker Castor Oil Co., The, Bayonne, N.J. 868,878, pub. 2–18–69. Cl. 6.
Ball, Geo. J., Inc., West Chicago, Ill. 868,849, pub. 2–18–69. Cl. 2.
Ballinger, W. A., & Co., San Francisco, Calif. 506,999, ren. 5–6–69. Cl. 42.
Bandwagon U.S.A., Inc., from Bayuk Cigars Inc., Philadelphia, Pa. 869,003, pub. 9–19–67. Cl. 38.
Banner Industries, Inc., St. Louis, Mo. 747,089, canc. Cl. 23.
Barclay, William O., and Reginald G. Barclay, New York, N.Y., to Lanman & Kemp-Barclay & Co. Inc., Palisades Park, N.J. 33,280, ren. 5–6–69. Cl. 18.
Barvent Enterprises, Inc., San Jose, Calif. 747,050, canc. Cl. 52.
Baxter Laboratories, Inc., Morton Grove, Ill. 869,180. Cl. 6.
Bayuk Cigars Inc. : *See*—
Bandwagon U.S.A., Inc.
Belknap Hardware & Mfg. Co., to Belknap, Inc., Louisville, Ky. 74,603, ren. 5–6–69. Cl. 25.
Belknap, Inc. : *See*—
Belknap Hardware & Mfg. Co.
Benecke, J. H. : *See*—
Benecke, J. H., Beteiligungsgesellschaft mit beschrankter Haftung & Co. KG.
Benecke, J. H., Beteiligungsgesellschaft mit beschrankter Haftung & Co. KG., from J. H. Benecke, Hannover-Vinnhorst, Germany. 868,845, pub. 11–24–59. Cl. 2.
Benecke, J. H., Beteiligungsgesellschaft mit beschrankter Haftung & Co. KG., from J. H. Benecke, Hannover-Vinnhorst, Germany. 868,888, pub. 11–3–59. Cl. 8.
Benecke, J. H., Beteiligungsgesellschaft mit beschrankter Haftung & Co. KG., from J. H. Benecke, Hannover-Vinnhorst, Germany. 868,924, pub. 9–29–59. Cl. 19.
Benecke, J. H., Beteiligungsgesellschaft mit beschrankter Haftung & Co. KG., from J. H. Benecke, Hannover-Vinnhorst, Germany. 868,975, pub. 1–20–59. Cl. 32.
Benecke, J. H., Beteiligungsgesellschaft mit beschrankter Haftung & Co. KG., from J. H. Benecke, Hannover-Vinnhorst, Germany. 868,998, pub. 5–19–59. Cl. 37.
Benecke, J. H., Beteiligungsgesellschaft mit beschrankter Haftung & Co. KG., from J. H. Benecke, Hannover-Vinnhorst, Germany. 869,017, pub. 4–7–59. Cl. 39.
Benecke, J. H., Beteiligungsgesellschaft mit beschrankter Haftung & Co. KG., from J. H. Benecke, Hannover-Vinnhorst, Germany. 869,043, pub. 9–10–57. Cl. 42.
Benecke, J. H., Beteiligungsgesellschaft mit beschrankter Haftung & Co. KG., from J. H. Benecke, Hannover-Vinnhorst, Germany. 869,080–1, pub. 5–27–58. Cl. 50.
Beneke Corp., Columbus, Miss. 868,912, pub. 2–18–69. Cl. 13.
Berman, M., & Sons Inc., New York, N.Y. 869,026, pub. 2–18–69. Cl. 39.
Beverly Creations : *See*—
Young, Dorothy M.
Big Bear, Inc., St. Cloud, Minn. 868,933, pub. 2–18–69. Cl. 23.
Big Kernel Pet Foods, Inc., Chicago, Ill. 746,800, canc. Cl. 6.
Bio-Rad Laboratories, Richmond, Calif. 868,973, pub. 2–18–69. Cl. 31.
Bio/Systems, Inc., New York, N.Y. 869,055, pub. 2–18–69. Cl. 44.
Blain Industries, Inc., Van Buren, Ark. 868,882, pub. 2–18–69. Cl. 6.
Blairmoor Knitwear Corp., Long Island City, N.Y. 746,973, canc. Cl. 39.
Blue Bell Boots, Inc., Nashville, Tenn. 869,024, pub. 2–18–69. Cl. 39.
Board of Publication of The Methodist Church, Inc., d.b.a. The Graded Press, Nashville, Tenn. 869,016, pub. 2–18–69. Cl. 38.
Boehringer, C. H., Sohn, Ingelheim (Rhine), Germany. 746,837, canc. Cl. 18.
Boston Blacking Co., Inc., to USM Corp., Boston, Mass. 253,255, ren. 5–6–69. Cl. 5.
Bottger Kommanditgesellschaft Pharmazeutische und Kosmetische Praparate, from Prof. Sauerbruch-Praparate Bottger Kommanditgesellschaft, Berlin, Germany. 869,084, pub. 9–20–66. Cl. 51.
Boutte, Etnah R., New York, N.Y. 868,923, pub. 2–18–69. Cl. 18.
Bowen, Lloyd H., d.b.a. The Garden Mart, Bellaire, Tex. 868,892, pub. 2–18–69. Cl. 10.
Bradley, Milton, Co., Springfield, Mass. 746,865, canc. Cl. 22.
Brand & Co., Ltd., London, England, to Heublein, Inc., Hartford, Conn. 256,026, ren. 5–6–69. Cl. 46.
Brennan Bros. Co. Inc., New York, N.Y. 869,178, pub. 2–18–69. Cl. 103.
Bristol-Myers Co., New York, N.Y. 869,098–9, pub. 2–18–69. Cl. 51.
Bristol-Myers Co., New York, N.Y. 869,108, pub. 2–18–69. Cl. 51.
British Titan Products Co. Ltd., Billingham, England. 868,865, pub. 2–18–69. Cl. 6.
Brunswick Corp., Chicago, Ill. 868,925, pub. 2–18–69. Cl. 19.
Bulova Watch Co., Inc., Flushing, N.Y. 868,905–6, pub. 2–18–69. Cl. 27.
Burgess Battery Co., Chicago, to Burgess Vibrocrafters, Inc., Grayslake, Ill. 504,290, ren. 5–6–69. Cl. 21.
Burgess Vibrocrafters, Inc. : *See*—
Burgess Battery Co.
Burroughs Corp., Detroit, Mich. 868,896, pub. 2–18–69. Cl. 11.

Burroughs Corp., Detroit, Mich. 868,950, pub. 2–18–69. Cl. 26.
Burroughs Corp., Detroit, Mich. 869,007–8, pub. 2–18–69. Cl. 38.
Calgon Corp., Pittsburgh, Pa. 868,875, pub. 2–18–69. Cl. 6.
Cal-West Electric, Inc., South San Francisco, Calif. 868,927, pub. 2–18–69. Cl. 21.
Candyland, Inc., Jesup, from W. O. Patterson, d.b.a. The Towel & Tog Shop, Griffin, Ga. 869,186. Multiple Class (Classes 39 and 42).
Canteen Corp., Chicago, Ill. 869,152, pub. 2–18–69. Cl. 100.
Canterbury Belts, Ltd., New York, N.Y. 868,852, pub. 2–18–69. Multiple Class (Classes 3, 28, and 39).
Caribe Time Products, Inc., New York, N.Y. 746,917, canc. Cl. 28.
Case, J. I., Co.: *See*—
Case, J. I., Threshing Machine Co.
Case, J. I., Threshing Machine Co., to J. I. Case Co., Racine, Wis. 72,871, ren. 5–6–69. Cl. 23.
Case, J. I., Threshing Machine Co., to J. I. Case Co., Racine Wis. 73,947, ren. 5–6–69. Cl. 23.
Century Industries, Inc., Chicago, Ill. 868,981, pub. 2–18–69. Cl. 33.
Chanel, Inc., New York, N.Y. 302,690, 12(c) pub. 5–6–69. Cl. 52.
Chanel, Inc., to Chanel, Inc., New York, N.Y. 510,992, ren. 5–6–69. Cl. 51.
Charmaceuticals, Inc., Los Angeles, Calif. 869,119, pub. 2–18–69. Cl. 51.
Chemical Technical Industries, Inc., Hialeah, Fla. 869,140, pub. 2–18–69. Cl. 52.
Chevron Chemical Co., San Francisco, Calif. 868,876, pub. 2–18–69. Cl. 6.
Chicago & North Western Railway Co., Chicago, Ill. 508,657, ren. 5–6–69. Cl. 105.
Chicago & North Western Railway Co., Chicago, Ill. 512,293, ren. 5–6–69. Cl. 105.
Chicago Section of The American Chemical Society, The, Chicago, Ill. 869,166, pub. 2–18–69. Cl. 101.
Chicago Tribune Co.: *See*—
Tribune Co., The.
Chicago Welding Sales Co., d.b.a. York Engineering Co., Chicago, Ill. 868,932, pub. 2–18–69. Cl. 23.
Chieftain Automotive Products Corp., New York, N.Y. 746,819, canc. Cl. 13.
Churchill Business Forms Co., Newtown, Conn. 868,999–001, pub. 3–12–68. Cl. 37.
Ciba Ltd.: *See*—
Society of Chemical Industry in Basle.
Clairol Inc., New York, N.Y. 869,049, pub. 2–18–69. Cl. 44.
Clairol Inc., New York, N.Y. 869,100, pub. 2–18–69. Multiple Class (Classes 51 and 52).
Clairol Inc., New York, N.Y. 869,204. Cl. 51.
Clarity Publishing, Inc., Albany, N.Y. 869,014, pub. 2–18–69. Cl. 38.
Clark Equipment Co., to Clark Equipment Co., Buchanan, Mich. 507,796, ren. 5–6–69. Cl. 19.
Clark Equipment Co., to Clark Equipment Co., Buchanan, Mich. 512,742, ren. 5–6–69. Cl. 23.
Coast Envelope Co., Los Angeles, Calif., to Swank, Inc., New York, N.Y. 508,806, ren. 5–6–69. Cl. 3.
Cobb Bates & Yerxa Co., to S. S. Pierce Co., Boston, Mass. 73,700, ren. 5–6–69. Cl. 17.
Cobb Hobby Mfg. Co., Inc., Powder Springs, Ga. 746,853, canc. Cl. 22.
Cole, H. C., Milling Co., Chester, Ill. 254,699, ren. 5–6–69. Cl. 46.
Collier Carbon & Chemical Corp., Los Angeles, Calif. 868,890, pub. 2–18–69. Cl. 10.
Commercial Mechanisms, Inc., Kansas City, Mo. 868,909, pub. 2–18–69. Cl. 13.
Compagnie Generale des Gaz Liquefies Cogegal, Paris, France. 747,083, canc. Cl. 6.
Conlon-Moore Corp., Joliet, Ill., to Locke Stove Co., Kansas City, Mo. 512,700, ren. 5–6–69. Cl. 34.
Consolidated Plastics Corp., Santurce, Puerto Rico. 747,025, canc. Cl. 50.
Continental Oil Co., Ponca City, Okla. 868,893, pub. 2–18–69. Cl. 10.
Continental Oil Co., Ponca City, Okla. 868,895, pub. 2–25–69. Cl. 10.
Continental Steel Corp., Kokomo, Ind. 507,406, ren. 5–6–69. Cl. 14.
Coons, William C., Jr., d.b.a. The Marwin Co., Ventura, Calif. 868,863, pub. 2–18–69. Cl. 4.
Cory Corp., Chicago, Ill. 509,301, ren. 5–6–69. Cl. 21.
Cosmetics Mfg. Co., d.b.a. Imperial Del Oro, Long Beach, Calif. 869,095, pub. 2–18–69. Cl. 51.
Cragmet Corp., Rancocas, N.J. 868,988, pub. 2–18–69. Cl. 34.
Crane Packing Co., Morton Grove, Ill. 869,182. Cl. 23.
Creamette Co., The, Minneapolis, Minn. 507,026, ren. 5–6–69. Cl. 17.
Crowell, Gloria G., Needham Heights, Mass. 747,059, canc. Cl. 101.
Crown Life Insurance Co., Toronto, Ontario, Canada. 869,173, pub. 2–18–69. Cl. 102.
Cudahy Packing Co., The, Chicago, Ill., to Purex Corp., Ltd., Lakewood, Calif. 507,711, ren. 5–6–69. Cl. 52.
Curtis, Wesley E., d.b.a. Fas-Tan Co., San Mateo, Calif. 747,097, canc. Cl. 44.
Cutter Laboratories, to Cutter Laboratories, Inc., Berkeley, Calif. 509,064, ren. 5–6–69. Cl. 18.
Cutter Laboratories, Inc.: *See*—
Cutter Laboratories.
Czerniowski, Richard, d.b.a. Koala-Ty Klassiks, Yonkers, N.Y. 869,011, pub. 2–18–69. Cl. 38.
Daggett & Ramsdell International Corp., New York, N.Y. 869,094, pub. 2–18–69. Cl. 51.
Dalton-Whitfield Chamber of Commerce, Inc., Dalton, Ga. 869,160, pub. 2–18–69. Cl. 100.
Dalton-Whitfield Chamber of Commerce, Inc., Dalton, Ga. 869,163, pub. 2–18–69. Cl. 100.
Darling Curler, Inc., Lubbock, Tex. 869,042, pub. 2–18–69. Cl. 40.
Davis Fishing Tackle Co.: *See*—
Davis, Lester M.
Davis, Les, Fishing Tackle Co.: *See*—
Davis, Lester M.
Davis, Lester M., d.b.a. Davis Fishing Tackle Co., to Les Davis Fishing Tackle Co., Tacoma, Wash. 513,444, ren. 5–6–69. Cl. 22.
Dean Products, Inc., Brooklyn, N.Y. 868,974, pub. 2–18–69. Cl. 31.
Dean Products, Inc., Brooklyn, N.Y. 868,990, pub. 2–18–69. Cl. 34.
Dejonge, Louis, & Co., Staten Island, N.Y. 868,921, pub. 2–18–69. Cl. 14.
Del-Dixi Distributors, Inc.: *See*—
Orange Products Co.
Dentists' Supply Co. of New York, The, York, Pa. 869,060–1, pub. 2–18–69. Cl. 44.
Desertopics Publishing Con., Palm Springs, Calif. 746,957, canc. Cl. 38.
Dewey & Almy Chemical Co., to W. R. Grace & Co., Cambridge, Mass. 507,515, ren. 5–6–69. Cl. 16.
Diamond Chain Co., Inc., Indianapolis, Ind., to Amsted Industries Inc., Chicago, Ill. 442,374, ren. 5–6–69. Cl. 23.
Diamond Sheen Products: *See*—
Pride Stores, Inc.
Digital Dynamics, Inc., Los Angeles, Calif. 746,881, canc. Cl. 26.
Dinosaurland, Inc., Salt Lake City, Utah. 746,955, canc. Cl. 38.
Divcon International (U.K.) Ltd., London, England. 868,946, pub. 2–18–69. Cl. 26.
Diversey Corp., The, Chicago, Ill. 746,798, canc. Cl. 6.
Domestic Marble & Stone Corp., New York, N.Y. 868,840–1, pub. 2–18–69. Multiple Class (Classes 1 and 12).
Douglas Furniture Corp., Chicago, Ill. 868,980, pub. 2–18–69. Cl. 32.
Dunhill Co., Ltd.: *See*—
Himmel Distillery Products, Inc.
Du Pont de Nemours, E. I., & Co., Wilmington, Del. 258,573, ren. 5–6–69. Cl. 52.
Dur-O-Lite Pencil Co., Melrose Park, Ill. 869,002, pub. 2–18–69. Cl. 37.
Duval, Rene, (nee Germaine Nicolle), d.b.a. Parfums Volnay, Suresnes, Hauts-de-Seine, Paris, France. 869,086, pub. 2–18–69. Cl. 51.
Duxe Products: *See*—
Wocher, Max, & Son Co., The.
Dynair Electronics, Inc., San Diego, Calif. 868,929, pub. 2–18–69. Cl. 21.
Dytro Corp., Hicksville, N.Y. 868,956, pub. 9–10–68. Cl. 26.
ESB Inc.: *See*—
Willard Storage Battery Co.
Grant Storage Battery Co.
Eastern Specialties Corp., Mount Arlington, N.J. 869,184. Cl. 36.
Eastman Kodak Co., Rochester, N.Y. 442,760, ren. 5–6–69. Cl. 6.
Educational Research Associates, Los Angeles, Calif. 746,880, canc. Cl. 26.
Edwards, Carol, Inc., Skokie, Ill. 869,120, pub. 2–18–69. Cl. 51.
Electronic Mechanics, Inc., by Molecular Dielectrics, Inc., Clifton, N.J. 410,446, 12(c) pub. 5–6–69. Cl. 21.
Electrovert Inc.: *See*—
Grace, W. R., & Co.
Emery Industries, Inc., Cincinnati, Ohio. 658,353, canc. Cl. 8.
Emko Co., The, St. Louis, Mo. 869,091–2, pub. 2–18–69. Cl. 51.
Empire Battery Co.: *See*—
Grant Storage Battery Co.
Empress Corp., The, Los Angeles, Calif. 869,039, pub. 2–18–69. Cl. 39.
Epic Chemicals, Inc., Brooklyn, N.Y. 869,127, pub. 9–20–66. Cl. 52.
Epstein, I., & Sons, Inc.: *See*—
Epstein-Minzter Co. Inc.
Epstein-Minzter Co. Inc., Newark, to I. Epstein & Sons, Inc., Irvington, N.J. 256,566, ren. 5–6–69. Cl. 46.
Etablissements Gaston Verdier, Societe Anonyme, Meaux, Seine et Marne, France. 869,028, pub. 2–18–69. Cl. 39.
Etablissements L. Breton & Fils, Vitry-sur-Seine (Val-de-Marne), France. 869,194. Cl. 46.
Etablissements Weitz S.A., Lyon (Rhone), France. 747,090, canc. Cl. 23.
Eureka Fire Hose Co., by United States Rubber Co., New York, N.Y. 23,616–17, 12(c) pub. 5–6–69. Cl. 35.
Evans, Robert B.: *See*—
Meili-Blumberg Corp.
FM Broadcasting System, Inc., Chicago, Ill. 747,057, canc. Cl. 101.
FMC Corp., New York, N.Y. 868,879, pub. 2–18–69. Cl. 6.
Faderoga, Jacinta, Oakland, Calif. 507,985, ren. 5–6–69. Cl. 18.
Falcon Alarm Co., Inc., Summit, N.J. 747,082, canc. Cl. 6.
Falcon Alarm Co. Inc., Summit, N.J. 747,084, canc. Cl. 9.
Fam Rec Corp., Seymour, Ind. 869,164, pub. 2–18–69. Cl. 100.
Family Kitchen, The: *See*—
Kritikson, John H.
Farber Bros., Inc.: *See*—
Feferman, Ben, Motor Sales Corp.

Farmers Regional Cooperative, Fort Dodge, Iowa. 868,844, pub. 2–18–69. Cl. 1.
Fas-Tan Co.: *See*—
Curtis, Wesley E.
Fawn Engineering Co., Des Moines, Iowa. 868,931, pub. 2–18–69. Cl. 22.
Federal Chemical Co., Louisville, Ky. 868,891, pub. 2–18–69. Cl. 10.
Federated Department Stores, Inc., New York, N.Y. 747,095, canc. Cl. 39.
Feferman, Ben, Motor Sales Corp., South Bend, Ind., to Faber Brothers, Inc., Memphis, Tenn. 509,718, ren. 5–6–69. Cl. 19.
Fibreboard Corp., San Francisco, Calif. 868,906, pub. 2–18–69. Cl. 12.
Field Enterprises, Inc.: *See*—
Fischer, Joseph.
Filtrine Mfg. Co.: *See*—
Kneuper, George.
Fischer, Joseph, to Field Enterprises, Inc., Chicago, Ill. 507,430, ren. 5–6–69. Cl. 38.
Fisher Brewing Co.: *See*—
Lucky Lager Brewing Co.
Fisher Radio Corp., Long Island City, N.Y. 868,930, pub. 2–18–69. Cl. 21.
Flexible Tubing Corp., The, Guilford, Conn. 746,818, canc. Cl. 13.
Flex-O-Lite Division: *See*—
General Steel Industries, Inc.
Flyer's Forum: *See*—
Latta, Thomas F.
Football News Co., Detroit, Mich. 869,185. Cl. 38.
Foregger Co., Inc., The, Smithtown, N.Y. 869,059, pub. 2–18–69. Cl. 44.
Forest City Products, Inc., Cleveland, Ohio. 869,041, pub. 2–18–69. Cl. 40.
Fortune Plastics, Inc., Old Saybrook, Conn. 868,978, pub. 2–18–69. Cl. 32.
Foseco International Ltd., Birmingham, England. 868,872, pub. 2–18–69. Cl. 6.
Foster Frosty Foods, Inc., Denver, Colo. 869,073, pub. 2–18–69. Cl. 46.
Four Star Sportswear, Inc., New York, N.Y. 869,023, pub. 2–18–69. Cl. 39.
Frema-Sportswear, Inc., New York, N.Y. 747,094, canc. Cl. 39.
French, Shriner & Urner Mfg. Co., South Boston, Mass. 869,033, pub. 2–18–69. Cl. 39.
Frieder, S., & Sons Co., The: *See*—
Amb-A-Tip Cigar Co.
Fruits of Four Seasons, Lakeland, Fla. 869,197. Cl. 46.
Fuchs & Lang Mfg. Co., The, to Sun Chemical Corp., New York, N.Y. 257,715, ren. 5–6–69. Cl. 11.
Full Mold Process, Inc., Lathrup Village, Mich. 869,143, pub. 2–18–69. Cl. 100.
Fuller Brush Co., The, East Hartford, Conn. 868,969, pub. 2–18–69. Cl. 29.
GAF Corp.: *See*—
General Aniline & Film Corp.
General Dyestuff Corp.
I.G. Farbenindustrie Aktiengesellschaft.
GAF Corp., New York, N.Y. 868,888, pub. 2–18–69. Cl. 6.
GAF Corp., New York, N.Y. 868,962, pub. 2–18–69. Cl. 26.
GAF Corp., New York, N.Y. 869,177, pub. 2–18–69. Cl. 103.
Garden Mart, The: *See*—
Bowen, Lloyd H.
Garland, Thomas W., Inc., St. Louis, Mo. 869,038, pub. 2–18–69. Cl. 39.
Garlock Inc.: *See*—
Garlock Packing Co., The.
Garlock Packing Co., The, to Garlock Inc., Palmyra, N.Y. 508,591, ren. 5–6–69. Cl. 35.
Gasnick, Jack, New York, N.Y. 869,013, pub. 2–18–69. Cl. 38.
General Aniline & Film Corp., to GAF Corp., New York, N.Y. 508,612, ren. 5–6–69. Cl. 6.
General Dyestuff Corp., to GAF Corp., New York, N.Y. 509,550, ren. 5–6–69. Cl. 6.
General Features Corp., New York, N.Y. 746,961–2, canc. Cl. 38.
General Features Corp., New York, N.Y. 746,966, canc. Cl. 38.
General Foods Corp., White Plains, N.Y. 869,189. Cl. 45.
General Foods Corp., White Plains, N.Y. 869,191–2. Cl. 46.
General Steel Industries, Inc., d.b.a. Flex-O-Lite Division, St. Louis, Mo. 869,083, canc. Cl. 2–18–69. Cl. 50.
Geoscience Instruments Corp., Mount Vernon, N.Y. 868,920, pub. 2–18–69. Cl. 14.
Gillette Co., The: *See*—
Autostrop Safety Razor Co. Inc.
Gillette Co., The, d.b.a. The Toni Co., Boston, Mass. 869,116, pub. 2–18–69. Cl. 51.
Gillette Co., The, Boston, Mass. 869,123, pub. 2–18–69. Cl. 51.
Gilman Street Pharmacy, Berkeley, Calif. 869,157–8, pub. 2–18–69. Cl. 100.
Gold Medal Hair Products, Inc.: *See*—
Stanley, George D.
Goodman, Elizabeth A., d.b.a. Safety Gas Main Stopper Co., to Safety Gas Main Stopper Co., Inc., Brooklyn, N.Y. 510,890, ren. 5–6–69. Cl. 13.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 746,929, canc. Cl. 35.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 868,994, pub. 2–18–69. Cl. 35.
Grace, W. R., & Co.: *See*—
Nitrate Agencies Co.
Dewey & Almy Chemical Co.
Grace, W. R., & Co., New York, N.Y. 868,889, pub. 2–18–69. Cl. 10.
Grace, W. R., & Co., New York, from Electrovert Inc., Mount Vernon, N.Y. 868,898, pub. 2–18–69. Cl. 12.
Grace, W. R., & Co., New York, N.Y. 869,181. Cl. 18.
Graded Press, The: *See*—
Board of Publication of the Methodist Church, Inc.
Grant Storage Battery Co., d.b.a. Empire Battery Co., Minneapolis, Minn., and Beaver Dam, Wis., to ESB Inc., Philadelphia, Pa. 256,770, ren. 5–6–69. Cl. 21.
Greenberg, B. B., Co., Providence, R.I. 746,904, canc. Cl. 28.
Guardian Products Co., Inc., North Hollywood, Calif. 869,052–3, pub. 2–18–69. Cl. 44.
Gullfiber Aktiebolag, Billesholm, Sweden. 869,057, pub. 2–18–69. Cl. 44.
H, Inc., Worcester, Mass. 868,967, pub. 2–18–69. Cl. 28.
HRL, Inc., Los Angeles, Calif. 746,822, canc. Cl. 15.
Hammermill Paper Co.: *See*—
Robeson Process Co.
Harland Bartholomew & Associates, Honolulu, Hawaii. 746,953, canc. Cl. 38.
Harper & Row Publishers, Inc., New York, N.Y. 869,004, pub. 3–12–68. Cl. 38.
Hart Schaffner & Marx, Chicago, Ill. 869,031, pub. 2–18–69. Cl. 39.
Harts Mountain Products Corp., New York, N.Y. 868,868, pub. 2–18–69. Cl. 6.
Harvestall Industries, Inc., New Hampton, Iowa. 868,902, pub. 2–18–69. Cl. 12.
Hastings, Charles E., d.b.a. Hastings Instrument Co., Hampton, Va., to Teledyne, Inc., Los Angeles, Calif. 442,038, ren. 5–6–69. Cl. 26.
Hastings Instrument Co.: *See*—
Hastings, Charles E.
Haveg Industries, Inc., Wilmington, Del. 868,992, pub. 2–18–69. Cl. 35.
Heatbath Corp., Indian Orchard, Mass. 513,201, ren. 5–6–69. Cl. 6.
Henny Penny Egg Ranches: *See*—
Whitehead Bros.
Henry's Camera Corp., Los Angeles, Calif. 868,947, pub. 2–18–69. Cl. 26.
Hercules Inc.: *See*—
Hercules Powder Co.
Hercules Powder Co., to Hercules Inc., Wilmington, Del. 511,463, ren. 5–6–69. Cl. 38.
Heublein, Inc.: *See*—
Brand & Co., Ltd.
Hewitt Soap Co., Inc., The, Dayton, Ohio. 506,561, ren. 5–6–69. Cl. 52.
Higley Chemical Co., The, Dubuque, Iowa. 442,461, ren. 5–6–69. Cl. 52.
Himmel Distillery Products, Inc., d.b.a. Dunhill Co., Ltd., Linden, N.J. 869,199. Cl. 49.
Holmes, S. G., & Sons, Inc., Tulsa, Okla., to S. G. Holmes & Sons, Inc., Wichita, Kans. 509,412, ren. 5–6–69. Cl. 39.
Holophane Co., Inc., to Holophane Co., Inc., New York, N.Y. 256,864, ren. 5–6–69. Cl. 34.
Holophane Co., Inc., to Holophane Co., Inc., New York, N.Y. 257,790, ren. 5–6–69. Cl. 34.
Honeywell Inc.: *See*—
Minneapolis-Honeywell Regulator Co.
Honeywell Inc., Minneapolis, Minn. 868,954, pub. 2–18–69. Cl. 26.
Hood, H. P., & Sons, Inc., Boston, Mass. 869,072, pub. 2–18–69. Cl. 46.
Hopkins, John C., d.b.a. Power-Rate Sales Co., Pittsburgh, Pa. 868,886, pub. 2–18–69. Cl. 7.
Horlicks Corp., Racine, Wis. 869,195. Cl. 46.
Houston Fearless Corp., Los Angeles, Calif. 868,961, pub. 2–18–69. Cl. 26.
Howard Food Products Co., Methuen, Mass. 869,066, pub. 2–18–69. Cl. 46.
Hudnut, Richard, Morris Plains, N.J. 507,052, ren. 5–6–69. Cl. 51.
Hudnut, Richard, Morris Plains, N.J. 869,087–9, pub. 2–18–69. Cl. 51.
Hudson, H. D., Mfg. Co., Chicago, Ill. 868,940, pub. 2–18–69. Cl. 28.
Hydraphan, Ltd., Chicago, Ill. 746,790–1, canc. Cl. 2.
I.G. Farbenindustrie Aktiengesellschaft, Frankfort am Main, Germany, to GAF Corp., New York, N.Y. 252,556, ren. 5–6–69. Cl. 6.
Ideal Toy Corp., Hollis, N.Y. 746,858, canc. Cl. 22.
Illinois Tool Works Inc., Chicago, Ill. 868,939, pub. 2–18–69. Cl. 23.
Imperial Chemical Industries Ltd., Millbank, London, England. 746,980, canc. Cl. 43.
Imperial Del Oro: *See*—
Cosmetics Mfg. Co.
Indian Head Inc.: *See*—
Stifel, J. L., & Sons.
Indianapolis Glove Co., to Indianapolis Glove Co., Inc., Indianapolis, Ind. 510,065, ren. 5–6–69. Cl. 39.
Indianapolis Glove Co., Inc.: *See*—
Indianapolis Glove Co.
Industrial Heating & Finishing Co., Inc., Birmingham, Ala. 868,986, pub. 2–18–69. Cl. 34.
International Flavors & Fragrances Inc.: *See*—
Van Ameringen, Arnold Louis Van.
International Playtex Corp., Dover, Del. 869,032, pub. 2–18–69. Cl. 39.
International Publishing House, Inc., Corp., Hjortshoj, Denmark. 746,958, canc. Cl. 38.
International Silver Co., Meriden, Conn. 868,968, pub. 2–18–69. Cl. 28.
Intertech Corp., Princeton, N.J. 868,949, pub. 2–18–69. Cl. 26.
Investamerica Group, Inc., The, San Antonio, Tex. 869,174, pub. 2–18–69. Cl. 102.

Invincible Products Corp., Chicago, Ill. 869,093, pub. 2–18–69. Cl. 51.
Ives, W. A., Mfg. Co., The, Wallingford, Conn., by The Mephisto Tool Co., Inc., Hudson, N.Y. 73,964, 12(c) pub. 5–6–69. Cl. 23.
J & H International Corp., Chicago, Ill. 869,171, pub. 2–18–69. Cl. 101.
Johnson & Johnson, New Brunswick, N.J. 869,054, pub. 2–18–69. Cl. 44.
Johnson, S. C., & Son, Inc., Racine, Wis. 868,864, pub. 2–18–69. Cl. 4.
Johnson-March Corp., Philadelphia, Pa. 869,165, pub. 2–18–69. Cl. 101.
Joseph & Feiss Co., The, Cleveland, Ohio. 869,020, pub. 2–18–69. Cl. 39.
Kane Mfg. Corp., Kane, Pa. 868,900, pub. 2–18–69. Cl. 12.
Karl, P., to Karl's Shoe Stores, Ltd., Los Angeles, Calif. 257,464, ren. 5–6–69. Cl. 39.
Karl's Shoe Stores, Ltd.: *See*—
Karl, P.
Katzinger, Edward, Co., Chicago, Ill., to American Home Products Corp., New York, N.Y. 252,992, ren. 5–6–69. Cl. 13.
Kaye, Ellen, Laboratories, Inc.: *See*—
Shulton, Inc.
Kaye, Ellen, Laboratories, Inc., St. Paul, Minn. 869,117, pub. 2–18–69. Multiple Class (Classes 51 and 52).
Kenra, Inc., Indianapolis, Ind. 869,202. Cl. 51.
Keystone Chemical Co., Inc., North Kansas City, Mo. 869,130, pub. 2–18–69. Cl. 52.
King Foods, Inc., from King Packing, Inc., Newport, Minn. 869,065, pub. 2–18–69. Cl. 46.
King Packing, Inc.: *See*—
King Foods, Inc.
Kling-Tite Paint Products Co., Chicago, Ill. 513,528, ren. 5–6–69. Cl. 16.
Kloster Steel Corp., Chicago, Ill. 512,259, ren. 5–6–69. Cl. 14.
Klotz, Victor, Paris, France, and New York, N.Y., to Ed. Pinaud Inc., New York, N.Y. 32,870, ren. 5–6–69. Cl. 51.
Kneuper, George, Brooklyn, N.Y., to Filtrine Mfg. Co., Waldwick, N.J. 73,280, ren. 5–6–69. Cl. 31.
Koala-Ty Klassiks: *See*—
Czerniowski, Richard.
Kohnstamm, H., & Co., Inc., New York, N.Y. 869,126, pub. 11–24–64. Cl. 52.
Kritikson, John H., d.b.a. The Family Kitchen, Evanston, Ill. 869,159, pub. 2–18–69. Cl. 100.
Kwikform Ltd., Birmingham, England. 869,200. Cl. 50.
L. & B. Products Corp., Bronx, N.Y. 868,979, pub. 2–18–69. Cl. 32.
Laird, Bruce B., to American Home Products Corp., New York, N.Y. 257,153, ren. 5–6–69. Cl. 18.
La Maur, Inc., Minneapolis, Minn. 869,115, pub. 2–18–69. Cl. 51.
Lanman & Kemp-Barclay & Co. Inc.: *See*—
Barclay, William O., and Reginald G. Barclay.
Latta, Thomas F., d.b.a. Flyer's Forum, Fairfax, Va. 746,952, canc. Cl. 38.
Leasco Data Processing Equipment Corp., Great Neck, N.Y. 869,145, pub. 2–18–69. Cl. 100.
Leeds & Northrup Co., Philadelphia, Pa. 868,958, pub. 2–18–69. Cl. 26.
Lehn & Fink Products Corp., Bloomfield, N.J., to Tussy Cosmetics, Inc., New York, N.Y. 505,102, ren. 5–6–69. Cl. 52.
Leon Chemical Industries, Inc., Grand Rapids, Mich. 747,048, canc. Cl. 52.
Leonard, Ward, Electric Co., Mount Vernon, N.Y. 510,593, ren. 5–6–69. Cl. 21.
Little Crow Milling Co., Inc., Warsaw, Ind. 442,416, ren. 5–6–69. Cl. 46.
Litton Business Systems, Inc., from Monroe International Corp., Orange, N.J. 868,943, pub. 10–29–68. Cl. 26.
Lochinvar Water Heater Corp., Detroit, Mich. 868,847, pub. 2–18–69. Cl. 2.
Locke Stove Co.: *See*—
Conlon-Moore Corp.
Loggins Meat Co., Tyler, Tex. 869,193. Multiple Class (Classes 46 and 46).
Long, W. E., Co.-Independent Bakers Cooperative, Chicago, Ill. 869,190. Cl. 46.
L'Oreal, Paris, France. 869,203. Cl. 51.
Lorie: *See*—
Rexall Drug Co.
Lorillard, P., Co., New York, N.Y. 439,799, ren. 5–6–69. Cl. 17.
Lucky Lager Brewing Co., San Francisco, Calif., from Fisher Brewing Co., Salt Lake City, Utah. 747,016, canc. Cl. 48.
M-B Co.: *See*—
Beil-Blumberg Corp.
M & D Enterprises, Inc., Springfield, Mo. 868,903, pub. 2–18–69. Cl. 12.
M & T Chemicals Inc., New York, N.Y., from Metal & Thermit Corp., Woodbridge Township, N.J. 746,795, canc. Cl. 6.
MacLeod, H. L., d.b.a. N.S. Co., Atlanta, Ga. 746,919, canc. Cl. 28.
Madison Chemical Corp., Maywood, Ill. 869,128, pub. 2–18–69. Cl. 52.
Magikitch'n Equipment Corp., Quakertown, Pa. 439,889, ren. 5–6–69. Cl. 34.
Magikitch'n Equipment Corp., Quakertown, Pa. 501,222, ren. 5–6–69. Cl. 21.
Maico Electronics, Inc., Minneapolis, Minn. 746,846, canc. Cl. 21.
Maid-Rite Products, Inc., Muscatine, Iowa. 508,108, ren. 5–6–69. Cl. 46.
Main-Wall Enterprises, Houston, Tex. 868,959, pub. 2–18–69. Cl. 26.
Malson, George A., d.b.a. Malson Plastics, San Francisco, Calif. 869,062, pub. 2–18–69. Cl. 44.
Malson Plastics: *See*—
Malson, George A.
Marsh, Robert, Enterprises, Inc., Santa Ana, Calif. 868,972, pub. 2–18–69. Cl. 31.
Marsh Supermarkets, Inc., Yorktown, Ind. 869,064, pub. 9–26–67. Multiple Class (Classes 45 and 46).
Marvel Engineering Co., Chicago, Ill. 869,183. Cl. 26.
Marwin Co., The: *See*—
Coons, William C., Jr.
Masten Corp., Arlington Heights, Ill. 868,919, pub. 2–18–69. Cl. 14.
Mauna Mining Corp., Gardners, Pa. 746,809, canc. Cl. 12.
Meadow Brook National Bank Association, The, West Hempstead, N.Y. 747,068, canc. Cl. 102.
Meili-Blumberg Corp., to Robert B. Evans, d.b.a. M-B Co., New Holstein, Wis. 503,582, ren. 5–6–69. Cl. 23.
Meiser, G. H., & Co.: *See*—
Meiser, Ida K.
Meiser, Ida K., d.b.a. G. H. Meiser & Co., Blue Island, Ill. 746,877, canc. Cl. 23.
Melbo Clothing Inc., Higashiku, Osaka, Japan. 869,027, pub. 2–18–69. Cl. 39.
Melridge, Inc.: *See*—
Oregon Bulb Farms.
Melville Shoe Corp., New York, N.Y. 869,040, pub. 2–18–69. Cl. 39.
Mephisto Tool Co., Inc., The: *See*—
Ives, W. A., Mfg. Co., The.
Merck & Co.: *See*—
Sharp & Dohme, Inc.
Merck & Co., Inc., Rahway, N.J. 869,063, pub. 2–18–69. Cl. 44.
Merillat Woodworking Co., Adrian, Mich. 868,976, pub. 2–18–69. Cl. 32.
Merkin, M. J., Paint Co., Inc., New York, N.Y., to Merkin Paint Co., Inc., Baltimore, Md. 508,932, ren. 5–6–69. Cl. 12.
Merkin Paint Co., Inc.: *See*—
Merkin, M. J., Paint Co., Inc.
Mesa Plastics Co., Los Angeles, Calif. 746,786, canc. Cl. 1.
Metal & Thermit Corp.: *See*—
M & T Chemicals Inc.
Mettler Instrument Corp., Hightstown, N.J. 868,963, pub. 2–18–69. Cl. 26.
Millipore Corp., Bedford, Mass. 868,970, pub. 2–18–69. Cl. 31.
Minikay Ltd., London, England. 746,923, canc. Cl. 31.
Minneapolis-Honeywell Regulator Co., to Honeywell Inc., Minneapolis, Minn. 508,149, ren. 5–6–69. Cl. 26.
Missouri Portland Cement Co., Clayton, Mo. 868,907, pub. 2–18–69. Cl. 12.
Mitchell, Neal, Associates Inc., Cambridge, Mass. 869,148, pub. 2–18–69. Cl. 100.
Mitchum Co., The: *See*—
Wrisley, Allen B., Co.
Molecular Dielectrics, Inc.: *See*—
Electronic Mechanics, Inc.
Monroe International Corp.: *See*—
Litton Business Systems, Inc.
Montgomery Ward & Co., Inc., Chicago, Ill. 746,925, canc. Cl. 34.
Moore, George W., Inc., Waltham, Mass. 746,816, canc. Cl. 13.
Morton International, Inc.: *See*—
Morton Salt Co.
Morton Salt Co., to Morton International, Inc., Chicago, Ill. 511,255, ren. 5–6–69. Cl. 46.
Mother's Cake & Cookie Co.: *See*—
Wheatley, Noah M.
Mound City Paint & Color Co., St. Louis, Mo., to SCM Corp., Cleveland, Ohio. 74,473, ren. 5–6–69. Cl. 16.
N.S. Co.: *See*—
MacLeod, H. L.
Nannette Mfg. Co.: *See*—
Rosenau, Joseph F.
Nannette Mfg. Co., Inc.: *See*—
Rosenau, Joseph F.
Narda Microwave Corp., The: *See*—
Sperry Gyroscope Co., Inc.
Nashua Corp.: *See*—
Nashua Gummed & Coated Paper Co.
Nashua Gummed & Coated Paper Co., to Nashua Corp., Nashua, N.H. 509,659, ren. 5–6–69. Cl. 5.
National Beryllia Corp., Haskell, N.J. 868,985, pub. 2–18–69. Cl. 34.
National Cash Register Co., The, Dayton, Ohio. 868,955, pub. 2–18–69. Cl. 26.
National Distillers & Chemical Corp., d.b.a. The Windsor Distillery Co., New York, N.Y. 869,079, pub. 2–18–69. Cl. 49.
National Field Archery Assn. of the U.S., Inc., Redlands, Calif. 747,080, canc. Cl. 200.
National Work Clothes Rental, Elizabeth, N.J. 869,162, pub. 2–18–69. Cl. 100.
Nature Conservancy, The, Washington, D.C. 869,149, pub. 2–18–69. Cl. 100.
Needham Packing Co., Inc., Sioux City, Iowa. 869,067, pub. 2–18–69. Cl. 46.
New England Snacks, Inc.: *See*—
Stows of Manchester, Inc.
New York Herald Tribune Inc., New York, N.Y. 746,947, canc. Cl. 38.
Newport Industries, Inc., Pensacola, Fla., to Tenneco Chemicals, Inc., New York, N.Y. 507,028, ren. 5–6–69. Cl. 1.
Niagara Sportcenter Inc., North Tonawanda, N.Y. 747,075, canc. Cl. 103.

Nitrate Agencies Co., to W. R. Grace & Co., New York, N.Y. 252,572, ren. 5–6–69. Cl. 6.
Norsk Hydro-Elektrisk Kvaelstofaktieselskab, Oslo, Norway. 868,894, pub. 2–18–69. Cl. 10.
Northern Laboratories, Manitowoc, Wis. 747,040, canc. Cl. 51.
Novo Services, Inc., New York, N.Y. 869,167, pub. 2–18–69. Cl. 101.
Nugget Distributors, Inc.: *See*—
Nugget Distributors' Cooperative of America, Inc.
Nugget Distributors' Cooperative of America, Inc., d.b.a. Nugget Distributors, Inc., Stockton, Calif. 869,074, pub. 2–18–69. Cl. 46.
Nugget Distributors' Cooperative of America, Inc., d.b.a. Nugget Distributors, Inc., Stockton, Calif. 869,076, pub. 2–18–69. Cl. 46.
Nutshell Books, Inc., Chevy Chase, Md. 746,943, canc. Cl. 38.
Oatey Co., from The L. R. Oatey Co., Cleveland, Ohio. 868,899, pub. 2–18–69. Multiple Class (Classes 12, 16, and 34).
Oatey, L. R., Co., The: *See*—
Oatey Co.
O'Connell Packing Co., Sherwood, Oreg. 869,075, pub. 2–18–69. Cl. 46.
Ogival S.A.: *See*—
Brandt, René, Fabrique d'Horlogerie Ogival.
Old Mission Fig Bar Co.: *See*—
Wheatley, Noah M.
Old Scratch, Inc., Amarillo, Tex. 746,878, canc. Cl. 28.
Oneida Ltd., Oneida, N.Y. 512,068, ren. 5–6–69. Cl. 28.
Orange Products Co., Orange, to Del-Dixi Distributors, Inc., Fort Worth, Tex. 246,964, ren. 5–6–69. Cl. 46.
Oregon Bulb Farms, Sandym, by Melridge, Inc., Gresham, Oreg. 439,932, 12(c) pub. 5–6–69. Cl. 1.
Owen Laboratories, Inc., Dallas, Tex. 869,090, pub. 2–18–69. Cl. 51.
Oxford Industries, Inc., Atlanta, Ga. 869,022, pub. 2–18–69. Cl. 39.
PPG Industries, Inc., Pittsburgh, Pa. 868,984, pub. 2–18–69. Cl. 33.
Pacific Flush-Tank Co., Chicago, Ill., to Rex Chainbelt Inc., West Milwaukee, Wis. 505,695, ren. 5–6–69. Cl. 23.
Padmore & Barnes Ltd., Kilkenny, Ireland. 869,035, pub. 2–18–69. Cl. 39.
Par-Form Foundations, Inc., New York, N.Y. 869,034, pub. 2–18–69. Cl. 39.
Parfums Volnay: *See*—
Duval, Rene, (nee Germaine Nicolle).
Parker Pen Co., The, Janesville, Wis. 255,741, ren. 5–6–69. Cl. 37.
Parrott & Co., San Francisco, Calif. 747,021, canc. Cl. 49.
Parts Distributors Warehouse, Inc., Memphis, Tenn. 869,170, pub. 2–18–69. Cl. 101.
Patnaude, Henry A., Sacramento, Calif. 868,914, pub. 2–18–69. Multiple Class (Classes 13 and 19).
Patterson, W. O.: *See*—
Candyland, Inc.
Pequa Industries, Inc., Massapequa Park, N.Y. 869,129, pub. 2–18–69. Cl. 52.
Perkin-Elmer Corp., The, Norwalk, Conn. 868,867, pub. 2–18–69. Cl. 6.
Perstorp Aktiebolag, Perstorp, Sweden. 868,901, pub. 2–18–69. Cl. 12.
Pextile Corp. of America, Greensboro, N.C. 746,977, canc. Cl. 42.
Pfizer, Chas., & Co., Inc., New York, N.Y. 869,121–2, pub. 2–18–69. Cl. 51.
Philadelphia Laboratories, Inc., Philadelphia, Pa. 746,834, canc. Cl. 18.
Pierce Petroleum Corp., Wilmington, Del., and St. Louis, Mo., to Sinclair Oil Corp., New York, N.Y. 253,271, ren. 5–6–69. Cl. 15.
Pierce, S. S., Co.: *See*—
Cobb Bates & Yerxa Co.
Pinaud, Ed., Inc.: *See*—
Klotz, Victor.
Pitman, Harold M., Co., Chicago, Ill. 869,169, pub. 2–18–69. Cl. 101.
Polygraphic Co. of America, Inc., New York, N.Y. 746,942, canc. Cl. 38.
Pomona Tile Mfg. Co., Pomona, Calif. 868,904, pub. 2–18–69. Cl. 12.
Posner Laboratories, Inc., Corona, N.Y. 869,187. Cl. 40.
Power-Rate Sales Co.: *See*—
Hopkins, John C.
Pratt & Lambert-Inc., Buffalo, N.Y. 746,823, canc. Cl. 16.
Pride Container Corp., Chicago, Ill. 868,851, pub. 2–18–69. Cl. 2.
Pride Stores, Inc., d.b.a. Diamond Sheen Products, Los Angeles, Calif. 869,096, pub. 2–18–69. Cl. 51.
Professional Photographers of America, Inc., Milwaukee, Wis. 747,060, canc. Cl. 101.
Prof. Sauerbruch-Praparate Bottger Kommanditgesellschaft: *See*—
Bottger Kommanditgesellschaft Pharmazeutische und Kosmetische Praparate.
Purex Corp., Ltd.: *See*—
Cudahy Packing Co., The.
Purex Corp., Ltd., Lakewood, Calif. 868,850, pub. 2–18–69. Cl. 2.
RMS Engineering, Inc., Atlanta, Ga. 868,944, pub. 2–18–69. Cl. 26.
RTN Broadcast Features, Inc., Chicago, Ill. 747,079, canc. Cl. 107.
Ray Drug Co., Inc., Oakland, Calif. 869,118, pub. 2–18–69. Cl. 51.
Rayette-Faberge, Inc., New York, N.Y. 869,107, pub. 2–18–69. Cl. 51.
Raypak Co., Inc., South El Monte, Calif. 868,987, pub. 2–18–69. Cl. 34.
Rauch Corp., The, Cleveland, Ohio. 868,934. Cl. 23.
Rees Blow Pipe Mfg. Co., Berkeley, Calif. 868,936, pub. 2–18–69. Cl. 23.
Refrigiwear Inc., Inwood, N.Y. 869,036, pub. 2–18–69. Cl. 39.
Reichhold Chemicals, Inc., White Plains, N.Y. 868,869, pub. 2–18–69. Cl. 6.
Reliance Electric & Engineering Co., The: *See*—
Toledo Scale Co.
René Brandt, Fabrique D'Horlogerie Ogival, by Ogival S.A., La Chaux-de-Fonds, Switzerland. 440,205, 12(c) pub. 5–6–69. Cl. 27.
Republic Steel Corp., Cleveland, Ohio. 868,916, pub. 2–18–69. Cl. 13.
Rerebas, Inc., McKee City, N.J. 869,153, pub. 2–18–69. Cl. 100.
Revere Publishing Co., Inc., New York, N.Y. 746,945, canc. Cl. 38.
Revlon, Inc., New York, N.Y. 869,101, pub. 2–18–69. Cl. 51.
Rex Chainbelt Inc.: *See*—
Pacific Flush-Tank Co.
Rexall Drug & Chemical Co.: *See*—
Rexall Drug Co.
United Drug Co.
Rexall Drug & Chemical Co., d.b.a. Tupperware, Los Angeles, Calif. 798,461, canc. Cl. 13.
Rexall Drug Co., d.b.a. Lorie, to Rexall Drug & Chemical Co., d.b.a. Rexall Drug Co., Los Angeles, Calif. 509,744, ren. 5–6–69. Cl. 51.
Rival Mfg. Co., Kansas City, Mo. 868,938, pub. 2–18–69. Cl. 23.
Robbins Tire & Rubber Co., Inc., to Robbins Tire & Rubber Co., Inc., Tuscumbia, Ala. 442,779, ren. 5–6–69. Cl. 35.
Robbins Tire & Rubber Co., Inc., Tuscumbia, Ala. 507,101, ren. 5–6–69. Cl. 35.
Robeson Process Co., New York, N.Y., to Hammermill Paper Co., Erie, Pa. 255,202, ren. 5–6–69. Cl. 5.
Robeson Process Co., New York, N.Y., to Hammermill Paper Co., Erie, Pa. 506,529, ren. 5–6–69. Cl. 6.
Robeson Process Co., New York, N.Y., to Hammermill Paper Co., Erie, Pa. 510,744, ren. 5–6–69. Cl. 6.
Rock of Ages Corp., Barre, Vt. 747,026, canc. Cl. 50.
Rock of Ages Corp., Barre, Vt. 747,028, canc. Cl. 50.
Rockwell Mfg. Co., Pittsburgh, Pa. 510,127, ren. 5–6–69. Cl. 38.
Rockwell Mfg. Co., Pittsburgh, Pa. 510,436, ren. 5–6–69. Cl. 13.
Rode, Alfred B., New York, N.Y. 869,015, pub. 2–18–69. Cl. 38.
Rosenau, Joseph F., d.b.a. Nannette Mfg. Co., by Nannette Mfg. Co., Inc., Philadelphia, Pa. 205,770, 12(c) pub. 5–6–69. Cl. 39.
Roxana Petroleum Corp., St. Louis, Mo., to Shell Oil Co., New York, N.Y. 253,361, ren. 5–6–69. Cl. 6.
Russell's Foods, Inc., from Tas-Tee Catering, Inc., Cleveland, Ohio, 869,150, pub. 2–18–69. Multiple Class (Classes 100 and 101).
SCM Corp.: *See*—
Mound City Paint & Color Co.
Safety Gas Main Stopper Co.: *See*—
Goodman, Elizabeth A.
Safety Gas Main Stopper Co., Inc.: *See*—
Goodman, Elizabeth A.
Samsonite Corp., Denver, Colo. 868,853–7, pub. 2–18–69. Cl. 3.
San Martin Vineyards Co., d.b.a. San Martin Vineyards Co., San Martin, Calif. 869,172, pub. 2–18–69. Cl. 101.
Sani-Pac Corp., New York, N.Y. 869,050, pub. 2–18–69. Cl. 44.
Sarne Co., Inc., New York, N.Y. 868,858, pub. 2–18–69. Cl. 3.
Sarne Co., Inc., New York, N.Y. 868,860, pub. 2–18–69. Cl. 3.
Saunders, W. C., d.b.a. W. C. Saunders Co., Richmond, Va. 746,906, canc. Cl. 28.
Saunders, W. C., Co.: *See*—
Saunders, W. C.
Schering Corp.: *See*—
Schering-Kahlbaum A.G.
Schering-Kahlbaum A.G., Berlin, Germany, to Schering Corp., Bloomfield, N.J. 254,304, ren. 5–6–69. Cl. 18.
Schermerhorn Bros. Co., Chicago, Ill. 868,887, pub. 2–18–69. Cl. 7.
Schjeldahl, G. T., Co., Northfield, Minn., from Waltham Precision Instrument Co., Inc., Waltham, Mass. 868,926, pub. 10–18–66. Cl. 21.
Schnadig Corp., Chicago, Ill. 868,977, pub. 2–18–69. Cl. 32.
Scholastic Magazines, Inc., New York, N.Y. 869,006, pub. 2–18–69. Cl. 38.
Seabrook Farms Co., Inc., Seabrook, N.J. 869,196. Cl. 46.
Searle, G. D., & Co., Skokie, Ill. 868,922, pub. 2–18–69. Cl. 18.
Sears, Roebuck & Co., Chicago, Ill. 747,061, canc. Cl. 101.
Seravac Laboratories (Pty.) Ltd., Cape Province, Republic of South Africa. 868,866, pub. 2–18–69. Cl. 6.
Service Station Equipment Co., Philadelphia, Pa., and Muskegon Heights, Mich., to John Wood Co., Muskegon, Mich. 507,918, ren. 5–6–69. Cl. 26.
Sharp & Dohme, Inc., Philadelphia, Pa., to Merck & Co., Inc., Rahway, N.J. 509,742, ren. 5–6–69. Cl. 18.
Shell Oil Co.: *See*—
Roxana Petroleum Corp.
Shell Oil Co., New York, N.Y. 746,797, canc. Cl. 6.
Sherman, David, Corp., St. Louis, Mo. 747,019–20, canc. Cl. 49.
Shulton, Inc., Clifton, N.J., from Ellen Kaye Laboratories, Inc., St. Paul, Minn. 869,085, pub. 3–26–68. Cl. 51.
Siggins Corp., The, Kansas City, Mo. 869,176, pub. 2–18–69. Cl. 103.
Si Lite, Inc., Chicago, Ill. 868,848, pub. 2–18–69. Cl. 2.
Silver Skillet Food Products Co., Skokie, Ill. 869,069, pub. 2–18–69. Cl. 46.

Silvray Lighting, Inc., New York, N.Y. 746,851, canc. Cl. 21.
Simmons Co., New York, N.Y. 511,415, ren. 5–6–69. Cl. 32.
Simmons-Boardman Publishing Corp., New York, N.Y. 657,800, canc. Cl. 38.
Simplex Wire & Cable Co., Cambridge, Mass. 868,928, pub. 12–31–68. Cl. 21.
Sinclair Oil Corp.: *See*—
Pierce Petroleum Corp.
Smith-Alsop Paint & Varnish Co., The, Terre Haute, Ind. 512,873, ren. 5–6–69. Cl. 16.
Societe des Produits Marnier-Lapostolle, Paris, France. 869,077, pub. 2–18–69. Cl. 49.
Societe Francaise pour la Gestion des Brevets d'Application Nucleaire, Paris, France. 869,144, pub. 2–18–69. Multiple Class (Classes 100 and 101).
Society of Chemical Industry in Basel, now by change of name Ciba Ltd., to Ciba Ltd., Basel, Switzerland. 442,197, ren. 5–6–69. Cl. 6.
Songrand Corp., The, Kansas City, Mo. 869,058, pub. 2–18–69. Cl. 44.
Southern Analytical Ltd.: *See*—
Southern Instruments Ltd.
Southern Instruments Ltd., from Southern Analytical Ltd., Camberley, England. 746,879, canc. Cl. 26.
Southport Paint Co., Inc.: *See*—
Wesson Oil & Snowdrift Co., Inc.
Spartans Industries, Inc., New York, N.Y. 869,030, pub. 2–18–69. Cl. 39.
Speidel Corp., to Textron Inc., Providence, R.I. 509,070, ren. 5–6–69. Cl. 28.
Sperry Corp., The: *See*—
Sperry Gyroscope Co., Inc.
Sperry Gyroscope Co., Inc., now by merger The Sperry Corp., Brooklyn, to The Narda Microwave Corp., Plainview, N.Y. 441,990, ren. 5–6–69. Cl. 26.
Spill-Stop Mfg. Co., Chicago, to Spill-Stop Mfg. Co., Melrose Park, Ill. 507,144, ren. 5–6–69. Cl. 50.
Standard Motor Co., Ltd., The, Canley, Coventry, England. 746,838, canc. Cl. 19.
Stanley, George D., Salisbury, Md., to Gold Medal Hair Products, Inc., Inwood, N.Y. 510,416, ren. 5–6–69. Cl. 18.
Stanley Works, The, New Britain, Conn. 868,941, pub. 2–18–69. Cl. 23.
Stat-Pak, Inc., New York, N.Y. 868,862, pub. 2–18–69. Cl. 3.
Staver Co., Inc., The: *See*—
Staver, Edward F.
Staver, Edward F., d.b.a. Staver Mfg. Co., Jackson Heights, to The Staver Co., Inc., Bay Shore, N.Y. 506,476–7, ren. 5–6–69. Cl. 21.
Staver Mfg. Co.: *See*—
Staver, Edward F.
Stevens Brush Co., The, Cleveland, Ohio. 747,092, canc. Cl. 29.
Stevens, J. P., & Co., Inc., New York, N.Y. 869,047, pub. 2–18–69. Cl. 42.
Stifel, J. L., & Sons, Wheeling, W. Va., by Indian Head Inc., New York, N.Y. 253,066, 12(c) pub. 5–6–69. Cl. 42.
Stilwell Frozen Foods, Inc., Stilwell, Okla. 869,068, pub. 2–18–69. Cl. 46.
Stows of Manchester, Inc., from New England Snacks, Inc., Chelsea, Mass. 869,156, pub. 2–18–69. Cl. 100.
Strasenburgh, R. J., Co., Rochester, N.Y., to Wallace & Tiernan Inc., East Orange, N.J. 506,750, ren. 5–6–69. Cl. 18.
Sumitomo Metal Industries, Ltd., Osaka, Japan. 868,942, pub. 2–18–69. Cl. 23.
Sun Chemical Corp.: *See*—
Fuchs & Lang Mfg. Co., The.
Sun Chemical Corp., New York, N.Y. 868,884–5, pub. 2–18–69. Cl. 7.
Sun Chemical Corp., New York, N.Y. 868,897, pub. 2–18–69. Cl. 11.
Suncard Services, Inc., Phoenix, Ariz. 869,175, pub. 2–18–69. Cl. 102.
Sunshine Biscuits, Inc., New York, N.Y. 869,070–1, pub. 2–18–69. Cl. 46.
Sunshine Parti-Pal, Inc., Augusta, Ga. 869,147, pub. 2–18–69. Cl. 100.
Superior Growers & Packers, Inc., Los Angeles, Calif. 869,198. Cl. 46.
Sutton Publishing Co., Inc., White Plains, N.Y. 869,012, pub. 2–18–69. Cl. 38.
Swank, Inc.: *See*—
Coast Envelope Co.
T.G. & Y. Stores Co., Oklahama City, Okla. 868,952, pub. 2–18–69. Cl. 26.
Talens & Son, Inc., Union, N.J. 506,915, ren. 5–6–69. Cl. 37.
Tandy Corp., d.b.a. Tex Tan Western Leather Co., Fort Worth, Tex. 868,861, pub. 2–18–69. Multiple Class (Classes 3 and 39).
Tas-Tee Catering, Inc.: *See*—
Russell's Foods, Inc.
Taylor, Morrison I., Inc., Jacksonville, Fla. 508,844, ren. 5–6–69. Cl. 102.
Teledyne, Inc.: *See*—
Hastings, Charles E.
Teleflex Inc., North Wales, Pa. 821,490, canc. Cl. 19.
Tempelhof, Jonas, La Chaux-de-Fonds, Switzerland. 868,846, pub. 2–18–69. Cl. 2.
Tenneco Chemicals, Inc.: *See*—
Newport Industries, Inc.
Tennessee Tufting Co., Nashville, Tenn. 869,044, pub. 2–7–67. Cl. 42.
Terrell, Herbert H., d.b.a. B & H Grill, Memphis, Tenn. 869,142, pub. 2–18–69. Cl. 100.
Tesa S.A., Vaud, Switzerland. 868 948, pub. 2–18–69. Cl. 26.
Tex-Sun Glove Co., Corsicana, Tex. 869,019, pub. 2–18–69. Cl. 39.
Tex Tan Western Leather Co.: *See*—
Tandy Corp.
Textron Inc.: *See*—
Speidel Corp.
Textile Co. of America, Los Angeles, Calif. 869,188. Cl. 42.
Thomas, Vincent B., to Harriet Hubbard Ayer, Inc., New York, N.Y. 71,516, ren. 5–6–69. Cl. 51.
Thor Power Tool Co., Aurora, Ill. 868,995, pub. 2–18–69. Cl. 35.
Thrush, H. A., & Co.: *See*—
Thrush Products, Inc.
Thrush Products, Inc., d.b.a. H. A. Thrush & Co., Peru, Ind. 868,910, pub. 2–18–69. Multiple Class (Classes 13, 23, and 34).
Tiffany Perfumes, Ltd., New York, N.Y. 869,097, pub. 2–18–69. Cl. 51.
Timme, E. F., & Son, to E. F. Timme & Son, Inc., New York, N.Y. 512,988, ren. 5–6–69. Cl. 39.
Timme, E. F., & Son, Inc.: *See*—
Timme, E. F., & Son.
Tire Distributors, Inc., Minneapolis, Minn. 868,997, pub. 2–18–69. Cl. 35.
Tnemec Co., Inc., North Kansas City, Mo. 512,734, ren. 5–6–69. Cl. 16.
Toastswell Co., Inc., The, St. Louis, Mo. 511,332, ren. 5–6–69. Cl. 21.
Toledo Scale Co., Toledo, to The Reliance Electric & Engineering Co., Euclid, Ohio. 512,073, ren. 5–6–69. Cl. 26.
Toni Co., The: *See*—
Gillette Co., The.
Toro Mfg. Corp., Minneapolis, Minn. 746,840, canc. Cl. 19.
Towel & Tog Shop, The: *See*—
Candyland, Inc.
Tracor, Inc., Austin, Tex. 868,960, pub. 2–18–69. Cl. 26.
Tribune Co., The, by Chicago Tribune Co., Chicago, Ill. 180,295, 12(c) pub. 5–6–69. Cl. 38.
Trico Products Corp., Buffalo, N.Y. 506,313, ren. 5–6–69. Cl. 19.
Trico Products Corp., Buffalo, N.Y. 507,812, ren. 5–6–69. Cl. 19.
Triulzi S.p.A., Novate, Milan, Italy. 868,937, pub. 2–18–69. Cl. 23.
Troy Chemical Co., Inc., The, Mount Kisko, N.Y. 249,276, ren. 5–6–69. Cl. 18.
Tupperware: *See*—
Rexall Drug & Chemical Co.
Tussy Cosmetics, Inc.: *See*—
Lehn & Fink Products Corp.
USM Corp.: *See*—
Boston Blacking Co., Inc.
United Shoe Machinery Co.
USV Pharmaceutical Corp., New York, N.Y. 869,103, pub. 2–18–69. Cl. 51.
Uneeda Doll Co., Inc., Brooklyn, N.Y. 746,857, canc. Cl. 22.
Union Carbide Corp., New York, N.Y. 868,873–4, pub. 2–18–69. Cl. 6.
Union Carbide Corp., New York, N.Y. 868,918, pub. 2–18–69. Cl. 14.
United Business Service Co., Boston, Mass. 869,009, pub. 2–18–69. Cl. 38.
United-Carr Fastener Corp., Cambridge, to United-Carr Inc., Boston, Mass. 507,337–8, ren. 5–6–69. Cl. 40.
United-Carr Fastener Corp., Cambridge, to United-Carr Inc., Boston, Mass. 508,686, ren. 5–6–69. Cl. 40.
United-Carr Inc.: *See*—
United-Carr Fastener Corp.
United Drug Co., Boston, Mass., by Rexall Drug & Chemical Co., d.b.a. Dexall Drug Co., Los Angeles, Calif. 78,654, 12(c) pub. 5–6–69. Cl. 44.
United Drug Co., Boston, Mass., by Rexall Drug & Chemical Co., d.b.a. Rexall Drug Co., Los Angeles, Calif. 252,239, 1(2c) pub. 5–6–69. Cl. 6.
United Drug Co., Boston, Mass., by Rexall Drug & Chemical Co., d.b.a. Rexall Drug Co., Los Angeles, Calif. 252,348, 12(c) pub. 5–6–69. Cl. 6.
United Printers & Publishers (Inc.), Dedham, Mass. 746,960, canc. Cl. 38.
United Shoe Machinery Co., to USM Corp., Boston, Mass. 72,303–4, ren. 5–6–69. Cl. 23.
U.S. Catheter & Instrument Corp., from U.S. Catheter & Instrument Corp., Glens Falls, N.Y. 869,048, pub. 2–18–69. Cl. 44.
U.S. Industries, Inc., New York, N.Y. 746,886, canc. Cl. 26.
United States Machinery, Inc., North Billerica, Mass. 868,935, pub. 2–18–69. Cl. 23.
U.S. Plywood-Champion Papers Inc., New York, N.Y. 868,905, pub. 2–18–69. Cl. 12.
United States Rubber Co.: *See*—
Eureka Fire Hose Co.
Unitek Corp., Monrovia, Calif. 869,051, pub. 2–18–69. Cl. 44.
Univox Corp., New York, N.Y. 746,849, canc. Cl. 21.
Univox Corp., New York, N.Y. 746,884, canc. Cl. 26.
Vacuum Cleaner Corp. of America, The, Philadelphia, Pa. 868,859, pub. 2–18–69. Cl. 3.
Valhalla Inn Ltd., Toronto, Ontario, Canada. 869,154–5, pub. 2–18–69. Cl. 100.
Van Ameringen, Arnold L. V., to International Flavors & Fragrances Inc., New York, N.Y. 252,231, ren. 5–6–69. Cl. 51.
Van Raalte Co., Inc., New York, N.Y. 869,029, pub. 2–18–69. Cl. 39.
Virginia Chemicals Inc., West Norfolk, Va. 868,915, pub. 2–18–69. Cl. 13.
Virtis Co., Inc., The, Gardiner, N.Y. 868,971, pub. 2–18–69. Cl. 31.
Vitamin Council Inc., St. Paul, Minn. 746,828, canc. Cl. 18.
Vitaminerals, Inc., Glendale, Calif. 510,846, ren. 5–6–69. Cl. 18.

Wallace & Tiernan Inc.: *See*—
Strasenburgh, R. J., Co.
Waltham Precision Instrument Co., Inc.: *See*—
Schjeldahl, G. T., Co.
Warren, Cindy, Cosmetics, Inc., Brooklyn, N.Y. 747,034, canc. Cl. 51.
Warwick, Jack R., New York, N.Y. 869,179. Cl. 1.
Wasatch Chemical Co., Salt Lake City, Utah. 869,205. Cl. 52.
Washington University, St. Louis, Mo. 869,005, pub. 7–30–68. Cl. 38.
Water Service Laboratories, Inc., New York, N.Y. 868,908, pub. 2–18–69. Cl. 13.
Wellcome Foundation, Ltd., The, London, England. 746,991, canc. Cl. 46.
Welling International Corp., Orange, Conn. 868,957, pub. 2–18–69. Cl. 26.
Wesson Oil & Snowdrift Co., Inc., New Orleans, La., to Southport Paint Co., Inc., Savannah, Ga. 510,063, ren. 5–6–69. Cl. 16.
Western Blue Print Co., Kansas City, Mo., 869,146, pub. 2–18–69. Multiple Class (Classes 100 and 106).
Westland Plastics, Inc., Newbury Park, Calif. 746,792, canc. Cl. 2.
Weston Chemical Corp., New York, N.Y. 868,870–1, pub. 2–18–69. Cl. 6.
Weston Paper & Mfg. Co., The, Dayton, Ohio. 254,858–9, ren. 5–6–69. Cl. 37.
Wheatley, Noah M., d.b.a. Old Mission Fig Bar Co., to Mother's Cake & Cookie Co., Oakland, Calif. 252,933, ren. 5–6–69. Cl. 46.
Wheel Truing Brake Shoe Co., Detroit, Mich. 510,001, ren. 5–6–69. Cl. 19.
Wheeling Service & Supply, Inc., Arlington Heights, Ill. 868,989, pub. 2–18–69. Cl. 34.
Whitehead Bros., Riverside, to Henny Penny Egg Ranches, Pico Rivera, Calif. 247,432, ren. 5–6–69. Cl. 46.
Whiting Paper Co., Princeton, N.J. 746,938, canc. Cl. 37.
Wiegand, Edwin L., Co., Pittsburgh, Pa. 507,570, ren. 5–6–69. Cl. 21.
Willard Storage Battery Co., Cleveland, Ohio, to ESB Inc., Philadelphia, Pa. 254,979, ren. 5–6–69. Cl. 21.
Windsor Distillery Co., The: *See*—
National Distillers & Chemical Corp.
Wocher, Max, & Son Co., The, d.b.a. Duxe Products, Cincinnati, Ohio. 869,056, pub. 2–18–69. Cl. 44.
Wolverine World Wide, Inc., Rockford, Mich. 869,025, pub. 2–18–69. Cl. 39.
Wood, John, Co.: *See*—
Service Station Equipment Co.
Wood, John, Mfg. Co., Inc.
Wood, John, Mfg. Co., Inc., to John Wood Co., Conshohocken, Pa. 509,906, ren. 5–6–69. Cl. 21.
Woolley, W. J., Co.: *See*—
Woolley, W. John.
Woolley, W. John, d.b.a. W. J. Woolley Co., River Forest, Ill. 868,917, pub. 2–18–69. Cl. 13.
World Food & Agricultural Foundation, Inc., Madison, Wis. 869,168, pub. 2–18–69. Cl. 101.
World Press Co., The, New York, N.Y. 869,010, pub. 2–18–69. Cl. 38.
Wright & Lato, Inc., Newark, N.J. 746,902, canc. Cl. 28.
Wristley, Allen B., Co., Chicago, Ill., to The Mitchum Co., Paris, Tenn. 506,794, ren. 5–6–69. Cl. 52.
Wyeth Inc., Philadelphia, Pa., to American Home Products Corp., New York, N.Y. 507,204, ren. 5–6–69. Cl. 18.
Wyeth Inc., Philadelphia, Pa., to American Home Products Corp., New York, N.Y. 512,863, ren. 5–6–69. Cl. 18.
Yardley of London, Inc., New York, N.Y. 869,124–5, pub. 2–18–69. Cl. 51.
Yardley of London, Inc., Totowa, N.J. 869,201. Cl. 51.
York Engineering Co.: *See*—
Chicago Welding Sales Co.
Young, Dorothy M., d.b.a. Beverly Creations, Silver Spring, Md. 869,018, pub. 2–18–69. Cl. 39.

U.S. GOVERNMENT PRINTING OFFICE: 0——1969

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
May 13, 1969 Volume 862 Number 2

PATENTS
NOTICES

Board of Appeals Decisions Rendered in the Month of March 1969

Examiner affirmed	126
Examiner affirmed in part	22
Examiner reversed	24
Total	172

Certificates of Correction for the Week of May 13, 1969

D. 208,425	3,355,473
D. 211,193	3,366,050
3,086,397	3,369,023
3,211,470	3,369,032
3,331,893	3,369,366
3,335,912	3,369,960
3,342,012	3,370,072
3,352,857	

Erratum

In the OFFICIAL GAZETTE of February 11, 1969, vol. 859, p. 346, first column, line 17 thereof, for "Jan. 13, 1968" read *Jan. 13, 1969*.

Reply Briefs

Applicants should clearly and specifically indicate in their reply briefs the new points of argument "raised in the examiner's answer" to which said reply briefs are directed. Rule 193(b) does not permit general rebuttal of each statement made in the examiner's answer; consequently a reply brief which is not restricted to answering "new points" may be refused consideration in toto.

EDWIN L. REYNOLDS,
Apr. 15, 1969. *First Assistant Commissioner.*

New Applications Received During March 1969

Patents	8139
Designs	537
Plant Patents	5
Reissues	28
Total	8709

Issue—May 13, 1969

Patents	1300—No.	3,443,260 to No.	3,444,559, incl.
Designs	30—No.	214,124 to No.	214,153, incl.
Plant Patents	1—No.	2,886	
Reissues	4—No.	26,578 to No.	26,581, incl.
Total	1335		

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF APRIL 21, 1969

PATENT EXAMINING GROUPS	Actual Filing Date of Oldest New Case Awaiting Action
*Denotes oldest new application.	
CHEMICAL EXAMINING GROUPS	
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—M. STERMAN, Director. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	4-03-67
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Director. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	8-02-66
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—L. J. BERCOVITZ, Director. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping, and Treating Processes.	1-10-67
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—M. STERMAN, Acting Director. Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	*8-26-66
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Director. Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	1-04-67
ELECTRICAL EXAMINING GROUPS	
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—W. S. COLE, Director. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	5-19-67
SECURITY, GROUP 220—S. BOYD, Director. Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	8-29-66
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—S. BOYD, Acting Director. Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	*5-25-66
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Director. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	2-07-67
PHYSICS, GROUP 280—R. L. EVANS, Director. Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	6-15-67
DESIGNS, GROUP 290—S. BOYD, Director. Industrial Arts; Household, Personal and Fine Arts.	5-05-68
MECHANICAL EXAMINING GROUPS	
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Director. Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	8-30-67
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Director. Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders Woodworking; Tools; Cutlery; Jacks.	*4-21-67
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Director. Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	5-02-67
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Director. Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	2-20-68
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Director. Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	11-20-67
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—F. H. BRONAUGH, Director. Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	8-31-67

Total number of pending applications (excluding Designs)	185,103
Total number of Design applications pending	3,298

Expiration of patents: The patents within the range of numbers indicated below expire during May 1969, except those which may have expired earlier due to shortened terms under the provisions of Public Law 690, 79th Congress, approved August 8, 1946 (60 Stat. 940) and Public Law 619, 82nd Congress, approved August 23, 1954 (68 Stat. 784), or which may have had their terms curtailed by disclaimer under the provisions of 35 U.S.C. 253. Other patents, issued after the dates of the range of numbers indicated below, may have expired before the full term of 17 years for the same reasons, or have lapsed under the provisions of 35 U.S.C. 151.

Patents	Numbers 2,595,214 to 2,596,656, inclusive
Plant Patents	Numbers 1,091 to 1,100, inclusive

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE ALLAN A. HAYATIAN

No. 7969. Decided June 6, 1968

[55 CCPA 1325; 395 F.2d 1010; 158 USPQ 529]

1. PATENTABILITY—AFFIDAVIT—FACTUAL OBSERVATIONS AND CONCLUSIONS BY EXPERT.

"We are in partial disagreement with the Examiner and the Board as to the weight to be given the affidavit. The first part of the affidavit represents a report of the first-hand visual observation of factual matter by a person who is unquestionably qualified to observe and evaluate the subject matter. While the affidavit contains conclusions concerning the cause and effect of the scoring, these are the conclusions of an engineering executive in a company which is vitally concerned with observing and evaluating causes of failure in tractor treads. The conclusions drawn relative to the Simpson device appear reasonable and to be within the competence of the affiant. *In re Neave*, 54 CCPA 999, 370 F.2d 961, 152 USPQ 274. We therefore accept the affidavit as evidence that the Simpson device will occasionally fail due to 'freezing' of the Belleville washers."

2. SAME—SAME—UNSUBSTANTIATED OPINIONS.

"We agree with the Examiner and the Board * * * that the affidavit is unpersuasive insofar as it attempts to show superiority of appellant's device over the Simpson device. In effect, the affiant-inventor says no more than that he thinks his device is better than the prior art device. Since he alleges his familarity with the prior art device, we would have inferred from the mere fact that he filed an application that he thought his device to be an improvement in some respect. Thus we consider the affidavit no more persuasive than the application itself on this point. In evaluating the obviousness of an invention. we are concerned with facts, *Graham* v. *John Deere Co.*, 383 U.S. 1, and an affidavit which does no more than to express the unsubstantiated opinions of affiants as to the relative merits of the appellant's device and prior art devices is entitled to no weight in ordinary circumstances. *In re Hollingsworth*, 45 CCPA 830, 253 F.2d 238, 117 USPQ 182."

3. SAME—OBVIOUSNESS—EVIDENCE OF COMPARATIVE TESTS.

"Appellant also protests the requirement of the Examiner and the Board that he present comparative tests showing the alleged superiority of his device in order to overcome the obviousness rejection. Insofar as the language used by the Board might be taken to indicate that comparative tests were the *only* evidence which could overcome the rejection, we would disagree with it. However, in the face of a strong obviousness rejection, as is presented here, it is certainly proper for the Examiner or the Board to require an applicant to come forward with such *facts* as will be effective to shift the burden of proof to the Examiner to come forward with further support for his conclusion of obviousness. *In re Katzschmann*, 52 CCPA 1497, 347 F.2d 620, 146 USPQ 66. Certainly comparative tests would be highly persuasive as showing such facts."

4. SAME—PARTICULAR SUBJECT MATTER—"SEAL FOR TRACK LINKS."

The refusal of a certain claim in an application entitled "Seal for Track Links," as unpatentable over the prior art, is affirmed.

AFFIRMED.

Julian Caplan for appellant.

Joseph Schimmel (*Jere W. Sears*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and Judges RICH, SMITH, ALMOND, and KIRKPATRICK [1]

ALMOND, *J.*, delivered the opinion of the court.

[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

This is an appeal from the decision of the Patent Office Board of Appeals affirming the rejection of the sole remaining claim of appellant's application entitled "Seal for Track Links." [2]

The invention relates to a metal-to-metal seal which serves to keep abrasive material such as sand and gravel dust out of the area where adjacent crawler-type tractor tread links are pivotally joined together. An over-all view of the treads, showing the method of connection of two links is illustrated in FIGURE 1 of appellant's application, and a detailed view of the metal-to-metal seal of the invention is illustrated in FIGURES 2 and 4.

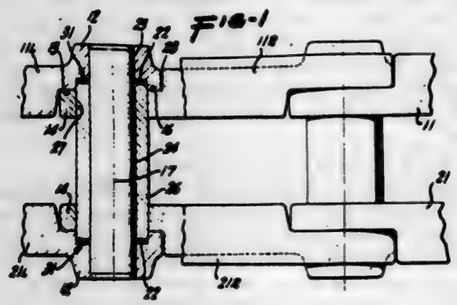


FIG-1

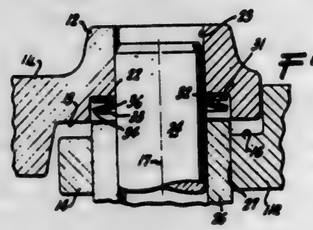


FIG-2

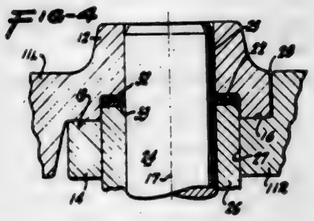


FIG-4

Each link 11 has a laterally outwardly offset boss 12 and, further, is relieved at its inner face as shown by reference numeral 13 to permit overlapping of end 14 of the adjacent link. End 14 is relieved at its outer face as indicated by reference numeral 16 to accommodate the end of the first-mentioned link. It is essential that the two adjacent links 11L and 11R as designated in FIG. 1 flex relative to each other about axis 17 as the chain travels around the drive and idler sprockets (not shown) which drive the track. It is also apparent from FIG. 1 that the links 11 are arranged in pairs on the inside and outside of the tractor. Thus, link 11L has as its mate link 21L which is the same in construction but oppositely facing.

The inner face of boss 12 is formed with a counterbore 22 of substantial depth surrounding the central bore 23 of said boss 12, bores 22 and 23 having the common axis 17. Fitting into bore 23 with a forced fit is pin 24 which interconnects the pair of links 11L, 21L. Surrounding pin 24 is a sleeve or bushing 26 which can rotate or oscillate rela-

[2] Serial No. 267,747, filed March 25, 1968.

tive to pin 24. Bushing 26 is forced into the bore 27 of end 14 of link 11R and its outer end enters counterbore 22 but does not reach the bottom thereof. The diameter of counterbore 22 is slightly greater than the outside diameter of bushing 26. Accordingly, bushing 26 turns relative to boss 12 but not relative to end 14, whereas pin 24 turns inside bushing 26 but does not turn relative to boss 12. Bushing 26 enters the corresponding counterbore 22 in the boss 12 of link 21L.

The structure as described thus far is conventional. In such a structure, abrasive material enters the crevice indicated at 28 in FIG. 1 between the links, and also into the interface between offsets 13 and 16, and thence between the outside of bushing 26 and the cylindrical surface of counterbore 22. Once such abrasive material enters the space between the relatively oscillating surfaces, rapid wear of the parts ensues.

Appellant's invention is a metal-to-metal seal which prevents entrance of abrasive material to the space surrounding pin 24. As shown in FIG. 2, the seal consists of a flat washer 32 against the surface of the counterbore in boss 12, and a truncated conical (Belleville) washer 33 having its small diameter end facing the flat washer 32 and its large diameter end facing the end of bushing 26. When assembled, the washers are compressed axially, and the Belleville washer is flattened as shown in FIG. 4. However, the Belleville washer retains its resiliency, and thus will maintain a seal as the washers wear, and a crevice opens up between the washers.

Appellant's specification states that because the diameter of the large end of the Belleville washer has greater frictional resistance to rotation than the small end, it will tend to remain stationary relative to bushing 26, and the small diameter end will tend to turn relative to pin 24. On the other hand, washer 32 tends to remain stationary with respect to boss 12. Hence, wear occurs as the small diameter end 36 oscillates relative to washer 32. This arrangement is said to insure that the wear of the relative movement of the two washers is absorbed by the washers themselves rather than the permanent members of the link assembly against which they fit, thereby preserving the life of links 11 and bushing 26.

The sole claim on appeal is:

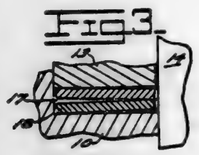
1. A track link assembly comprising a first link having at a first end thereof a laterally outward offset boss and a flat face facing inward on the inner face of said boss, said first link formed with a first bore extending through said boss normal to said inner face and a counterbore in said inner face, a second link having a second end partially overlapping said first end and oscillatable relative to said first link about the axis of said first bore, said second end having an outer face parallel and inwardly offset relative to said inner face, said second link formed with a second bore normal to and extending through said outer face coaxial with said first bore, said second bore of a diameter larger than said first bore and slightly less than said counterbore, a bushing force fit in said second bore with its outer end projecting beyond said outer face and partially into said counterbore and turnable in said counterbore relative to said first link, a pin rotatable inside said bushing and having an outer end force fit in said first bore, a Belleville-type first washer in said counterbore around said pin having its large diameter end against the adjacent end of said bushing, and a flat second washer in the bottom of said counterbore around said pin, said second washer on the small diameter side of said first washer, said first and second washers, having substantially the same outside diameter slightly less than the diameter of said counterbore, said first and second washers having substantially the same inside diameter slightly greater than the diameter of said pin, said washers squeezed between the bottom of said counterbore and the outer end of said bushing until said first washer is approximately flattened, said washers rotatably sealing said

first link and said bushing around said pin and exerting an axial thrust relative to said first and second links.

The references relied upon are:

Burgman, 2,906,562, Sept. 29, 1959.
Simpson et al., 3,050,346, Aug. 21, 1962.

Simpson is the basic reference, and it shows the identical link structure, but having a metal-to-metal seal consisting of two Belleville washers having their small diameter ends abutting. Because of its pertinence to the discussion which follows, FIG. 3 of the Simpson reference is reproduced below:



The advantages alleged by Simpson for his seal are substantially identical to those alleged by appellant. The disclosure of Simpson is that due to the greater engagement of the large diameter ends of the washers, the washers will remain stationary with respect to the bushing and boss, and will rotate relative to each other. Wear is thus said to be restricted to the faces of the washers. It should be noted that Simpson also compresses the washers during assembly, and that the crevice shown in FIG. 3 opens up upon wear, similar to the crevice in appellant's device.

Burgman also discloses seals for tread links. The Burgman seal comprises a rubber seal having a metal face. This metal face contacts a smooth hardened bearing washer disposed in a recess in the bushing, the bearing washer serving "as a facing for the recess."

The Examiner rejected the claim as being obvious under 35 U.S.C. 103. After noting that the sole difference between the claimed invention and the Simpson device is the substitution of a flat washer for one of the conical washers, and that Burgman suggests the use of a flat washer as a wear-bearing surface in a resilient seal, the Examiner reasoned:

The use of conical washers as sealing elements is well known in the art. Such washers are frequently employed either in multiple arrangement or as single washers depending upon the space to be filled or the amount of resiliency desired. Flat washers are also well known as having innumerable applications including that of providing wearing surfaces. One having ordinary skill in the art once having become aware of the application of conical washers to an endless track by virtue of the Simpson et al. disclosure would recognize especially in view of the suggestion of Burgman that a flat washer could be substituted for either one of the conical washers 18 without substantially adversely affecting the operation of the seal.

The Board affirmed, noting that Simpson discloses that the two Belleville washers, by virtue of their configuration, will be stationary relative to the parts their outer diameters engage and will rotate relative to each other. The Board said:

If this in fact take place, the disclosure of Simpson et al. clearly negatives any possible patentability of the instant case since it is perfectly obvious to substitute for one of the two Belleville washers a flat hard bearing washer to obtain only the same result, flat bearing washers being well-known to the art as exemplified by Burgman.

Appellant bases his appeal to this court primarily on the argument that the Simpson device, which he states is in wide commercial use, has an inherent defect which his invention overcomes. It is appellant's position that although Simpson states that his Belleville washers rotate relative to each other, as a practical matter it sometimes happens that foreign matter wedges in the crevice between the Belleville washers, locking them together, so that instead of turning relative to each other they turn together. When this occurs, the sharp corner on the large diameter end of the outer washer digs into the relatively soft material of the outer link and accordingly scores and enlarges the counterbore until it is severely worn. Such wear reduces the resilient effect of the seal and also enables abrasive material to enter through the enlarged counterbore into contact with the pin and the bore in the outer link, damaging the structure.

Appellant claims by affidavit that his invention solves this problem. The affidavit, by the appellant himself, states that he is head of the engineering department of WesTrac, largest independent manufacturer of tractor track replacement parts in the United States; that he has examined many worn tractor links embodying the Simpson invention; that a substantial number of these have the counterbore of the outer link scored by turning of the Belleville washer; that in a substantial number of cases this scoring is caused by the two Belleville washers "freezing" together through lodging of abrasive material between the Bellevilles, sufficient heat of friction generated between the rotating parts, or for some other reason; and that such scoring creates a passage whereby abrasive material can by-pass the seal and bring about destruction of the link seal.

Having thus made a statement based upon personnally observed factual matter concerning the problem of the prior art device, appellant alleged the following:

Affiant's construction shown in FIG. 2 has an advantage over Simpson in that the broad expanse of the flat washer 32 in contact with the bottom of the counterbore 22 provides a frictional area of contact of great amplitude as compared with Simpson and insures that the washer 32 will not turn relative to link 11L. Since the washer 32 is very hard as compared with the material of which the link is formed and since the Belleville washer 33 is also very hard, the sharp corner of the Belleville washer 33 does not destroy the washer 32 and hence wear of the bottom of the counterbore is eliminated. Furthermore, there is no substantial reduction in the sealing effect in applicant's construction as compared with Simpson. Thus, the structure of FIG. 2 of the present application reduces the possibility of eventual destruction of the seal by wear into the counterbore and is more effective in preserving a sealing effect over prolonged use than in Simpson.

The Examiner was critical of the affidavit on the ground that it was nothing more than an expression of opinion not substantiated by facts. The Examiner suggested that photographs should have been submitted to show wear or scoring of the prior art structure. Further, the Examiner felt that the affidavit lacked any factual basis for concluding that appellant's device was any improvement over the prior art. On this point he suggested that comparative tests would be required.

The Board agreed that under the facts of the present case, an opinion affidavit of an interested party is insufficient, and that a comparative test of the reference and application devices is a proper requisite.

[1] We are in partial disagreement with the Examiner and the Board as to the weight to be given the affidavit. The first part of the affidavit represents a report of the first-hand visual observation of factual matter by a person who is unquestionably qualified to observe and evaluate the subject matter. While the affidavit contains conclu-

sions concerning the cause and effect of the scoring, these are the conclusions of an engineering executive in a company which is vitally concerned with observing and evaluating causes of failure in tractor treads. The conclusions drawn relative to the Simpson device appear reasonable and to be within the competence of the affiant. *In re Neave*, 54 CCPA 999, 370 F.2d 961, 152 USPQ 274. We therefore accept the affidavit as evidence that the Simpson device will occasionally fail due to "freezing" of the Belleville washers.

[2] We agree with the Examiner and the Board, however, that the affidavit is unpersuasive insofar as it attempts to show superiority of appellant's device over the Simpson device. In effect, the affiant-inventor says no more than that he thinks his device is better than the prior art device. Since he alleges his familiarity with the prior art device, we would have inferred from the mere fact that he filed an application that he thought his device to be an improvement in some respect. Thus we consider the affidavit no more persuasive than the application itself on this point. In evaluating the obviousness of an invention, we are concerned with facts, *Graham* v. *John Deere Co.*, 383 U.S. 1, and an affidavit which does no more than to express the unsubstantiated opinions of affiant as to the relative merits of the appellant's device and prior art devices is entitled to no weight in ordinary circumstances. *In re Hollingsworth*, 45 CCPA 830, 253 F.2d 238, 117 USPQ 182.

Appellant argues that it should be self-evident that the flat washer of his invention is less likely than the Belleville of Simpson to "freeze" to the opposing Belleville. His position is

> * * * that a broad, flat washer such as the washer 32 of applicant has a greater area of contact with the bottom of counterbore 22 and hence that it does not tend to turn relative to the counterbore as easily as would be the case where a Belleville washer has merely its end edge in contact with the bottom of the counterbore, a much lesser area. *Since the frictional resistance between two bodies is proportional to the area of contact*, and since the area of contact between the flat washer of applicant is much greater than the area of contact of the end edge of the Simpson washer, *the fact that the flat washer is less likely to turn relative to the link than the Belleville washer is evident.* * * * [Emphasis added.]

This argument was totally demolished by the Solicitor, who pointed out that appellant's major premise is contrary to Coulomb's second law of friction,[3] and derived equations to demonstrate to the court that the Belleville washer actually has a greater restraining torque than the flat washer. Appellant has not controverted the application of Coulomb's law or the mathematical derivation.

[3] Appellant also protests the requirement of the Examiner and the Board that he present comparative tests showing the alleged superiority of his device in order to overcome the obviousness rejection. Insofar as the language used by the Board might be taken to indicate that comparative tests were the *only* evidence which could overcome the rejection, we would disagree with it. However, in the face of a strong obviousness rejection, as is presented here, it is certainly proper for the Examiner or the Board to require an applicant to come forward

[3] Encyclopedia Americana (1964 ed.), Subject—Friction, subtopic—Coulomb's Laws:
"Most texts in mechanics are agreed upon a set of conclusions first published by Charles Augustin de Coulomb in 1785 and supplemented by extensive work of Arthur Jules Morin (1832) * * *

* * * * * * *

The laws of Coulomb friction are: (1) The frictional force is directly proportional to the force or load pushing the two bodies together. (2) For a given load, the frictional force is independent of the area of contact. (3) The kinetic frictional force is independent of the velocity of sliding. (4) The coefficient of friction, static or kinetic, for any pair of surfaces depends upon the nature of the materials, their hardness and smoothness."

with such *facts* as will be effective to shift the burden of proof to the Examiner to come forward with further support for his conclusion of obviousness. *In re Katzschmann*, 52 CCPA 1497, 347 F.2d 620, 146 USPQ 66. Certainly comparative tests would be highly persuasive as showing such facts.

On this record, appellant has failed to produce a *factual* showing adequate to overcome the strong suggestion of obviousness presented in the art of record.

[4] The decision of the Board is affirmed.

AFFIRMED.

RICH, *J.*, dissenting, with whom SMITH, *J.*, joins.

The structure of the invention and the disclosure of the closest prior art, the patent to Simpson et al., No. 3,050,346, are adequately described in Judge Almond's opinion. The only issue in this case is obviousness under 35 U.S.C. 103. This is a case in which we clearly must be wary of making a judgment of obviousness on purely theoretical considerations and heed the voice of experience as it speaks to us from the record. We must also try to avoid hindsight reconstruction of prior art disclosures in the light of appellant's teachings.

Caterpillar Tractor Co., the leader in the field, well-knowing the need for a track link seal and what it must accomplish, devised the Simpson seal. In theory it would appear to solve the sealing problem. Its Simpson patent states:

> *Wear* of the ends of the bushings and the inner faces of the recesses 17 * * * *is* also *eliminated* because the washers 18 do not rotate relative to the bushing and the recess. All tendency toward wear in this area is between the hard faces of the washers 18 and is greatly minimized because of their hardness and the inability of abrasive materials to enter between their contacting surfaces. [Emphasis added.]

This appears to have been theorizing on the part of Simpson, or his patent solicitor. It also appears to have been erroneous.

Applicant, head of the engineering department of WesTrac Company, assignee of the application at bar and largest independent manufacturer of replacement parts for tractor tracks in the United States, has filed an affidavit reciting the following *facts*:

> The principal portion of the business of WesTrac is supplying replacement parts with [for?] worn Caterpillar tractors. Recent models of Caterpillar tractors use the structure shown in * * * Simpson Patent No. 3,050,346. In the course of affiant's duties, he has had occasion to examine many worn Caterpillar track links and determine the cause of failure thereof.
>
> In a substantial number of worn Caterpillar tracks, it has been found that the counterbore of the outer link has become scored by turning of the sharp outer edge of the adjacent Belleville washer indicated by reference numeral 18 in FIG. 1 of Simpson. Such washer 18 is of a very hard material whereas the link boss 16 is of a relatively soft material and any turning movement of the sharp corners of the washer results in a scoring of the bottom of the counterbore.

Accepting these facts, as the majority opinion does, it follows that in a "substantial number" of cases Caterpillar's Simpson seal fails to operate as intended, or as it is supposed to operate in theory, and one is forced to the inevitable conclusion that solving the problem of sealing this particular tractor tread joint is not as easy as it looks. Simpson did not solve it with his invention and he had available to him Burgman's disclosure of rubber seals faced with flat washers as wearing surfaces. Burgman's patent issued Sept. 29, 1959. Simpson did not file until Jan. 24, 1961. Burgman was no help to Simpson. Equally, his *teachings* are of no help in curing the defects of Simpson's seal.

The majority also expressly accepts the showing of Hayatian's affidavit that the *theory* of Simpson's patent is fallacious, at least in a substantial number of cases where grit gets between his Belleville washers, causing them to rotate together. The affidavit showing on this matter is as follows:

> ***Theoretically***, the two Belleville washers 18 of Simpson should turn relative to each other rather than relative to the link and relative to the bushing 13, and hence *theoretically the washer should not dig into the bottom of the counterbore*. However, in practice, in a substantial number of cases, it has been found by affiant that for some reason such as the lodging of abrasive material between the two Bellevilles, sufficient heat generated by friction between the rotating parts, or for some other reason, the two Bellevilles "freeze" relative to each other and no longer turn. When this happens, *the Belleville washer 18 at the top of FIG. 1 tends to dig into the soft bottom of the counterbore* and to score the bottom of the counterbore. When this occurs, the space between the end of the bushing 13 and the bottom of the counterbore effectively increases, thereby reducing the resilient effect of the seal and lessening the seal. Further such scoring of the bottom of the counterbore provides a passage whereby the abrasive material can by-pass the seal and get into the bottom of the counterbore, pin 14, and bushing 13, and soon bring about the destruction of the link seal. [Emphasis added.]

The alleged obviousness here is predicated on the disclosures of the Simpson and Burgman patents and on nothing else. But it seems clear that from reading the Simpson patent it is not even known how the Simpson seal actually operates in practice or what its defects are. Appellant, due to his advantageous position in this art, made his invention in three steps. First, he discovered what the defects of the Simpson seal are; second, he reasoned out what the causes of those defects are; third, he devised a different combination of old elements which would avoid those defects. I am unable to see wherein what he did was obvious in the sense of 35 U.S.C. 103.

The legal defect of the majority opinion is the same as that of the Examiner and the Board. All three proceed on the premise that appellant may have his patent *if* he supplies persuasive evidence of the *superiority* of his seal over that of Simpson's. Such proof is demanded, of course, on the premise that appellant's seal is prima facie obvious from the references, which I find not to be the case. The record here shows very clearly that even the defects of Simpson which started appellant's inventive process were anything but obvious. Appellant's invention resides as much in finding the cause of the problem created by those defects as in overcoming it. How, then, can the invention "as a whole" be obvious, as required by section 103?

Since there is no prima facie obviousness, it is beyond legal propriety for the Patent Office to demand evidence of superiority over Simpson. As a practical matter, it should also be considered what is entailed in supplying such evidence. It can be presumed that Caterpillar tractor tread linkages in such a commercially successful tractor as is produced by Caterpillar do not wear out except after considerable use. It can be further presumed that it would take at least as long to prove superiority of appellant's seal construction as it would to develop, through use, the defects in the Caterpillar Simpson seals. Since only a "substantial number" of Simpson seals—whatever that may mean—develop the defects recited in the affidavit, it would further require that appellant install his seals in a statistically significant number of tractors and somehow manage to get them into parallel service with an equal number of otherwise identical tractors having Simpson seals, running them under a kind of test-track supervision until a "substantial number" of the Simpson seals have been found to break down and then tear down his own seals to find out how much they have worn in comparison. It seems to me that to demand this kind of evidence is to demand the impossible. It might take years, if we assume it is practicable at all, and where, meanwhile, has the Patent Office prosecution gone?

On its face, appellant's proposed solution appears to be a workable one and an advance in the art. He should have his patent with his single claim. Should it turn out that his seal is not in fact superior, after a number of years of trial, only his assignee will be the loser. Certainly the public will not be injured by another patent on a commercially unsuccessful device. On the other hand, if it turns out that appellant's seal is superior in fact to Simpson's in accordance with appellant's educated belief, then his assignee should be protected from imitation without compensation. Such prospective commercial success is a "secondary consideration" indicative of patentability. *Graham* v. *John Deere Co.*, 383 U.S. 1 (1966).

The theoretical arguments advanced by the Solicitor and accepted by the majority based on Coulomb's second law of friction, like the theories in the Simpson patent, are as much open to question when they come to be tested against the operation of tractor tread link joints in mud, dust, and sand where theories based on laboratory experiments do not seem always to work out in practice. This argument is an afterthought to bolster up a legal argument and entitled to little weight. Even if the theory worked out in practice and the flat washer rotated contrary to appellant's theory, it seems evident that it would not cut the groove in the bottom of the counterbore cut by the edge of a Belleville washer and so would not open up the seal as does the Belleville, beside which grit under the flat washer might cause it to stand still in spite of Coulomb's second law of friction. One theory seems to be as good as another—and as useless—in this area and I think we should be practical and listen to the only expert who has had anything to say of record, the appellant.

For the above reasons I would reverse.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,564,044, C. B. Willmore, ALUMINUM-MAGNESIUM CASTING ALLOYS; **2,733,991**, same, **filed** Dec. 22, 1962, D.C., W.D. Mo. (Kansas City), Doc. 14196–2, *Acme Precision Products, Inc. and William F. Jobbins, Inc.* v. *American Alloys Corporation*.

2,601,040, J. G. Livingstone, FITTING AND SEALING MEANS THEREFOR; **2,743,844**, same, POURING SPOUT WITH CAP AND DRIP RETURN; **2,763,402**, same, ADAPTER, **filed** Apr. 3, 1967, D.C., N.D. Ohio (Cleveland), Doc. C67–235, *Jay G. Livingstone* v. *Maw-Vack, Inc. et al.* Stipulation of counsel dismissing complaint and counterclaim with prejudice to each, Nov. 22, 1968.

2,733,991. (See 2,564,044.)

2,743,844. (See 2,601,040.)

2,763,402. (See 2,601,040.)

2,790,516, Wright and Butler, VEHICLE DISC BRAKE ASSEMBLY; **2,921,650**, H. J. Butler, DISC BRAKE; **Re. 24,870**, same, VEHICLE BRAKE, **filed** Dec. 5, 1967, D.C., E.D. Mich. (Detroit), Doc. 30629, *Dunlop Company Limited* v. *Kelsey Hayes Company*.

2,921,650. (See 2,790,516.)

2,977,839, R. B. Koch, NYLON TUBING WITH BRAIDED COVER AND METHOD OF MAKING; **3,251,381**, same, SYNTHETIC HOSE, **filed** Aug. 22, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1571, *The Polymer Corporation* v. *I-T-E Imperial Corporation*. Notice of dismissal (issue never joined), Oct. 24, 1968.

2,982,145, H. Orner, RECIPROCABLE FEED MECHANISM; **3,234,810**, same, PRELOADED BALL BEARING SCREW AND NUT MECHANISM, **filed** Oct. 14, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68–1710–EC, *Harry Orner* v. *Sargent Industries*.

2,995,035, Bloxsom and Rhodes, WIND TUNNEL WITH A CONTROLLED MEANS TO PRODUCE HIGH ENERGY GAS STREAMS; **3,230,764**, same, METHOD OF DETERMINING HEAT TRANSFER RATES AND TEMPERATURE CONDITIONS, **filed** Oct. 3, 1968, D.C., W.D. Wash. (Seattle), Doc. 7927, *Barry V. Rhodes and Daniel E. Bloxsom, Jr.* v. *The Boeing Company*.

3,048,498, Juvinall and Marsh, ELECTROSTATIC SPRAY COATING SYSTEM, **filed** Jan. 10, 1969, D.C., N.D. Ill. (Chicago), Doc. 69c47, *Ransburg Electro-Coating Corp.* v. *The De Vilbiss Co. and Rembrandt Lamp Corp.*

3,064,949, H. A. Dewenter, MIXER; **3,216,473**, same, COMMINUTION APPARATUS; **3,240,246**, same, BLENDER, **filed** Dec. 13, 1968, D.C., S.D.N.Y., Doc. 68–C–4983, *Procter-Silex Incorporated* v. *Hamilton Cosco, Inc.*

3,183,821, Averill and Straub, SELECTIVE AIR DISCHARGE PATTERN SLOT DIFFUSERS; **3,242,847**, same, METHODS OF AIR DISTRIBUTION THROUGH ELONGATED SLOTS; **3,185,068**, Straub and Averill, AIR DISTRIBUTION DEVICES; **3,185,069**, same, **filed** May 10, 1966, D.C., S.D.N.Y., Doc. 66–C–1355, *Connor Engineering Corp.* v. *Titus Manufacturing Corp.* Stipulation and order of dismissal, Nov. 21, 1967.

3,185,668. (See 3,183,821.)

3,185,669. (See 3,183,821.)

3,194,833, J. W. Von Brimer, WASHING MACHINE AND ELECTROMAGNETIC DRIVE SYSTEM THEREFOR; **3,335,300,** same, LINEAR INDUCTION MOTOR, filed Nov. 3, 1967, D.C., S.D. Calif. (San Diego), Doc. 67-228-K, *V.B. Research & Development* v. *Joe W. Von Brimer and Hydro-Test.*

3,216,473. (See 3,064,949.)

3,219,376. (See 3,251,551.)

3,230,764. (See 2,995,035.)

3,234,810. (See 2,982,145.)

3,239,607, Mack and Galstian, MASK-SUPPORT FOR TV TUBES, filed Dec. 19, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c2174, *Plastic Ward, Inc.* v. *Superior Plastics, Inc.* Consent judgment, patent valid; defendant has infringed, Dec. 17, 1968.

3,240,246. (See 3,064,949.)

3,242,847. (See 3,183,821.)

3,251,331. (See 2,977,839.)

3,251,551, A. C. Walberg, ELECTROSTATIC COATING SYSTEM; **3,219,276,** E. O. Norris, PLURAL NOZZLES HAVING INTERSECTING SPRAY AND CONTROL THEREFOR, filed June 6, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1041, *H. G. Fischer & Company* v. *Gyromat Corporation and Indesco Corporation.* Motion of defendants allowed, Sept. 13, 1968.

3,293,004. (See 3,293,108.)

3,293,108, Nairn, Harkins, Jr., Lakes, Ehrenfeld, Jr. and Tarlow, TEXTURED FOAM PRODUCTS; **3,293,004,** same, TEXTURED FOAM PROCESSES, filed Dec. 20, 1966, D.C., S.D.N.Y., Doc. 66-C-4397, *Congoleum-Nairn Inc.* v. *New London Mills, Inc.* Final judgment on consent, Dec. 31, 1968. Same, filed Dec. 20, 1966, D.C.N.J. (Camden), Doc. 1262-66, *Congoleum-Nairn, Inc.* v. *Mannington Mills, Inc.* Dismissed without prejudice, June 13, 1968.

3,328,676. (See Re. 26,119.)

3,355,360. (See 3,194,032.)

Re. 24,870. (See 2,790,516.)

Re. 26,119, S. I. Slater, CONTINUOUSLY VARIABLE DIMMER SWITCH; **Re. 26,267,** B. W. Matthews, ELECTRICAL SWITCH WITH CAMMING BRIDGING CONTACT; **3,328,676,** S. I. Slater, CONTINUOUSLY VARIABLE DIMMER SWITCH, filed July 11, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1290, *Skil Corporation* v. *Lucerne Products, Inc.*

Re. 26,267. (See Re. 26,119.)

REISSUES

MAY 13, 1969

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

26,578
BEARING STRUCTURE

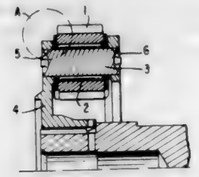
Fritz Naumann, Unterensingen, Kreis Nurtingen, Germany, by Daimler-Benz Aktiengesellschaft, Stuttgart-Untertuerkheim, Germany, a corporation of Germany, assignee

Original No. 3,344,689, dated Oct. 3, 1967, Ser. No. 389,117, Aug. 12, 1964. Application for reissue Mar. 7, 1968, Ser. No. 724,659

Claims priority, application Germany, Aug. 17, 1963, D 42,272

Int. Cl. F16h *1/28*

U.S. Cl. 74—801 **4 Claims**



A planet gear in which a gear is supported on a bolt by means of bearing needles and in which at least two abutment discs of different hardness are rotatable on a bolt and one positioned axially between each end face of the gear and a surface of the corresponding planet gear carrier.

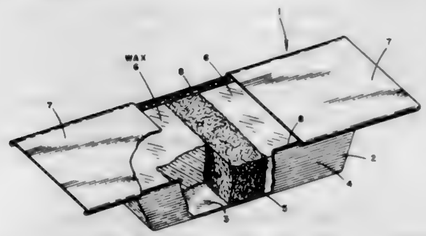
26,579
HEATER

Mathis T. Waddell, John M. Powers, and Rhoderick K. Saunders, Baytown, Tex., assignors, by mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware

Original No. 3,292,608, dated Dec. 20, 1966, Ser. No. 536,526, Feb. 25, 1966, which is a continuation of application Ser. No. 412,720, Nov. 20, 1964. Application for reissue Mar. 18, 1968, Ser. No. 717,057

Int. Cl. A01g *13/06;* **F23q** *25/00;* **F23d** *3/16*

U.S. Cl. 126—59.5 **12 Claims**



A heater, useful in orchards, which comprises a pan with a wicking material extending between two sides of the pan and resting on the pan bottom and burns a wax having a fire point of about 425° to 650° F. A cover on the pan opens to expose the wicking material so that controlled heating may be accomplished for periods in excess of ten hours.

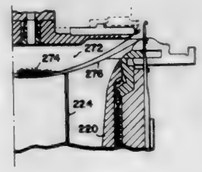
26,580
METHODS AND MACHINES FOR STOCKING PRODUCTION

John A. Currier, Gilford, N.H., assignor, by mesne assignments, to Scott & Williams, Inc., Laconia, N.H., a corporation of Delaware

Original No. 3,340,706, dated Sept. 12, 1967, Ser. No. 302,868, Aug. 19, 1963. Application for reissue May 20, 1968, Ser. No. 731,368

Int. Cl. D04b *9/06, 9/38*

U.S. Cl. 66—26 **34 Claims**



A fine-gage circular hosiery knitting machine provides for closing of the toe of the stocking during the knitting process. The closure of the toe is accomplished by holding loops on the transfer elements while kniting additional courses to provide two plies of fabric continuous with each other across a fold. The fabric at the fold is then constricted radially together by providing relative rotation between the transfer elements and the needles, after which the loops held by the transfer elements are transferred to the needles and the plies together by interlocked courses. The stocking is knit toe-first, and after closure of the toe is effected the remainder of the stocking is knit and by an additional transfer operation an inturned welt is formed and after a second transfer with interlocked courses the stocking is pressed off.

26,581
KNITTED PRODUCTS

John A. Currier, Gilford, N.H., assignor, by mesne assignments, to Scott & Williams, Inc., Laconia, N.H., a corporation of Delaware

Original No. 3,327,500, dated June 27, 1967, Ser. No. 573,331, Aug. 18, 1966, which is a division of application Ser. No. 302,868, Aug. 19, 1963. Application for reissue May 20, 1968, Ser. No. 731,367

Int. Cl. D04b *9/46;* **A41b** *11/02*

U.S. Cl. 66—187 **26 Claims**



A fine-gage circular hosiery knitting machine provides for closing of the toe of the stocking during the knitting process. The closure of the toe is accomplished by

holding loops on the transfer elements while knitting additional courses to provide two plies of fabric continuous with each other across a fold. The fabric at the fold is then constricted radially together by providing relative rotation between the transfer elements and the needles, after which the loops held by the transfer elements are transferred to the needles and the plies knit together by interlocked courses. The stocking is knit toe-first, and after closure of the toe is effected the remainder of the stocking is knit and by an additional transfer operation an in-turned welt is formed and after a second transfer with interlocked courses the stocking is pressed off.

PLANT PATENTS

GRANTED MAY 13, 1969

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,886
ROSE PLANT
Eugene S. Boerner, deceased, late of Benton, N.Y., by Lincoln Rochester Trust Company, Rochester, N.Y., and Roger L. Boerner, Milwaukee, Wis., executors, assignors to Jackson & Perkins Company, Newark, N.Y., a corporation of New York
Filed Oct. 13, 1967, Ser. No. 675,718
Int. Cl. A01h *5/02*
U.S. Cl. Plt.—26 **1 Claim**

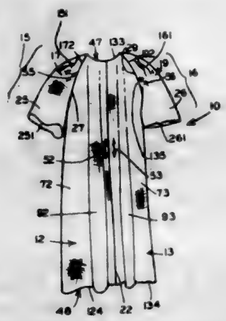
1. A new and distinct variety of rose plant of the floribunda class, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of an upright habit of plant growth suitable for garden use, excellent suitability as a greenhouse variety having a high cut-flower productivity, abundant foliage having a distinctive and attractive Hay's Maroon color, an attractive ovid pointed flower bud form and a distinctive and attractive flower color corresponding to Thulite Pink, overcast with Cameo Pink.

PATENTS

GRANTED MAY 13, 1969

GENERAL AND MECHANICAL

3,443,260
BED PATIENT'S GOWN
Clarisse L. O'Keefe, 2727 Nebraska 79106, and Glenna R. Graham, 2016 Monroe 79109, both of Amarillo, Tex.
Filed Dec. 12, 1966, Ser. No. 600,889
Int. Cl. A41b *9/00, 1/08*
U.S. Cl. 2—114 **3 Claims**



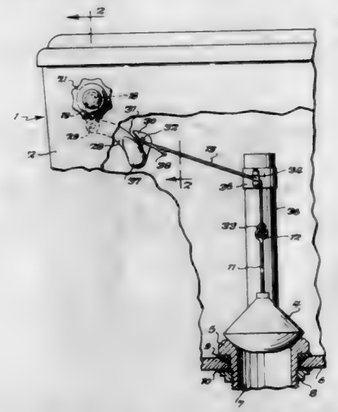
A bed patient's gown free of fastening or tightening means below the level of the neck of the wearer, and with a full length opening for purposes of ready removal from and donning by a bed-patient wearer, made of soft and flexible panels, develops loose folds that provide that, in the erect and/or walking position of the wearer, the full length opening is normally closed to avoid partial nakedness and to protect the modesty of the wearer in both such positions.

3,443,261
PROSTHETIC STRUCTURES FROM MICROCRYSTALLINE COLLAGEN
Orlando A. Battista, Yardley, Pa., and Mamerto M. Cruz, Jr., Pennington, and Walter J. Riley, Westfield, N.J., assignors to FMC Corporation, Philadelphia, Pa., a corporation of Delaware
No Drawing. Filed Sept. 1, 1967, Ser. No. 664,955
Int. Cl. A61f *1/00*
U.S. Cl. 3—1 **15 Claims**

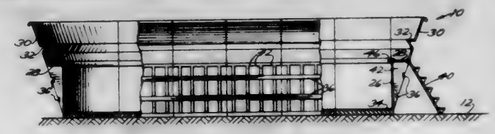
Artificial ivory and bone-like structures formed from a homogeneous mixture of a water-insoluble, microcrystalline ionizable salt of collagen, calcium phosphate and water. Fibers may be included to improve strengths, other ions may be included to increase hardness and collagen cross-linking agents may be included to improve moisture and water-resistance.

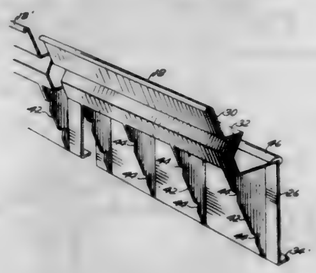
3,443,262
FLUSH VALVE TRIPPING DEVICE
Harry W. Hudson, Littleton, Colo., assignor to Twentieth Century Products Corporation, Englewood, Colo.
Continuation-in-part of application Ser. No. 556,602, June 10, 1966. This application Nov. 30, 1967, Ser. No. 686,964
Int. Cl. E03d *1/34, 5/02;* **F16h** *21/44*
U.S. Cl. 4—67 **10 Claims**

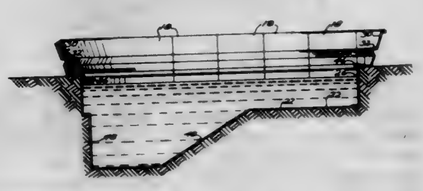
A crank is connected to one end of a stem and a handle connected to the other for rotating the stem within a bushing. A link is pivotally connected to the crank, and a flexible line is connected to the link and adapted for connection to a flush valve. The link is weighted adjacent the end to which the flexible line is connected. The flexible line is looped and the loop inserted through a slot in the link, with the adjacent end of the line passing through a second, open ended slot and through the loop, for being gripped thereby.



3,443,263
SWIMMING POOL CONSTRUCTION
Arthur J. Minasy, 21 Elm St., Woodbury, N.Y. 11797
Filed Apr. 17, 1967, Ser. No. 631,518
Int. Cl. E04h *3/16*
U.S. Cl. 4—172 **8 Claims**



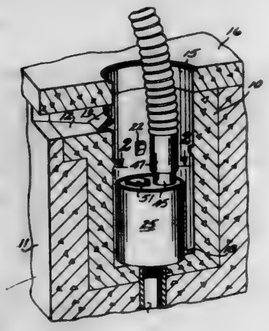




Formation of swimming pool by means of premolded plastic panels in edge to edge relationship, the panels

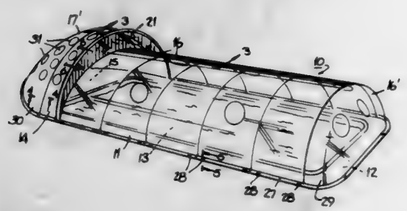
being formed with integral deck and seats and being specially configured in plan and along their edges to combine ease of assembly with versatility.

3,443,264
SWIMMING POOL VACUUMING APPARATUS
Robert E. Miller, 524 Elinor Drive, Fullerton, Calif. 92632
Filed Nov. 8, 1966, Ser. No. 596,381
Int. Cl. E04h 3/16; B08b 5/04
U.S. Cl. 4—172 9 Claims



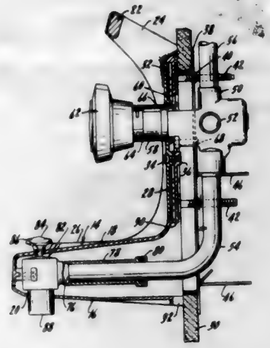
An open top container adapted to be removably placed in a swimming pool strainer well with an exit pipe nipple received in the exit port of the well so that the swimming pool will draw water out of the container through said exit pipe nipple; said container having a transparent cover closing the top thereof, which cover has a vacuum hose receiving nipple and a vacuum breaking port therethrough, which port can be selectively closed; said container having a cross dimension much greater than said vacuum hose receiving nipple and said exit pipe nipple to form an enlarged chamber to trap a limited amount of air, and a strainer removably located in said container for straining water drawn through the container.

3,443,265
POOL COVER
Charles J. Hauck, 112 Heller Way, Upper Montclair, N.J. 07043
Filed June 30, 1967, Ser. No. 650,430
Int. Cl. E04b 1/32
U.S. Cl. 4—172 14 Claims



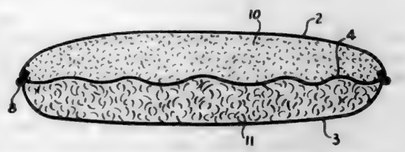
The pool cover is made of interconnecting elements which form an arched section over the tank of the swimming pool and a cabana section at the end of the pool to provide a lounging area. The cover is made of noncorrosive rigid plastic materials so as to be useful year-round. The arched section is spaced above the tank of the pool to permit swimming when in place.

3,443,266
BATHTUB COMBINATION PLUMBING FIXTURE
Paul A. Mongerson, Elyria, and Joseph E. Ellison, Amherst, Ohio, assignors to Standard Screw Company, Hartford, Conn., a corporation of New Jersey
Filed Nov. 24, 1967, Ser. No. 685,375
Int. Cl. F16l 5/00
U.S. Cl. 4—191 22 Claims



This invention relates to a plumbing fixture and means for mounting it. In particular the invention relates to a bathtub combination plumbing fixture which may include, as an integral part of the fixture, a grab bar or hand grip, a mixing valve and a control member therefor, a soap dish, a spout for water discharge into the tub, and a diverter for controlling water flow to the spout or shower. The mounting for the plumbing fixture is formed by means of a mounting plate, positioned on the opposite side of the wall surface from the utilitarian and decorative portions of the plumbing fixture described above.

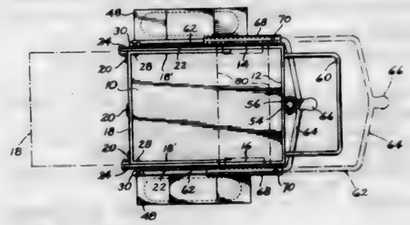
3,443,267
PILLOW
Meyers Schuckman, Skokie, Ill., assignor to American Feather Products, Inc., Chicago, Ill., a corporation of Illinois
Filed Sept. 19, 1967, Ser. No. 668,907
Int. Cl. A47g 9/00
U.S. Cl. 5—341 1 Claim



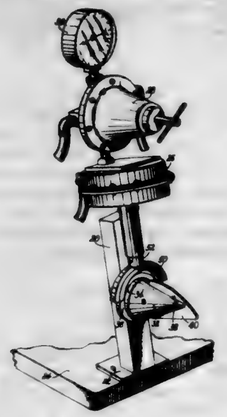
A pillow comprises two compartments each being about one-half the pillow height. One compartment contains down feathers and the other contains resilient uncrushed feathers. There are two different ticking materials, one constituting the outer ply of each compartment.

3,443,268
COMBINATION TRAILER AND HAND CART
Marvin F. Symes, Buel Apts., 5th and Madrona, Apt. 14, Tillamook, Oreg. 97141
Filed June 18, 1968, Ser. No. 738,005
Int. Cl. B62b 5/06, 11/00, 19/04
U.S. Cl. 9—1 10 Claims

A container supports at its forward end a longitudinally retractable trailer hitch, a fixed handle and a vertical retractable caster wheel, and is provided with a rear wall pivoted at its bottom edge. The container is supported for transport either on wheels, snow runners, or pontoons.



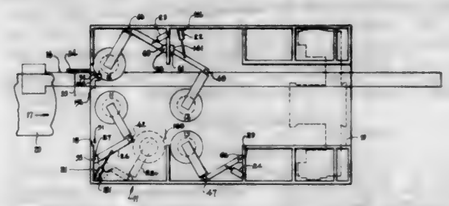
3,443,269
TOP LINE PRESSING MACHINE FOR SHOE UPPERS
George W. Helseler, Saugus, Mass., assignor to Boston Machine Works Company, Lynn, Mass., a corporation of Massachusetts
Filed Nov. 22, 1967, Ser. No. 685,199
Int. Cl. A43d 7/14, 25/00, 27/00
U.S. Cl. 12—55 3 Claims



After the top skived edge of a shoe upper has been turned and cemented to form a folded-back top border, about half an inch of the fold at the ends of the upper which are to be stitched together to form the back seam are opened up to facilitate the stitching of the back seam, thus forming small end flaps. When the back seam has been stitched, cement is applied to these flaps and the herein described machine is employed to fold the flaps back again and press them in place.

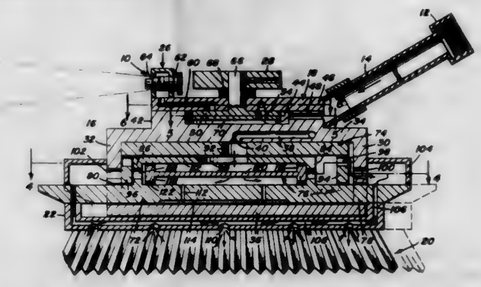
3,443,270
AUTOMATIC CAR WASHING APPARATUS
Earl Dallas Smith, 6202 E. Sage Drive, Scottsdale, Ariz. 85251
Filed Dec. 29, 1966, Ser. No. 605,847
Int. Cl. B08b 1/02
U.S. Cl. 15—21 19 Claims

A vehicle antenna sensor wand mounted to an overhead structure responds to engagement by the antenna to terminate rotation of a vehicle scrubbing brush for collapse of the bristles to avoid engagement thereof with the antenna. A brush drive motor is mounted to a brush arm on a pivotal mounting tiltable in response to brush loading to cause an actuator to retract the brush arm momentarily for reduced brush pressure on the vehicle,



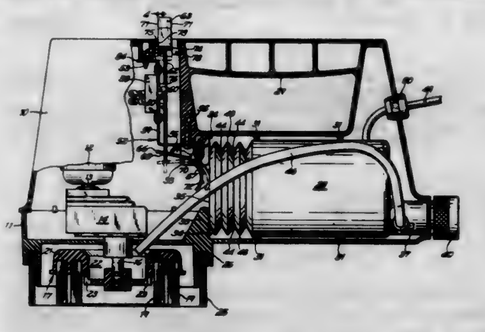
followed by resumption of normal brush loading on the vehicle.

3,443,271
RECIPROCATING FLUID MOTOR
Henry W. Lyons, P.O. Box 3278, San Angelo, Tex. 76901
Filed May 9, 1966, Ser. No. 548,538
Int. Cl. A47l 11/12; F01l 23/00
U.S. Cl. 15—22 23 Claims



A fluid motor housing encloses a pair of expansible chambers separated by a piston. As the piston approaches the end of its stroke in one direction, outflow from the contracting chamber is throttled by an exhaust valve which simultaneously vents inflow to the expanding chamber. A pressure responsive valve senses the throttled outflow condition to reroute inflow of fluid from one chamber to the other to reverse the direction of movement of the piston.

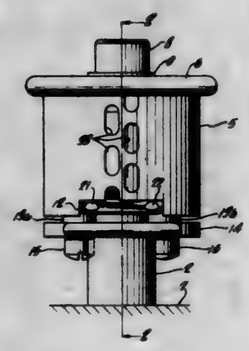
3,443,272
UPHOLSTERY CLEANER
William F. Trelc, Boonville, Mo., and Albert J. Petri, South Bend, Ind., assignors to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware
Filed Sept. 1, 1967, Ser. No. 665,038
Int. Cl. A47l 11/204
U.S. Cl. 15—29 10 Claims



A device of the portable power driven rotary brush type having a reservoir containing a fluid cleaning formu-

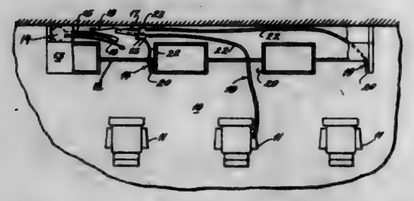
lation to be applied selectively during operation of the rotary brush. A control member having a first inoperative position and movable to second and third positions. The control member is moved from the first inoperative position to the second position to energize the brush drive means and to the third position to effect selective delivery of the cleaning formulation.

3,443,273
TAPE HANDLING ELEMENT
Andrew E. Arch, Arcadia, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Apr. 4, 1967, Ser. No. 628,480
Int. Cl. A47l *5/38*; B65h *23/32*
U.S. Cl. 15—368 17 Claims



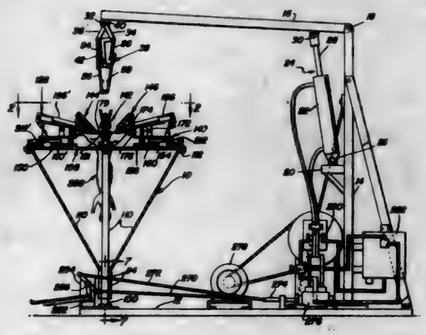
A first surface is adapted to guide the movement of tape in a direction parallel to its length. A second surface is adapted to fix the position of the tape transverse to its length at the first surface when one edge of the tape is in contact therewith. A force is exerted at at least two points on the other edge of the tape in a direction transverse to its length so as to hold the one edge of the tape in contact with the second surface. Preferably the force is exerted by a gimbal-mounted spring. The first surface is cylindrical and two parallel rows of openings are arranged transverse to the length of tape. A vacuum source is connected to the openings behind the first surface. As a result, dust particles are washed from the tape as it passes over the first surface.

3,443,274
CENTRAL VACUUM SYSTEM FOR REMOVING CUT HAIR
James L. Rankin, 5952 Brown Road, St. Louis, Mo. 63134
Filed June 6, 1966, Ser. No. 555,521
Int. Cl. B60s *1/64, 1/54*; A47l *5/38*
U.S. Cl. 15—314 2 Claims



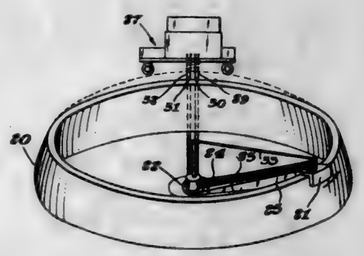
A central vacuum system for barber shops including a plurality of hair removing nozzles connected to a manifold through a backbar with the manifold being of truncated conical shape to connect to any size vacuum source. Each of the vacuum nozzles has an on-off control switch and electrical wiring positioned outside the vacuum hose but inside a protective cover and a plug-in arrangement so that each of the vacuum nozzle units is adapted for rapid connection and disconnection to the manifold and to a source of electrical energy.

3,443,275
MINK SKINNING MACHINE
Dennis L. Radtke, Benson, Minn. (112½ W. 7th St., Morris, Minn. 56267)
Filed Nov. 29, 1966, Ser. No. 597,708
Int. Cl. A22b *5/16*
U.S. Cl. 17—21 15 Claims



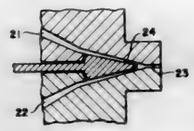
This disclosure pertains to a supporting structure including anchor means spaced radially outwardly of and circumferentially about an axis along which an animal to be skinned is to be moved. The anchor means are shiftable radially of the aforementioned axis and are adapted to engage adjacent portions of the skin of the animal whereby the skin may be peeled from the carcass of the animal as the latter is moved along said axis.

3,443,276
APPARATUS FOR MAKING WALLED STRUCTURES OF PLASTIC FOAM
Hubert S. Smith, Essexville, and Donald R. Wright, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Dec. 15, 1965, Ser. No. 513,998
Int. Cl. B29d *27/04*; B29h *7/20*
U.S. Cl. 18—5 8 Claims



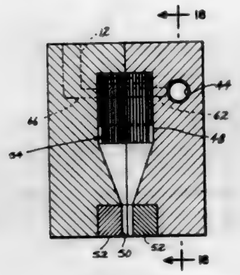
Walled structures are prepared of foam-in-place plastic material employing a depositing head having a pair of opposed side forming belts on top of the forming belts which are driven at a predetermined rate. Formable material is passed to the channel formed by the belts as the depositing or forming head progresses about the structure.

3,443,277
APPARATUS FOR PRODUCING A LAMINATE HAVING MECHANICALLY INTERLOCKING LAYERS
Hans Frielingsdorf, Delft, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Nov. 5, 1965, Ser. No. 506,525
Claims priority, application Netherlands, Nov. 27, 1964, 6413790
Int. Cl. B29f *3/012*; B29c *19/00*
U.S. Cl. 18—12 3 Claims



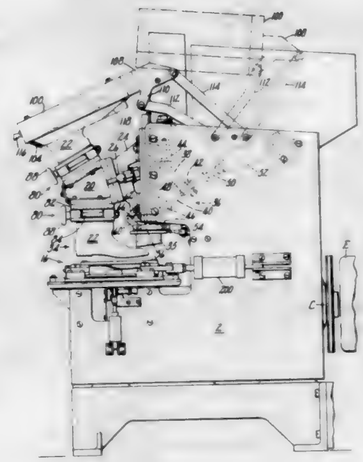
Apparatus for producing a laminated thermoplastic body made up of separate components comprising an extrusion die head having separate extrusion channels for forming the separate components by extrusion, which channels lead to a common outlet channel for the thermoplastic body composed of the components and flow-disturbing means positioned between the separate extrusion channels at the point where the separate extrusion channels merge into the common outlet channel and contacting the adjacent surfaces of the components.

3,443,278
APPARATUS FOR EXTRUDING MULTICOLORED SHEET MATERIAL
Jan P. Nauta, West Hartford, Conn., assignor to Rowland Products, Incorporated, Kensington, Conn., a corporation of Connecticut
Filed Oct. 22, 1965, Ser. No. 500,775
Int. Cl. B29f *3/12*; B29d *7/02*; D01d
U.S. Cl. 18—13 14 Claims



An extrusion apparatus is provided for fabricating synthetic thermoplastic sheet material having differentially colored layers and utilizes an extrusion die member fed by a plurality of conduits for differentially colored fluid synthetic thermoplastic material. A color distributing stack of spacer and flow elements in the chamber has a plurality of manifolds extending therethrough and communicating with the conduits with the flow elements of the stack having apertures extending from the manifolds toward the extrusion orifice to provide superposed flow of differentially colored synthetic thermoplastic material.

3,443,279
SHOE MOLDING MACHINES
Donald B. McIlvin, Danvers, and Robert J. Bernard, Peabody, Mass., assignors to USM Corporation, Flemington, N.J., a corporation of New Jersey
Filed Nov. 14, 1966, Ser. No. 594,087
Int. Cl. B29h *5/12*
U.S. Cl. 18—17 6 Claims

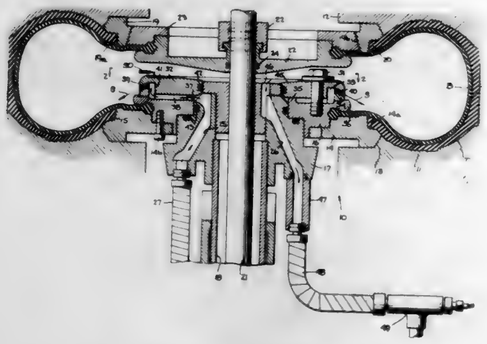


1. A machine for molding soles and toe caps onto footwear, said machine comprising a frame, bottom and side mold means on the frame, at least one top mold member for supporting a lasted footwear upper, a toe cap mold member, carriage means supporting the top mold member and the toe cap mold member and mounted on the frame for movement toward and away from the bottom and side mold means, first toggle means on the frame for moving the carriage means to place the top mold member in cooperative relationship with the side mold means, second toggle means on the carriage means movable only in response to the operation of the first toggle means to place the toe cap mold member in cooperative relationship with the top mold member and the side mold means to enclose a mold cavity about the bottom and toe portions of the upper, and single power means for moving said first and said second toggle means.

3,443,280
APPARATUS FOR CURING TIRES
Richard H. Hugger, Wyckoff, N.J., assignor to Uniroyal Inc., a corporation of New Jersey
Original application Feb. 4, 1963, Ser. No. 255,823, now Patent No. 3,329,748, dated July 4, 1967. Divided and this application Nov. 29, 1966, Ser. No. 597,729
Int. Cl. B29h *5/02*
U.S. Cl. 18—17 14 Claims

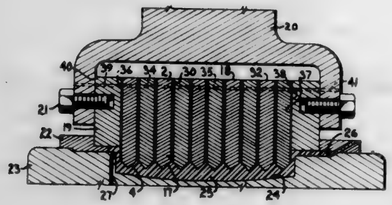
1. In combination with a tire curing press having separable upper and lower mold halves defining, when closed, a tire-shaped mold cavity, and further having a fluid-tight curing bladder disposed coaxially with respect to said mold cavity and adapted to receive steam under pressure as the tire shaping and curing medium; means defining a plurality of nozzles distributed around the entire circumference of the radially innermost section of said mold cavity and having their axes oriented at a down-

ward angle to the horizontal for admitting said steam into said bladder in the form of a plurality of high velocity jets along respective flow paths substantially tangent to the inner surface of said bladder where the same contacts the region of confluence of the lower bead and sidewall of the tire being cured, the discharge ends of said



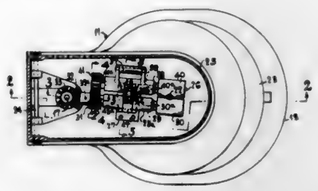
nozzles being sufficiently close to said region to cause the steam to enter into the lower portion of said bladder and come into contact with condensate while still at substantially maximum flow velocity and kinetic energy so as to disperse such condensate into small and discrete moving droplets incapable of interfering with the transfer of heat from the steam to the bladder.

3,443,281
MOLDING PIN, MATRIX, AND MOLDING ASSEMBLY FOR MANUFACTURE OF REFLECTIVE DEVICES
John W. Walby, Blue Springs, Mo., assignor to Rupert Manufacturing Company, Blue Springs, Mo., a corporation of Missouri
Filed July 24, 1967, Ser. No. 655,619
Int. Cl. B29c *1/00*
U.S. Cl. 18—44 **3 Claims**



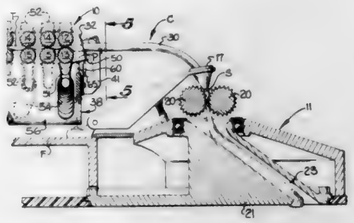
A molding pin adapted to be grouped with similar molding pins to form a reflective mold matrix suitable for receiving thermoplastic mold material therein under high speed operations for making reflective devices. Each pin has an elongate body with a plurality of planar sides with slightly rounded edges and a longitudinal groove in each side intermediate the edges. The longitudinal groove extends from operating faces on one end of the body to a transverse groove around the body. The operating faces are machined and form cavities in the matrix which produce highly reflective surfaces in the reflective devices. The grouped pins form a plurality of longitudinal vent passageways extending from the operating faces to the transverse grooves and a plurality of transverse vent passageways communicating with a carrier and through the carrier to the atmosphere. The pins are secured together at an end opposite the operating faces to form a matrix unit of any desired shape.

3,443,282
CALENDER ROLLER STOP MECHANISM
James A. Dixon, Jr., Gastonia, N.C., assignor to Gossett Machine Works, Inc., Gastonia, N.C., a corporation of North Carolina
Continuation-in-part of application Ser. No. 616,666, Feb. 16, 1967. This application Sept. 19, 1967, Ser. No. 668,887
Int. Cl. D01g *31/00*
U.S. Cl. 19—.23 **6 Claims**



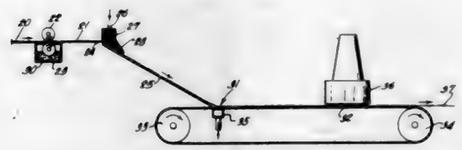
A calender roller stop mechanism in which a pair of driven rollers are yieldingly biased for movement toward one another and between which a strand of textile sliver is fed. Specifically, the mechanism is characterized by an arrangement responsive to a predetermined excess sliver thickness for disconnecting the rollers from the driving source, in combination with a pivoted bar concurrently operable to latch the rollers in the disconnected position.

3,443,283
FIBER CONDENSER WITH COMBINED STOP MOTION AND WASTE DISPOSAL FOR TEXTILE DRAFTING UNITS
Joe R. Whitehurst, Bessemer City, N.C., assignor to Ideal Industries Inc., Bessemer City, N.C., a corporation of North Carolina
Continuation-in-part of application Ser. No. 548,691, May 9, 1966. This application Dec. 27, 1966, Ser. No. 604,786
Int. Cl. D01g *31/00*; **D01h** *5/60*
U.S. Cl. 19—.25 **13 Claims**



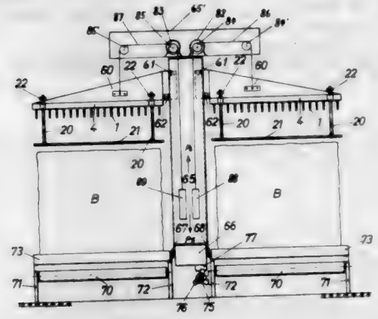
A collecting plate is located beneath and receives waste particles, commonly known as "pepper trash," from a traveling web in its course from delivery rolls of a drafting unit to a condensing plate. The web passes through and is condensed into a sliver by the condensing plate, while pepper trash is drawn from the collecting plate into a suction nozzle adjacent the collecting plate and the bottom delivery roll. The collecting plate is arranged to move downwardly and cause the drafting unit to stop upon interruption of the web and a resultant accumulation of the web on the collecting plate.

3,443,284
METHOD OF MANUFACTURING A WEB OF CONTINUOUS FILAMENTS
Frank Kalwaites, Somerville, and Ernest L. Poitras, Cranbury, N.J., assignors to Johnson & Johnson, a corporation of New Jersey
Filed May 21, 1965, Ser. No. 457,643
Int. Cl. D01b *3/04*
U.S. Cl. 19—66 **5 Claims**



A method of manufacturing a web of continuous filaments by passing a tow of filaments down an open inclined plane and flowing a liquid down the plane in a fan shaped pattern. The tow moves at a velocity slower than that of the liquid so that the diverging hydraulic forces of the liquid spread the tow into a web of filaments.

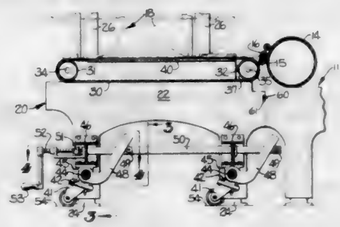
3,443,285
APPARATUS FOR OPENING BALES OF FIBRES
Georg Goldammer and Günter Mahrt, Ingolstadt, Germany, assignors to Deutscher Spinnereimaschinenbau Ingolstadt Niederlassung der Schubert & Salzer Maschinenfabrik Aktiengesellschaft, Ingolstadt, Donau, Germany, a corporation of Germany
Filed Nov. 15, 1966, Ser. No. 594,501
Int. Cl. D01b *1/00*
U.S. Cl. 19—81 **11 Claims**



Apparatus for removing fibres from a bale, including grasping means adapted to grasp and remove a predetermined quantity of fibres from the bale in a layer of predetermined thickness in such manner that the character of the fibre layer is not destroyed or seriously changed.

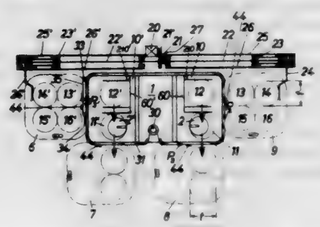
3,443,286
TEXTILE CARD AND LAP FEEDING MEANS
Homer W. Groce, Lyman, S.C., assignor to Wellman Industries, Inc., Johnsonville, S.C., a corporation of Delaware
Filed Sept. 7, 1966, Ser. No. 577,648
Int. Cl. D01g *15/40*
U.S. Cl. 19—105 **4 Claims**

A subframe adapted to be matingly aligned with the frame of a card for supporting a plurality of laps and for advancing the laps to the feed rolls of the card in timed relation thereto and wherein the subframe has retractable wheels for facilitating movement of the subframe into aligned position with the card frame and for rolling the subframe away from the card frame for obtaining free



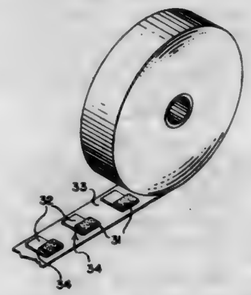
access to the card feed rolls for facilitating adjustment thereof.

3,443,287
CAN CHANGING IN STRAND MATERIAL HANDLING
Hans B. Hertzsch, Enschede, Netherlands, assignor to Deutscher Spinnereimaschinenbau Ingolstadt Niederlassung der Schubert & Salzer Maschinenfabrik Aktiengesellschaft, Ingolstadt, Donau, Germany, a corporation of Germany
Continuation-in-part of application Ser. No. 256,220, Feb. 1, 1963. This application July 26, 1966, Ser. No. 569,556
Claims priority, application Germany, Feb. 9, 1962, D 38,105; Jan. 12, 1963, D 40,673
Int. Cl. D04h *11/00, 11/04*
U.S. Cl. 19—159 **24 Claims**



The automating of can changing in the production of roving. Provision is made for automatically supplying sliver cans to a filling station and for removing filled cans from the filling station.

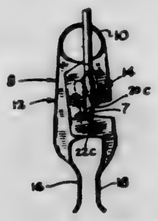
3,443,288
FLANGED ADHESIVE ROLLER WAFER
Charles F. Batchelder, Milton, and Jerome A. Rubico, Boston, Mass., assignors to Batchelder-Rubico, Inc., Boston, Mass., a corporation of Massachusetts
Filed Jan. 3, 1967, Ser. No. 607,053
Int. Cl. B42f *1/00, 5/00*
U.S. Cl. 24—67 **4 Claims**



Pressure sensitive tape having adhesive on only one side is rolled into a tube and flattened with a flange of

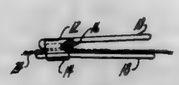
the tape extending beyond one edge of the flattened tube. When two articles adhesively held together by the tube are separated, the flange assures that the tape remains with the article to which it originally adhered.

3,443,289
GARMENT HANGER
William P. Crockett, Jr., 1301 N. Larrabee, Chicago, Ill. 60610
Filed Oct. 13, 1967, Ser. No. 675,195
Int. Cl. A47g *25/04;* A47j *51/08*
U.S. Cl. 24—137 7 Claims



This application discloses a clip which is mountable on an elongated member, such as a clothes hanger crossbar. The clip includes a resilient body section which has a pair of depending arms which are urged apart by the resiliency of the body section. One arm of the clip has an entry for the elongated member which leads to an upwardly terminating slot and the other arm has an upwardly terminating slot which cooperates with the first slot to force the arms together in response to a movement of the elongated member in the slots toward the terminating ends of the slots. The arms are provided with clamping portions remote from the resilient body section which are moved together to clamp an item therebetween in response to movement of the elongated member inwardly of the slots. One or more of such clips on a hanger may be used to hold various garments, such as trousers, skirts, ties and the like.

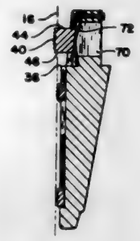
3,443,290
HOOK FASTENER ELEMENT
Maurice Cohn, South St., South Coventry, Conn. 06238
Filed Jan. 12, 1967, Ser. No. 608,769
Int. Cl. A44b *11/25*
U.S. Cl. 24—227 3 Claims



A hook fastener element having a tongue for insertion through an eye, or staple-like element, to releasably secure opposite end portions of a garment waistband. The hook element has transversely spaced prongs for piercing the fabric, which prongs are clinched to an associated backing plate. An integral spacer flange is provided between the prongs to prevent crushing of the element during pressing of the garment.

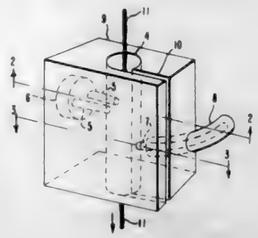
3,443,291
DRILL COLLAR SAFETY SLIP
Jack R. Doherty, P.O. Box 1871, Odessa, Tex. 79760
Continuation-in-part of application Ser. No. 524,114, Feb. 1, 1966. This application Sept. 25, 1967, Ser. No. 670,065
Int. Cl. E21b *7/00*
U.S. Cl. 24—263 7 Claims

A set of slips made up of a series of segments, each being hinged together so as to enable the segments to operate together in a manner where they may be opened sufficiently to be placed between a pipe and a bowl at the top of a well casing or the like. Each segment consists of a main body having a liner fastened to the pipe engaging side thereof, with the liner having a friction face located thereon which engages the pipe when placed in operative relationship therewith. A slidable wedge is received within a channel at the top of each segment which



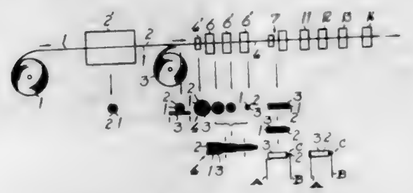
permits limited vertical movement of the wedge. A friction face on the wedge is adapted to move into a pipe engaging position as the pipe contacts the liner. The liner and wedges of the slips operatively engage the pipe in a manner whereby slippage of the pipe relative to the liner will cause the wedge to move downwardly thereby further increasing the friction exerted between the liner and the pipe as the wedge digs into the pipe surface.

3,443,292
APPARATUS FOR INTERLACING MULTI-FILAMENT YARN
Eugene L. Davis, Jr., Mechanicsville, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed May 31, 1968, Ser. No. 733,476
Int. Cl. D02g *3/00;* D04h *17/00;* D01h *13/26*
U.S. Cl. 28—1 6 Claims



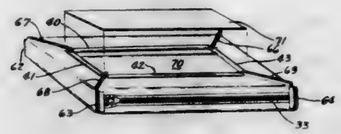
A fluid interlacer device is disclosed as particularly useful for providing coherency in yarn which, as fed to the device, contains both slack filaments and taut, load-bearing filaments. A pair of fluid passages direct streams into a yarn passageway so that the streams intersect at the opposite wall of the yarn passageway. Another fluid passage directs a stream tangentially into the yarn passageway. The pair of intersecting streams opens the filament bundle and starts to interlace the filaments. The tangential stream rotates the yarn bundle, presenting different portions to the interlacing streams, and the excess length of slack filaments is taken up in loops or coils. Protruding portions of broken filaments are also interlaced into the bundle. The product maintains its unity without twist, has a uniform appearance, and may have a desirable bulkiness.

3,443,293
METHOD OF MANUFACTURING CAPACITORS
Sho Masujima, 3366-9 Oaza Ueda, Ueda-shi, Nagano-ken, Japan
Filed June 2, 1966, Ser. No. 554,787
Claims priority, application Japan, Sept. 3, 1965, 40/53,961; Dec. 28, 1965, 40/81,076; Dec. 29, 1965, 40/81,559
Int. Cl. H01g *13/00*
U.S. Cl. 29—25.42 5 Claims



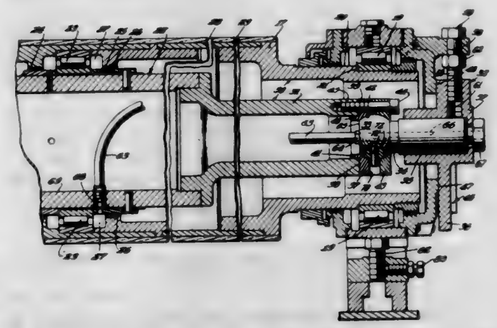
A method for manufacturing capacitors wherein a synthetic resin or dielectric material containing a synthetic resin is continuously applied to a conductive internal electrode in rod or tube form, as by injection molding or by winding lengths of threads, fibers or tapes formed from the material; a pipe-like or tape-shaped conductive external electrode is disposed about said covered length of conductive internal electrode to form a capacitor assembly; said capacitor assembly is struck and elongated to thin and press together the layered components thereof; and subsequently cut into individual capacitors of a length determined by the desired capacity thereof. Where the intermediate layer is formed from a fiber, thread or tape, the capacitor assembly is preferably heated to a temperature above the melting temperature of said intermediate layer.

3,443,294
METHOD OF MAKING A CUSHION COVERING MEANS
Gary L. George, 208 10th St. N., Northwood, Iowa 50459
Continuation of application Ser. No. 570,587, Aug. 5, 1966. This application Aug. 1, 1968, Ser. No. 751,689
Int. Cl. B68g *7/00;* A47c *31/10*
U.S. Cl. 29—91.1 4 Claims



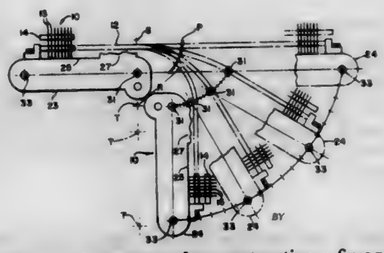
A method of making a cushion covering means comprising folding wall portions downwardly from top portions so that they form side walls, joining the adjacent ends of said wall portions by a securing means, thereby forming vertical corner seams and forming tab portions which extend outwardly from each of the corner seams, folding said bottom portions inwardly from said wall portions so that all of said bottom portions lie in the same horizontal plane with some of their edges adjacent each other, joining said adjacent edges of said bottom portions together by a securing means thereby forming a bottom wall for said covering means, inserting a closable opening extending along the length of one of said side walls, reversing the assembled cushion covering means about said closable opening so that said tab portions are extending inwardly from said seams, and fitting a cushion device through said closable opening and into said cushion covering means.

3,443,295
TABLE ROLL
Donald B. Denoyer and Edward D. Beachler, Beloit, Wis., assignors to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed Feb. 4, 1966, Ser. No. 525,184
Int. Cl. B21b *13/02, 27/00*
U.S. Cl. 29—116 7 Claims



A table roll for providing a dewatering support for a Fourdrinier wire having a roll shell disposed at the outside thereof and an internal supporting shaft having bearing supports at both ends and at the longitudinal center and having a bracket means fitted about the ends of the roll sleeve with bearing means operably disposed between the shaft and the bracket means and having means for adjusting the ends of the shaft relative to the ends of the roll shell in a radial direction wherein the adjustment means includes said bracket means and means for pivotally coupling the bracket means to the end of the internal shaft.

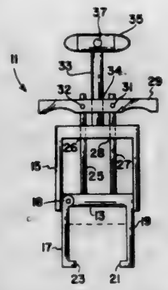
3,443,296
METHOD FOR CONSTRUCTING A FIN-AND-TUBE HEAT EXCHANGER HAVING A BEND FORMED THEREIN
Dale R. Clausing, La Crescent, Minn., assignor to The Trane Company, La Crosse, Wis., a corporation of Wisconsin
Filed May 29, 1967, Ser. No. 641,941
Int. Cl. B21d *53/08;* B23p *15/26*
U.S. Cl. 29—157.3 10 Claims



A method and apparatus for constructing a fin-and-tube heat exchanger having a bend formed therein by bending the heat exchanger with apparatus which does not support or contact the heat exchanger fins at the situs of the bend, and a method for constructing a multirow fin-and-tube heat exchanger having a bend formed therein to facilitate the bending operation by initially expanding the tubes of only one row to fix the spacial relation of the fins during the bending step and allowing the tubes of the other rows

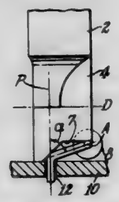
to move freely relative to the fins during the bending operation, to thereby eliminate adverse distortion of the fins especially in the bend area.

3,443,297
CIRCUIT MODULE EXTRACTOR
Thomas K. Lusby, Jr., 1120 Country Club Road, Newport News, Va. 23606
Filed July 29, 1966, Ser. No. 568,982
Int. Cl. B25b *27/02*
U.S. Cl. 29—203 **6 Claims**



A hand tool for positively and releasably engaging an electronic module to facilitate the engagement of modules with a circuit board and for disengaging modules from a circuit board wherein the modules are normally held in operative position in the circuit board by a plurality of frictional contact pins and receptacles.

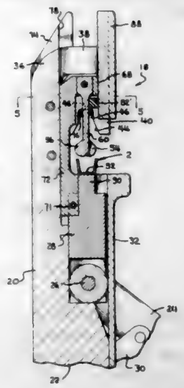
3,443,298
MEANS FOR INSERTING AND DEFLECTING COMPONENTS
Vincent P. Romeo, Danvers, Mass., assignor to USM Corporation, Flemington, N.J., a corporation of New Jersey
Filed Sept. 12, 1966, Ser. No. 578,839
Int. Cl. H05k *3/30;* **B27f** *7/00*
U.S. Cl. 29—203 **3 Claims**



A component inserting machine having an inserting head for assembling components on a prepunched board and an elongated driver bar having means upon its lower or driving end for laterally displacing the component body out of the plane defined by the line of centers of the holes in the board and the axis of the component body after insertion of the leads but before displacement of the body.

3,443,299
APPARATUS FOR TRIMMING AND CONNECTING WIRES
Christopher Kingsley Brown, Camp Hill, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Jan. 20, 1967, Ser. No. 610,692
Int. Cl. B21b *41/00;* **B21d** *9/08, 37/12*
U.S. Cl. 29—203 **6 Claims**

Tool for trimming and connecting overlapping wires extending axially towards each other has crimping dies and shearing members on each side of the crimping dies. Shearing members extend parallel to path of movement of the dies and have oppositely directed lateral extensions on their ends, the extension on one member extending in the opposite direction from the extension on the other member. Wires are overlapping between crimping dies



with the end portions of the wires extending between one of the extensions of the shearing member and one of the dies. Shearing members are moved toward the one die to trim the wires in the planes of the sides of the dies so that upon subsequent movement of dies towards each other, a connector is crimped onto the overlapping wires.

3,443,300
ROLL CONSTRUCTION
Lewis G. Lakin, Chicago, Ill., assignor to A. Lakin & Sons, Inc., Chicago, Ill., a corporation of Illinois
Filed Jan. 4, 1967, Ser. No. 607,273
Int. Cl. B21b *27/00*
U.S. Cl. 29—125 **1 Claim**

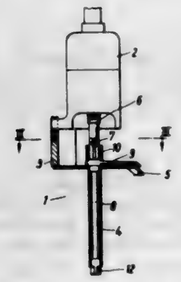


A roll comprising a rigid elongated cylindrical core and a plurality of relatively flexible resilient annular discs carried by said core under axial compression, said discs being composed of a plurality of plies of rubber impregnated cord fabric, the fabric plies being disposed in face-to-face relationship with the cords of adjacent plies being disposed on a bias to each other, cord ends projecting from the inner periphery of said discs, and adhesive interposed between said core and said discs anchoring the latter against rotational displacement. As an aid to such anchoring, the inner periphery of the discs can be formed with a plurality of shallow arcuate notches.

3,443,301
METHOD OF FABRICATING FIBER-REINFORCED ARTICLES
Malcolm Basche, West Hartford, Conn., Roy Fanti, Springfield, Mass., and Salvatore F. Galasso, Manchester, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
No Drawing. Filed Feb. 24, 1967, Ser. No. 618,328
Int. Cl. B23k *31/00;* **B21c** *1/00*
U.S. Cl. 29—419 **5 Claims**

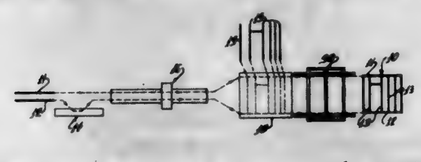
Filaments formed of silicon carbide-coated boron with an overcoat of a matrix material including such metals as aluminum, magnesium or titanium are formed into an article of appropriate shape and hot pressed to thereby provide a fiber-reinforced article having a high volume percentage of reinforcing fiber, the process being characterized by a high degree of reproducibility.

3,443,302
PROCESS FOR TIGHTENING SCREWS
Gerhard A. Junker, Neuss (Rhine), Germany, assignor to Bauer & Schaurte, Neuss (Rhine), Germany, a firm of Germany
Filed Sept. 20, 1966, Ser. No. 580,836
Claims priority, application Germany, Feb. 17, 1966, B 85,842
Int. Cl. B23p *19/04*
U.S. Cl. 29—428 **5 Claims**



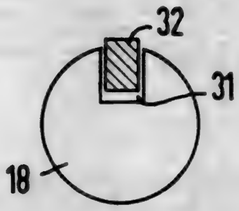
A process of tightening screws is shown which involves the application of oscillation energy to the screw while it is being tightened to overcome frictional lock so that the screw can be tightened with a substantially lower tightening, turning movement.

3,443,303
PROCESS AND APPARATUS FOR FORMING A BUILDING STRUCTURE
Marshall O. Groat, Fort Payne, Ala., assignor to Kingsberry Homes Corporation, a corporation of Delaware
Filed Dec. 23, 1966, Ser. No. 604,465
Int. Cl. B23q *3/00;* **B23p** *19/00*
U.S. Cl. 29—430 **10 Claims**



This invention relates to a process and apparatus for forming a building structure having elongated, spaced apart plate members secured to opposite ends of elongated, spaced apart transverse members positioned therebetween. Nail-like members are secured to the plate members at predetermined, longitudinally spaced locations with the ends of the nail-like members of one plate member projecting outwardly thereof and extending inwardly toward the other plate member. The plate members are positioned at opposite ends of the transverse members with the inwardly extending ends of the nail-like members extending alongside the transverse members in position to engage the transverse members. Means is provided to impart longitudinal movement to the plate members whereby the nail-like members carried thereby engage and move the transverse members into generally perpendicular alignment with the plate members. The transverse members are then retained in alignment with the plate members while the plate members are moved outwardly away from each other a distance at least as great as the distance the nail-like members project outwardly of the plate members. Longitudinal movement is then imparted again to the plate members a distance less than the thickness of the transverse members to thus place the inner ends of the nail-like members in position to enter the ends of the transverse members. Means is provided to then move the plate members inwardly toward each other to force the inwardly extending ends of the nail-like members into the ends of the transverse members and thus secure the plate members to the transverse members.

3,443,304
METHOD OF PRODUCING SUPERCONDUCTIVE TAPES OR BANDS
Richard Maier, Erlangen, Germany, assignor to Siemens Aktiengesellschaft, a corporation of Germany
Filed Dec. 9, 1966, Ser. No. 600,584
Claims priority, application Germany, Dec. 11, 1965, S 100,910
Int. Cl. B23k *1/20, 31/02*
U.S. Cl. 29—472.1 **15 Claims**



A substance consisting of the component of a superconductive two-component intermetallic compound which melts at a lower temperature than the other component thereof is interposed between respective pairs of an odd number of component bands consisting of that component of the compound which melts at a higher temperature, one of the component bands respectively being smooth and the band adjacent thereto being provided on both sides thereof with depressions. The composite band or tape thus formed is subjected to a heat treatment whereby the lower melting component is indiffused into the higher melting component and reacts therewith to form layers of the superconductive intermetallic compound. The depressions are of such depth and the lower melting component is of such amount that, during the heat treatment, the lower melting component is retained between the bands of the higher melting component by capillary action.

3,443,305
METHOD OF MANUFACTURING A COMPOSITE METALLIC WIRE
Yoshio Matsuda and Shigenobu Ozaki, Itami-shi, Japan, assignors to Sumitomo Electric Industries, Ltd., Higashi-ku, Osaka, Japan, a company of Japan
Filed Apr. 15, 1965, Ser. No. 448,411
Claims priority, application Japan, Apr. 25, 1964, 39/23,483
Int. Cl. B23k *31/06, 31/02, 1/20*
U.S. Cl. 29—474.1 **10 Claims**

Manufacturing a metallic composite wire wherein a core wire is covered with an outer cladding material in

the original form of a continuous tape having a resistance to deformation less than that of the core wire, continuously formed circumferentially around the core wire to produce a composite wire. The composite wire thereafter is heated with a temperature difference established within a requisite range being maintained between the outer

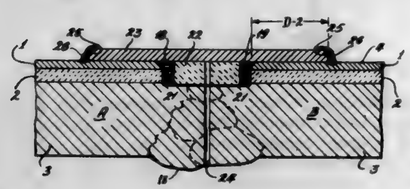


cladding tape and the inner core wire. The heated composite wire is then subjected to pressure bonding to uniformly bond the heated cladding material to the entire core wire surface with excess cladding material produced during the pressure bonding process being severed and shaved off of the composite wire to produce a concentric circular composite wire.

ERRATUM

For Class 84—1.01 see:
Patent No. 3,443,463

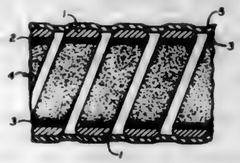
3,443,306
METHOD OF JOINING CLAD MATERIAL
John J. Meyer, Rock Hill, Mo., assignor to Nooter Corporation, St. Louis, Mo., a corporation of Missouri
Filed Aug. 3, 1966, Ser. No. 574,880
Int. Cl. B23k *31/02, 35/00*
U.S. Cl. 29—471.1 **7 Claims**



A process for joining clad material in edgewise abutting relation, said clad material having a top layer of super corrosion resistant material at least about .030 inch thick and an intermediate layer of copper material between .050 and .070 inch thick positioned above the base metal.

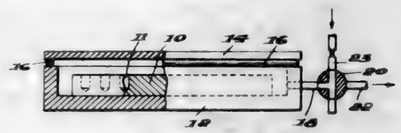
3,443,307
METHOD OF PRODUCING A FLEXIBLE PROTECTION TUBE FOR A FLEXIBLE SHAFT GUIDED IN THE TUBE WITH RADIAL PLAY
Johannes Werner, Offenbach, and Hans Golde and Horst Schlick, Frankfurt am Main, Germany, assignors to VDO Tachometer Werke Adolf Schindling GmbH, Frankfurt am Main, Germany, a corporation of Germany
Filed Feb. 2, 1968, Ser. No. 702,720
Claims priority, application Germany, Feb. 2, 1967, V 32,896
Int. Cl. B23p *17/00;* **F16c** *1/26, 1/06*
U.S. Cl. 29—527.2 **2 Claims**

A method of producing a flexible protection tube for a flexible shaft guided in the tube with radial play, the protection tube comprising a helix of profile wire and having inside a soft-elastic resilient, brush-like layer, which comprises the steps of applying a glue layer to the profile wire, subjecting the profile wire to electrostatic flocking to obtain a brush-like layer, which comprises a plurality



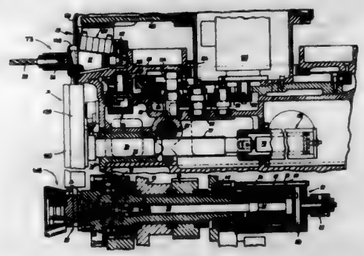
of short fibers or lamellae, and forming the flocked profile wire, after hardening of the glue layer to the wire helix of the protective tube.

3,443,308
METHOD OF LUBRICATING BLIND HOLES
Karl Guymon Tippets, Martinsville, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Mar. 30, 1967, Ser. No. 627,187
Int. Cl. B23p *25/00;* **C23c** *13/00*
U.S. Cl. 29—558 **2 Claims**



In preparation for a punching step, the interiors of blind holes are lubricated from a layer of lubricant on the apertured surface of a plate by reducing ambient air pressure and then re-exposing the plate to normal ambient air pressure.

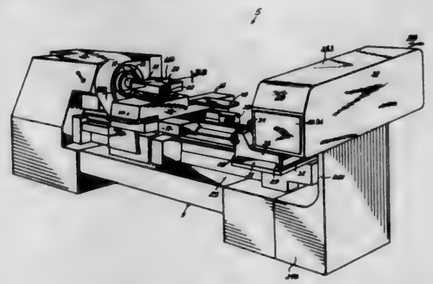
3,443,309
TOOL HOLDER CHANGER
Adolf Huller, Heinz Gundlich, and Joachim Merker, Rottenburg (Neckar), Germany, assignors to Karl Huller GmbH, Ludwigsburg, Wurttemberg, Germany
Filed Dec. 8, 1966, Ser. No. 600,139
Claims priority, application Germany, Dec. 10, 1965, 57,926
Int. Cl. B23q *3/00*
U.S. Cl. 29—568 **12 Claims**



A tool holder changer for use in milling machines wherein an indexible carrousel type magazine accommodates a supply of spare tool holders and wherein such tool holders are insertable into the socket of a tool spindle. The changer is rotatable intermediate the magazine and tool spindle and is provided with two pairs of mutually inclined grippers movable substantially radially of the tool holder changer axis to respectively engage or release

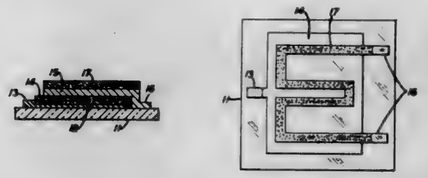
a tool holder in the magazine and a tool holder in the socket of the spindle. The changer is movable axially to respectively insert or withdraw the tool holders which are engaged by the grippers and is rotatable back and forth through 180 degrees whereby the tool holders which are held by the grippers switch positions.

3,443,310
TOOL CHANGING APPARATUS
Robert K. Burroughs, Batavia, and Timothy A. Wakefield, Cincinnati, Ohio, assignors to The R. K. Le Blond Machine Tool Co., Cincinnati, Ohio, a corporation of Delaware
Filed Apr. 19, 1967, Ser. No. 632,055
Int. Cl. B23c *3/00*
U.S. Cl. 29—568 **21 Claims**



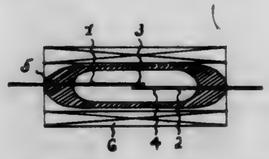
An automatic tool changer for a lathe or similar machine tool having multiple cutting tools mounted in a tool turret. The tool changer is operative to remove and replace a tool in the turret while simultaneously another tool in the turret continues the machining cycle so that the cutting operation is not interrupted for a tool change. To this end, a tool transfer slide for transporting tools between the tool turret and a storage matrix is operative to seek, track, "lock onto" and move in synchronization with the tool turret during removal of a tool from the turret and replacement of a new tool.

3,443,311
THIN FILM DISTRIBUTED RC NETWORK
Walter Worobey, Green Brook, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Oct. 31, 1966, Ser. No. 590,805
Int. Cl. H01s *4/00;* **H01c** *7/00, 17/00*
U.S. Cl. 29—592 **4 Claims**



1. A method for the fabrication of a thin film distributed RC network which comprises the steps of (a) depositing a layer of a film-forming metal upon a substrate by condensation techniques, (b) anodizing said film-forming metal whereby there is formed an anodic oxide layer, (c) depositing a layer of low density tantalum evidencing a density less than 14 grams cm.$^{-3}$ upon said anodic oxide layer by cathodic sputtering techniques, the voltages ranging from 800–2500 volts and partial pressures of sputtering gas ranging from 10–100 millitorr, and (d) generating a desired resistor pattern in said low density tantalum layer.

3,443,312
METHOD OF MAKING GAS-FILLED ENCLOSED SWITCHGEAR WITH COPPER CONTACTS
Hiromi Moriyama, Hiroshi Yamada, Tsunemoto Nakanishi, and Toshikatsu Kiriyama, Yokohama-shi, Japan, assignors to Kabushi Kaisha Hitachi Seisakusho, Tokyo-to, Japan, and Keihin Hitachi Engineering Kabushiki Kaisha, Tokyo-to, Japan, both joint-stock companies of Japan
Original application Mar. 29, 1963, Ser. No. 284,053, now Patent No. 3,222,486, dated Dec. 7, 1965. Divided and this application Oct. 6, 1965, Ser. No. 493,527
Claims priority, application Japan, June 4, 1962, 37/22,323; June 5, 1962, 37/22,484, 37/22,485
Int. Cl. H01h *11/00, 65/00*
U.S. Cl. 29—622 **2 Claims**



An enclosed type switchgear having magnetic members sealed in a vessel with their ends disposed in mutually opposed positions so as to function as electrical contacts is manufactured by the process steps of plating the contact parts with copper or copper plus gold, then heating the plated contact parts for the purpose of diffusion, installing the magnetic members in the vessel so as to juxtapose their contact parts, and sealing the vessel.

3,443,313
HEMOSTAT FOR CUTTING AND REMOVING SUTURES
Albert Thomas Profy, 147—15 46th Ave., Flushing, N.Y. 11355
Substituted for abandoned application Ser. No. 448,951, Apr. 19, 1965. This application July 3, 1967, Ser. No. 652,399
Int. Cl. A61f *15/02;* **B26b** *13/22*
U.S. Cl. 30—134 **5 Claims**

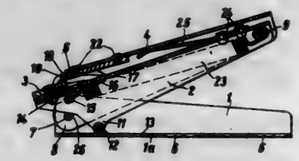


A hemostat for removing sutures having clamping and cutting tips, and a clamping member being in spring-urged engagement with the cutting tip, the suture first being clamped between the clamping tip and clamping member before being severed.

3,443,314
MANUALLY OPERABLE CUTTING DEVICE PARTICULARLY FOR FILMS
Leopold Karl, Unterdurrbach, near Wurzburg, and Hubert Engert, Grossmannsdorf am Main, Germany, assignors to Kindermann & Co., G.m.b.H., Ochsenfurt am Main, Germany, a corporation of Germany
Filed Apr. 12, 1967, Ser. No. 630,418
Claims priority, application Germany, Apr. 12, 1966, K 54,168/69
Int. Cl. B26b *3/00*
U.S. Cl. 30—237 **8 Claims**

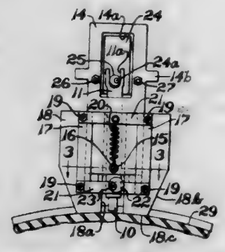
A manual cutting device particularly for thin and tenacious film comprising two pivotally and slidably at-

tached knife levers each carrying a cutting face at their adjacent free end, a spring urging the cutting faces to-



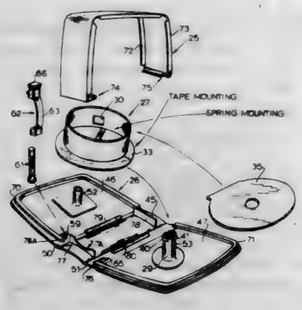
wards each other, one of the knife levers is pivotally attached to a support lever at a point remote from the joint between the two knife levers.

3,443,315
TIRE TEST SLITTING DEVICE
Frank Herzegh, Shaker Heights, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Feb. 17, 1967, Ser. No. 616,980
Int. Cl. B26b 29/02; B26d 1/00, 3/06
U.S. Cl. 30—273 5 Claims



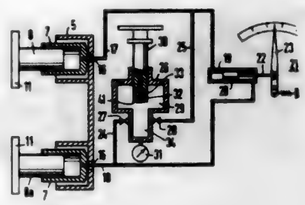
A portable apparatus having a rapidly oscillating cutting blade driven by an electric motor for making precision test cuts in a tire tread. An adjustable stop is provided to pre-determine and fix the depth of penetration of the knife blade.

3,443,316
TAPE RULE LOCK
James E. Edgell, Wexford, Pa., assignor to H. K. Porter Company, Inc. (Delaware), Pittsburgh, Pa., a corporation of Delaware
Filed Dec. 19, 1966, Ser. No. 602,790
Int. Cl. G01b 3/10
U.S. Cl. 33—138 6 Claims



A push button operated tape lock is embodied in a resilient wall housing of a coiled spring actuated type tape rule. The push button member deforms internally of the tape housing when pushed inwardly so as to engage and positively lock the tape in its then position. Squeezing of the housing walls or manipulation of the push button member causes the member to be released and the inherent resiliency of the member restores it to a non-locking position.

3,443,317
METHOD AND DEVICE FOR DETERMINING AND MEASURING CHANGES IN THE SHAPE OF NUCLEAR REACTOR FUEL ELEMENTS
Bernd Grahmann, Erlangen-Buchenbach, Germany, assignor to Siemens Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany
Filed Aug. 2, 1966, Ser. No. 569,693
Claims priority, application Germany, Aug. 4, 1965, S 98,635
Int. Cl. G01b 13/00
U.S. Cl. 33—174 3 Claims



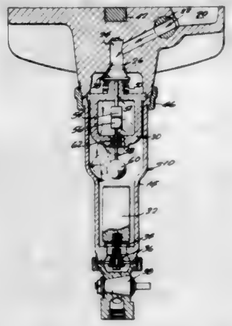
A device for determining and measuring changes in the shape of nuclear fuel elements of the type having a guide tube of rectangular cross section wherein bodies bearing fissionable material are received which includes a holder having a support for a fuel element and two sensing cylinders with respective pistons guidable therein and exposed to a hydraulic medium contained therein, the fuel element support and the piston being movable relative to one another so that the pistons and at least one outer surface of the fuel element are passed relatively along one another in the longitudinal direction of the fuel element.

3,443,318
AUTOMOTIVE WHEEL ALINING APPARATUS
Charles W. MacMillan, Rock Island, Ill., assignor to Bear Manufacturing Company, Rock Island, Ill., a corporation of Delaware
Filed Jan. 4, 1967, Ser. No. 607,274
Int. Cl. G01b 5/24, 7/30
U.S. Cl. 33—203.18 7 Claims



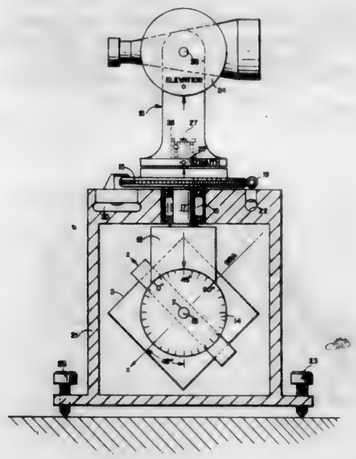
Apparatus for electrically measuring the toe of vehicle wheels including a pair of toe arms each suspended from a respective front wheel of a vehicle and each arm carrying a pendulum which is movable about a vertical axis, a tension member stretched between the free ends of the two pendulums, and electromagnetic means associated respectively with each of the pendulums for producing a current the magnitude of which is a measure of the angular position of the corresponding pendulum and thus is a measure of the toe of the corresponding vehicle wheel.

3,443,319
LEVEL DETERMINING DEVICE AND APPARATUS
Lovelace Charles Dooley, P.O. Box 3, Jeanerette, La. 70544
Filed Sept. 1, 1966, Ser. No. 576,595
Int. Cl. G01c 9/22
U.S. Cl. 33—209 3 Claims



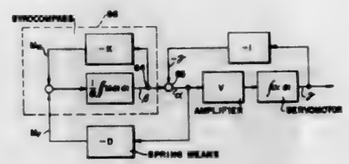
Level determining device having flexibility including magnetic securing elements for affixing the level determining device on steel members, and being provided with a pendulum actuable magnetically responsive valve, so that upon displacement of the pendulum, the valve is closed so that air or water is not allowed to traverse the valve and valve seat of the pendulum actuable valve.

3,443,320
ELECTROSTATIC GYROCOMPASS
Joseph C. Boltinghouse, Whittier, and John M. Slater, Fullerton, Calif., assignors to North American Rockwell Corporation
Filed Sept. 21, 1964, Ser. No. 398,000
Int. Cl. G01c 19/38, 19/40
U.S. Cl. 33—226 6 Claims



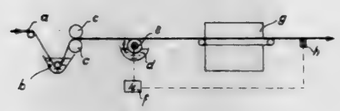
An electrostatic gyro having its spin reference axis meriodionally aligned by manually or automatically orienting it to minimize the indicated or signaled rotor torquing current necessary to align the spin with the spin reference axis. Alternatively, the gyro may be started up with the spin axis displaced from the polar axis, with the spin reference axis servoed to follow it in describing a cone about the polar axis as the earth rotates. A pick-off and indicator of its departure in tilt from a preset elevation reads zero at two azimuths along the cone, and their mean establishes the meridian.

3,443,321
GYROCOMPASS FOLLOW-UP SYSTEM
Werner Auer, Heidelberg-Wieblingen, Germany, assignor to Teldix Luftfahrt-Ausrustungs G.m.b.H., Heidelberg-Wieblingen, Germany
Original application Mar. 11, 1965, Ser. No. 438,977, now Patent No. 3,386,179, dated June 4, 1968. Divided and this application Apr. 13, 1967, Ser. No. 630,585
Claims priority, application Germany, Apr. 24, 1964, T 26,070
Int. Cl. G01c 19/38
U.S. Cl. 33—226 5 Claims



A gyrocompass rotor frame is mounted on a stable vertical-axis low-friction air bearing. It is torqued azimuthally by springs which also serve as electrical connections between the rotor frame and an enclosing casing rotatable in azimuth by a follow-up motor controlled by a pick-off between the casing and the rotor frame. The pick-off signal amplification is, for the first part of the meridian seeking swing, made such as to damp the oscillatory transients most rapidly; and when the pick-off signal, or alternatively the amplifier output, has fallen below a predetermined value, a program of increased amplification is automatically initiated.

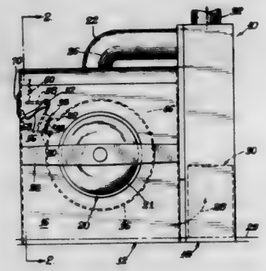
3,443,322
METHOD FOR CONTROLLING THE DRYING STEPS ON CONTINUOUS SHEET OF MATERIAL
Martin Schwemmer, Urdorf, Zurich, Werner Kunz, Uerikon, Zurich, and Hans Bors, Fallanden, Zurich, Switzerland, assignors, by mesne assignments, to Zellweger AG Apparate- und Maschinenfabriken Uster, Uster, Switzerland, a Swiss aktiengesellschaft
Filed Aug. 22, 1967, Ser. No. 662,456
Claims priority, application Switzerland, Aug. 23, 1966, 12,158/66
Int. Cl. F26b 21/08, 13/06
U.S. Cl. 34—9 5 Claims



A method is provided for controlling and maintaining a predetermined residual moisture content and sheets dried in a drying machine. This is accomplished by measuring the value of the residual moisture in the sheet at the discharge end of the drying machine and using this value to control the application of water to the sheet upstream from the drying machine. The water may be provided in two stages, the first of which is constant and which

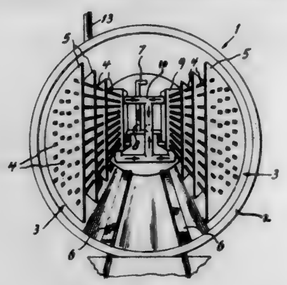
contains additive chemicals, and the second of which is variable and responsive to the measuring device at the discharge end of the drying machine. Furthermore, the device preferably used to apply water involves a rotating roller which is controlled independently of the speed of the sheet moving thereover.

3,443,323
LAUNDRY DRYER DRUM WITH EXTERNAL SURFACE CLEANING MEANS
Frederick W. Grantham, Los Angeles, Calif., assignor of one-third each to Paulette Grantham, Menlo Park, Calif., Frederick Grantham III, Honolulu, Hawaii, and Charles R. Grantham, Los Angeles, Calif.
Filed Jan. 13, 1967, Ser. No. 609,064
Int. Cl. F26b *25/04, 11/04*
U.S. Cl. 34—19 5 Claims



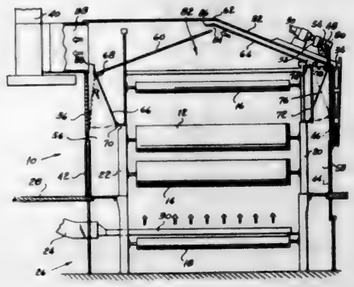
Laundry dryer having an enclosed rotating basket with means manipulable from the exterior for removing accumulated material from the surface of the basket.

3,443,324
TUBULAR FREEZE-DRYING CONDENSER
Warren B. Ludwig, Edmonds, Wash., and Byron E. Elerath, Mountain Lakes, and John F. Ewald, Jr., New Milford, N.J., assignors to General Foods Corporation, White Plains, N.Y., a corporation of Delaware
Filed Sept. 15, 1967, Ser. No. 668,229
Int. Cl. F26b *13/30*
U.S. Cl. 34—92 6 Claims



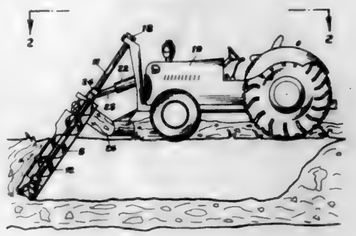
An improved freeze-drying condenser consisting of a set of tubes which are mounted internally in a freeze-drying chamber. The condenser is compact and is capable of handling the large peak loads experienced in a batch freeze-drying cycle. Operating efficiency of the freeze-drying system is increased by protecting vacuum pumps from exposure to excessive moisture vapor and by minimizing condenser plugging.

3,443,325
EXHAUST CONTROL SYSTEM FOR DRYER HOOD
Kenneth H. Jones, Ramsey, N.J., assignor to AER Corporation, Ramsey, N.J., a corporation of New Jersey
Filed Apr. 29, 1966, Ser. No. 546,284
Int. Cl. F26b *13/08*
U.S. Cl. 34—114 12 Claims



An exhaust control system for the dryer hood of a paper machine dryer section in which frames support drying cylinders in a drying space above the mill floor to form spaces between the frames and the front and rear walls of the hood. Baffles located in the spaces between the hood walls and the frames inhibit flow of drying air supplied from below the floor transversely of the drying space to direct the air to a plenum chamber at the top of the hood from which the air and moisture is permitted to escape through an elongated narrow opening at the peak of the plenum chamber.

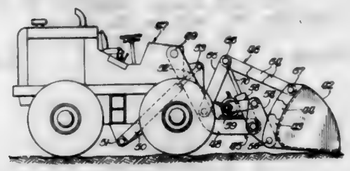
3,443,326
AUGER TYPE DITCHING MACHINE
Frederick E. Saumenig, Pompano, Fla. (12 SE. 9th Ave., Deerfield Beach, Fla. 33441)
Filed Feb. 24, 1966, Ser. No. 529,839
Int. Cl. E02f *5/04*
U.S. Cl. 37—81 2 Claims



An excavating device powered by a tractor and including a trough having a rotary shaft therein with a cutter on the shaft at the forward end of the trough and a spiral conveyor on the shaft within the trough, the trough and shaft being pivotally connected to a frame at one extreme end of the tractor by an adjustable piston and cylinder device. Tubular conduits communicate with the rear end of the trough so that earth may be conveyed by the spiral conveyor to the conduits which discharge

the earth on opposite sides of the excavating device. The shaft is driven from the tractor.

3,443,327
VIBRATORY CUTTING MEANS TO SUPPLEMENT EARTH PENETRATION AND MOVEMENT BY EARTH WORKING EQUIPMENT
William E. Martin, % Martin Company, P.O. Box 187, Kewanee, Ill. 61443
Filed Sept. 8, 1965, Ser. No. 485,799
Int. Cl. E02f *3/76, 3/62, 3/46*
U.S. Cl. 37—126 12 Claims

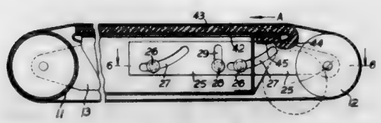


This invention relates to an apparatus to provide a supplemental motion or agitation for an earth working facility, tool or digging device that is normally carried by or forming an operable mechanism mounted upon a mobile power vehicle to be bodily maneuvered or manipulated by such a vehicle for material handling purposes and whereby the added motion or the induced agitation develops a compound action which enhances the material penetration and earth working functions of such an earth working facility.

ERRATUM

For Class 37—129 see:
Patent No. 3,443,329

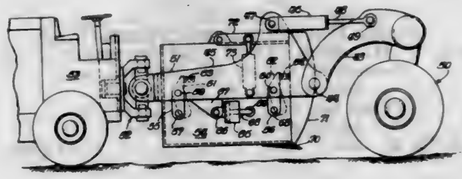
3,443,328
IRONING TABLES
Charles V. Williams, Rayleigh, England, assignor to Airflow Housewares Limited, Blackwood, England, a British company
Filed Mar. 14, 1967, Ser. No. 622,949
Claims priority, application Great Britain, Mar. 18, 1966, 11,987/66
Int. Cl. D06f *69/02, 81/10*
U.S. Cl. 38—104 1 Claim



An ironing table for use with an ordinary domestic electric smoothing iron, having a conveyor belt to support the article to be ironed, the belt being driven by a motor, and the upper run of the belt being supported on a yielding resilient pad.

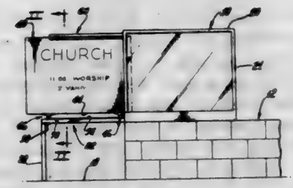
3,443,329
CONTROL AND NUDGING MEANS FOR EARTH WORKING DEVICES
William E. Martin, % Martin Company, P.O. Box 187, Kewanee, Ill. 61443
Filed Sept. 8, 1965, Ser. No. 485,728
Int. Cl. E01h *1/00;* E02f *3/76*
U.S. Cl. 37—129 9 Claims

A mobile working vehicle having a road scraping bowl supported from a frame assembly that functions to vertically adjust the level of the bowl in selected relation to the ground between a working and a transport position and which vehicle incorporates further means to cause



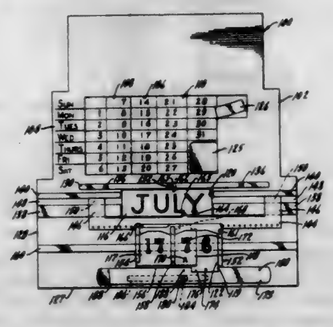
fore and aft nudging of the bowl in relation to its supporting frame and to the ground surface being worked or acted on by the scraper bowl.

3,443,330
SIGN DISPLAY CONSTRUCTION
Arthur W. Scott, 1768 Glenwood Drive, Bakersfield, Calif. 93306
Filed July 22, 1966, Ser. No. 567,251
Int. Cl. G09f *7/00*
U.S. Cl. 40—65 1 Claim



An upstanding generally rectangular hollow housing for outdoor use, having transparent front and rear walls and an open side provided with closure and bracing panels foldingly pivoted to the housing respectively about lower and upper horizontal axes, and a vertically disposed display board laterally movable into and out of the housing through the open side, the board in its outer position being supported by the outfolded closure panel and braced by the outfolded bracing panel, both panels being configured to retain the board vertically upright in its outer position, the closure panel having a support leg pivotally connected thereto for supporting engagement with the ground.

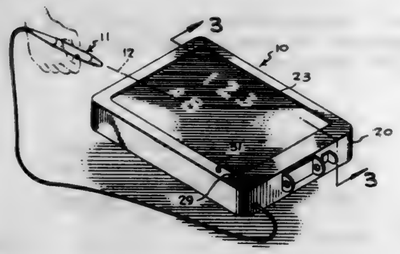
3,443,331
PERPETUAL CALENDAR MACHINE
Edward L. Davis, 210 W. Lincoln, Onarga, Ill. 60955
Filed July 21, 1967, Ser. No. 655,081
Int. Cl. G09d *3/10*
U.S. Cl. 40—109 8 Claims



An automatic calendar including a days of the month slide which is positioned to show the correct desired

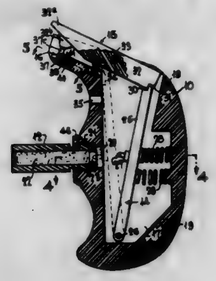
month by programming means which includes a series of coded cards and means responsive to said programming means to correctly position the said slide.

3,443,332
APPARATUS FOR WRITING WITH HAND MANIPULATED LIGHT SOURCE
Alexander C. Christy, Box 2098 Westover, Morgantown, W. Va. 26505
Filed Jan. 26, 1967, Ser. No. 611,875
Int. Cl. B43l *1/12*; G09f *13/20*
U.S. Cl. 40—134 14 Claims



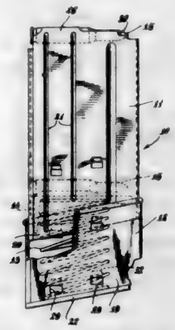
Electroluminescent writing apparatus including a substantially pencil-shaped writing member providing a source of electromagnetic radiation, adapted to be held in the hand and generate a narrow cross-section beam, such as a light beam, of appropriate frequency to excite phosphorescent material to emit visible light, and a stationary exhibiting unit in the form of a generally panel-shaped body containing a phosphorescent material defining a substantially flat viewing screen or surface of substantial area, the phosphorescent material being locally excited by the beam to generate visible light patterns in accordance with the movement of the writing member. A reflective backing may be provided to enhance light generation in the phosphorescent material and a photovoltaic semi-conductor layer may underlie the phosphorescent material and be biased to further enhance light production.

3,443,333
TEAR GAS PALM PISTOL
Andrew E. Manatos, 1100 6th St. SW., Apt. 208, Washington, D.C. 20024
Filed Aug. 4, 1967, Ser. No. 658,551
Int. Cl. F41c *9/00*
U.S. Cl. 42—1 4 Claims



A T-shaped tear gas pistol having a charge-containing barrel, a transversely disposed handle projecting in opposite directions from one end of the barrel, and a spring-pressed detonating lever is pivoted at and within one end of the handle and likewise projecting in opposite directions substantially across said barrel end. The barrel consists entirely of a short cartridge and is adapted to project between two adjacent fingers of the user's hand (usually the index and middle fingers) when the opposite ends of the handle are gripped between said fingers and the hand palm. A trigger is releasably engageable with the free detonating lever and is adapted to be pressed by the thumb to actuate the detonating lever.

3,443,334
CARTRIDGE MAGAZINE WITH A SPRING WHOSE FORCE AGAINST THE CARTRIDGE MAY BE SELECTIVELY INCREASED
Edward J. Ardolino, 6 Whiting Farms Road, Branford, Conn. 06405
Filed Aug. 28, 1967, Ser. No. 663,868
Int. Cl. F41c *25/02*
U.S. Cl. 42—50 3 Claims



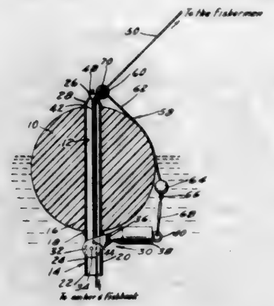
An article dispensing container having a spring as a discharge assistant wherein the biasing force of the spring may be set at a predetermined magnitude during the storage of the articles within the container, the biasing force of the spring being selectively increased to a higher magnitude to assist the discharge of articles from the container during the dispensing thereof.

3,443,335
ROD AND REEL HOLDER
Gilbert C. Guydos, 2637 Adams St., Hollywood, Fla. 33020
Filed Oct. 25, 1967, Ser. No. 678,067
Int. Cl. A01k *87/06*
U.S. Cl. 43—22 10 Claims



The invention provides a rod and reel holder in which a handle, a gimbal butt and a real seat portion are all integral portions of a one-piece, elongated, rigid holder member which may be cast or molded from metal or plastic. The reel seat portion is cylindrical and has a depression therein for receiving the base of a reel and an axial bore for receiving a projection of a further handle. The reel seat portion further has lugs projecting transversely from opposite sides of the depression providing a seat for the reel frame, and the lugs have concave upper surfaces substantially coplanar with or above the bottom of the depression, and openings for receiving bolts of the reel. The lugs are of one-piece construction with the reel seat portion. The reel seat portion also includes retention means for engaging an indentation in the projection of the further handle and an eyelet which may receive a hook or the like for attaching the holder to a boat.

3,443,336
FISHING DEVICE
William Aubrey Reese, 14653 Rosecrans, Apt. 1, La Mirada, Calif. 90638
Filed May 5, 1967, Ser. No. 636,527
Int. Cl. A01k *93/00*
U.S. Cl. 43—44.88 8 Claims



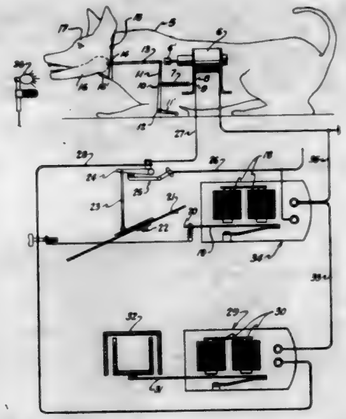
A fishing line float with line brake and hook depth adjustment. A spindle assembly extends vertically through the float, the spindle being tubular with open ends. The brake mechanism comprises a lever pivoted to the spindle adjacent one end, the lever being connected to a rod with a brake member at one end for holding engagement with a fish line extending through the tubular spindle when the float is in a predetermined position. Means is provided for actuating the lever to release the fish line when the fisherman pulls on the line.

3,443,337
TOY FOR BLOWING BUBBLES
Joseph R. Ehrlich, 350 W. 31st St., New York, N.Y. 10001
Filed Aug. 24, 1967, Ser. No. 663,017
Int. Cl. A63l *33/28*
U.S. Cl. 46—6 5 Claims



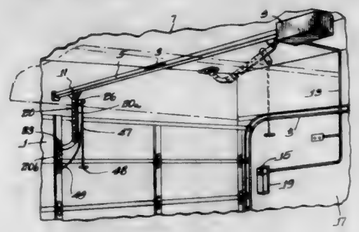
A child's toy bubble pipe is provided which has a tube for blowing air by mouth to a loosely stretched membrane for containing a charge of fluid within its minute interstices. The membrane inhibits distasteful back-flow of fluid to the child's mouth and on flexing, due to fluctuations of air flow, continually produces bubble forming films throughout its entirety which in turn enable the blowing of continuous chains of bubbles.

3,443,338
TOY INCLUDING A LIGHT IN FRONT OF A DOG WHICH MOVES IN A LIFE-LIKE MANNER AND A SOUND SIMULATING A BARK IS EMITTED
Kenneth C. Collins, 13639 Claire Blvd., Robbins, Ill. 60472
Filed Nov. 24, 1965, Ser. No. 509,555
Int. Cl. A63h *33/26*, *13/02*
U.S. Cl. 46—227 3 Claims



This toy includes a light, a dog facing the light and structure for emitting a sound which simulates the barking of a dog. At the same time mechanism within the dog causes it to nod its head, open and close its mouth and move up and down at its front legs so that an observer hears and sees the dog as barking at the light.

3,443,339
RELEASE MECHANISM FOR GARAGE DOOR CONNECTING ARM
Richard Goldstein, Deerfield, Ill., assignor, by mesne assignments, to Chamberlain Manufacturing Corporation, Elmhurst, Ill., a corporation of Iowa
Filed Mar. 7, 1967, Ser. No. 625,904
Int. Cl. E05c *15/02*; E05b *65/10*
U.S. Cl. 49—141 8 Claims



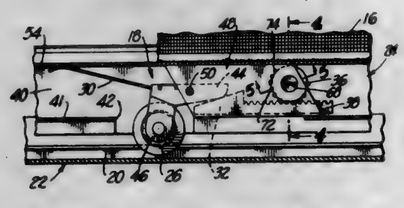
A door mounted for movement between a lowered substantially vertical position and a raised substantially horizontal position is connected to an overhead horizontally movable motor driven door operator means by a connecting arm assembly pivotally mounted at its bottom end to the door. The upper end of the connecting arm assembly has a pair of confronting resilient arm portions free to flex between relatively closely spaced and spread apart positions. A coupling member carried by the door operator means is securely sandwiched between the spaced arm portions. When the arm portions are spread apart, the connecting arm assembly falls away from the coupling member. The spaced arm portions are

spread apart by means including an operating member pivotally supported between the spaced arm portions and having on one side of its pivot axis a protuberance which, upon a downwardly pull on a pull cord attached to the opposite side thereon, moves between and spreads apart the spaced arm portions of the connecting arm assembly.

3,443,340
ADJUSTABLE SPRING-LOADED SUPPORTING ROLLER ASSEMBLY FOR SLIDING DOORS AND THE LIKE

B. J. Helmick, 303 Deborah Court, Upland, Calif. 91786, and Harold Clyde Patterson, 1445 Viewtop Drive, Clearwater, Fla. 33516

Filed Aug. 14, 1967, Ser. No. 661,172
Int. Cl. E05d 13/02; A47h 15/02
U.S. Cl. 49—420 10 Claims

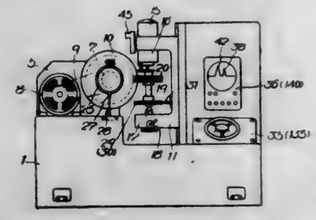


An adjustable spring-loaded supporting roller assembly for sliding panels, such as sliding doors and windows, movable along a track, the roller assembly having a track engaging roller which is spring-loaded into engagement with the track, and a generally wedge shaped roller positioning cam with a novel rack and pinion adjustment for adjustably limiting deflection of the roller toward the panel under the action of its biasing spring to establish the normal operating position of the roller relative to the panel and transmitting vertical loads between the roller and panel.

3,443,341
GEAR GRINDING MACHINE

Soichiro Honda and Shiro Uchida, Tokyo, Japan, assignors to Honda Giken Kogyo Kabushiki Kaisha, Tokyo, Japan

Filed Apr. 20, 1964, Ser. No. 361,092
Claims priority, application Japan, Aug. 30, 1963, 38/45,455; Sept. 11, 1963, 38/47,943; Oct. 23, 1963, 38/56,076; Dec. 17, 1963, 38/67,593
Int. Cl. B24b 27/00, 3/34
U.S. Cl. 51—105 5 Claims

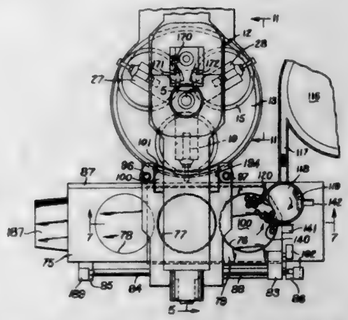


1. A gear grinding machine comprising two synchronous motors for rotating a hob-type helical abrasive wheel and a roughly shaped gear stock to be ground thereby in synchronized phase relationship with each other, memory means for registering definite angular positions of the abrasive wheel and the gear stock about their respective axes of rotation when they are at rest in an intermeshing relationship with each other, means for adjusting the phase relationship between the abrasive wheel and the gear stock in their synchronized rotation by regulating the phase of at least one of said synchronous motors, and phase angle detector means for detecting the phase relationship between the rotating abrasive wheel and gear stock as in their respective registered positions through the intermediary of said memory means.

3,443,342
LAPPING MACHINE WITH AUTOMATIC LOADING AND UNLOADING MEANS

Eugene A. Schulz, Niles, Ill., assignor to Crane Packing Company, Morton Grove, Ill., a corporation of Illinois

Filed Mar. 21, 1966, Ser. No. 535,894
Int. Cl. B24b 5/00, 29/00, 47/02
U.S. Cl. 51—131 14 Claims

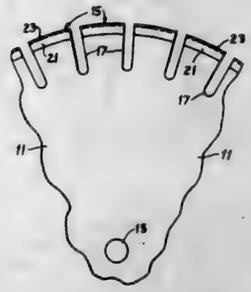


An automatic loading and unloading mechanism for a flat lapping machine, the latter having a plurality of conditioning rings which serve also to hold the workpieces on the lap. The rings are indexed periodically to a loading station where they are slid off and over an elevator which lowers the finished workpieces from the rings and receives unfinished workpieces from a slide, the latter pushing the finished pieces off the elevator before the unfinished pieces are slid thereon. A hopper automatically fills the slide with appropriately arranged and counted workpieces while the lapping machine is finishing workpieces in preparation for sliding the workpieces upon the elevator.

3,443,343
DIAMOND ABRASIVE SAW BLADE

Willard R. Pratt, Brighton, N.Y., assignor, by mesne assignments, to Federal-Mogul Corporation, Southfield, Mich., a corporation of Michigan

Filed Oct. 11, 1965, Ser. No. 494,729
Int. Cl. B24d 5/00, 7/00; C04b 31/16
U.S. Cl. 51—206.4 5 Claims

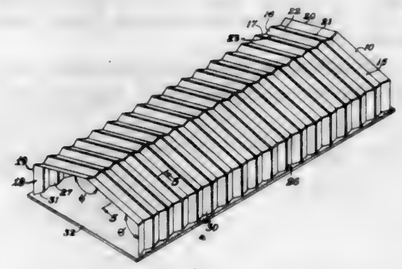


There is disclosed a diamond abrasive saw blade having abrasive elements each of which comprises a hard matrix material containing diamond particles which project slightly beyond the face of the hard matrix material. A layer of softer material initially overlies the face of the hard matrix from which the diamond particles project. When the blade is first put into use, the soft layer quickly wears away, exposing the diamonds in position to perform the cutting action. In manufacturing the abrasive elements, powder for forming the soft layer is first put into the mold, and then the powder for forming the hard matrix material, containing the diamond particles mixed with the matrix powder, is placed in the mold over the first mass of powder, so that some of the diamond particles in the matrix powder will project into the powder for the softer layer, after which pressure and heat are used (either successively or simultaneously) to complete the formation of the abrasive element, which is then attached to a steel core or other suitable body for carrying the abrasive elements.

3,443,344
FOLDABLE STRESSED SKIN STRUCTURE

Charles W. Williams, Jr., 1624 Park Towne Place, NE. (W6), Cedar Rapids, Iowa 52402

Continuation of application Ser. No. 419,984, Dec. 21, 1964. This application Feb. 27, 1968, Ser. No. 711,157
Int. Cl. E04b 7/12, 1/346, 7/16
U.S. Cl. 52—18 13 Claims

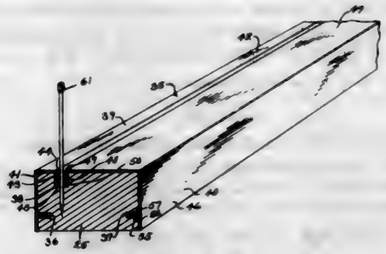


A three-dimensional foldable structure having continuously joined elements with parallel fold lines which are non-linear to a first degree when in a collapsed condition and in which a change in the degree of non-linearity of the fold lines occurs when the volume enclosed by the structure is increased.

3,443,345
COVERED WOOD CONSTRUCTION ELEMENT

Robert L. Spencer, Medford, Wis., assignor to Weather Shield Aluminum Products, Inc., Medford, Wis., a corporation of Wisconsin

Filed Nov. 30, 1967, Ser. No. 686,956
Int. Cl. E06b 1/04; E04c 2/38; E04f 19/02
U.S. Cl. 52—211 7 Claims

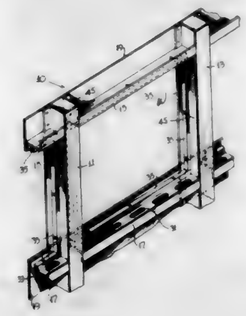


A wood construction element having a cover including flexible flaps interleaved across a groove defined in the wood element. The covered wood element can be attached to a desired structural member by nailing through the flexible flaps of the cover and through the groove after which the flexible flaps protectively cover the groove. Most usually, the cover is formed of rigid vinyl wall elements and flexible vinyl flaps.

3,443,346
WINDOW CONSTRUCTION

Walter S. Eggert, Jr., Huntingdon Valley, Pa., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Aug. 7, 1967, Ser. No. 658,897
Int. Cl. E06b 1/04; E04b 1/62
U.S. Cl. 52—214 1 Claim

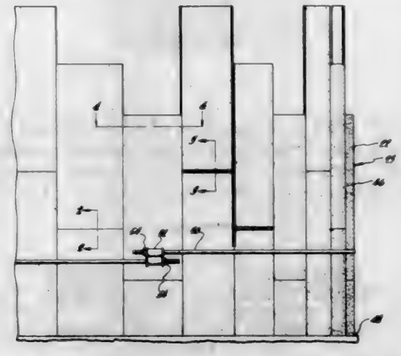


A window construction for a railway passenger car wherein a sideframe having a window opening includes blocks fastened about the periphery of the opening. A rubber glazing strip having an outer groove is placed on and is carried by the blocks in coacting relationship with the peripheral margins of the sideframe window opening. The glazing strip includes an inner slot to receive a unit consisting of inner and outer windows locked in place by an inlay strip associated with the glazing strip.

3,443,347
STRUCTURES MADE FROM POLYESTER RESIN CONCRETE

William R. Varnell and Mance R. Mitchell, San Antonio, Tex., assignors to Concrete Development Corporation, San Antonio, Tex., a corporation of Texas

Continuation-in-part of application Ser. No. 427,568, Jan. 25, 1965. This application Mar. 22, 1968, Ser. No. 718,309
Int. Cl. E04c 5/08, 1/00; E04b 7/00
U.S. Cl. 52—224 5 Claims



Precast panel is made from plastic concrete with edges of the panel adapted to fit against edges of other panels. Means adjacent the edges define a channel, and plastic ce-

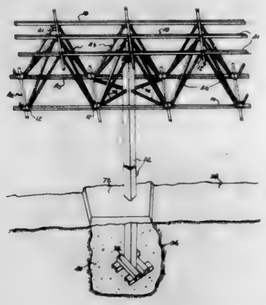
ment is disposed in the channel to bond the edges of the panels together.

3,443,348

SPACE FRAME SUPPORT STRUCTURES

Hristo V. Papayoti, Ann Arbor, Mich., assignor to Unistrut Corporation, Wayne, Mich., a corporation of Michigan

Filed Oct. 17, 1966, Ser. No. 588,277
Int. Cl. E02d *27/42;* **E04h** *12/00*
U.S. Cl. 52—299 **14 Claims**



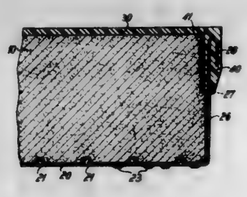
A support structure for a space frame system of the type wherein an upper chord frame and a lower chord frame structure are formed of a plurality of strut members connected to each other and held together by a plurality of connecting fixtures. The support structure is adapted for connection to the connecting fixtures and includes one or more cross arm members carried by pedestal members supported at the top of support columns.

3,443,349

FLOOR PANEL PLATE

Joachim Mahle, 50 Endersbacher Strasse, 7 Stuttgart-Bad Cannstatt, Germany

Filed Mar. 14, 1967, Ser. No. 623,043
Claims priority, application Germany, Mar. 30, 1966, M 68,971
Int. Cl. E04c *1/28, 2/00*
U.S. Cl. 52—309 **3 Claims**



A floor plate is constructed of wood pressed board, such as a wood chip board, having adequate compression strength united with a bottom layer of metal having adequate tensile strength for the floor loads.

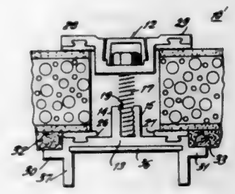
3,443,350

EXTERIOR WALL ACCESSORIES

Herbert L. Birum, Jr., Pleasant Valley, Titusville, N.J. 08560

Filed May 13, 1966, Ser. No. 549,834
Int. Cl. E04b *2/00*
U.S. Cl. 52—459 **10 Claims**

Exterior batten assemblies for securing building facings to building superstructure in which exterior batten strips are securely fastened to interior batten strips for support of building facings by means of elongated projections defining a cavity in which one interior surface of the cav-



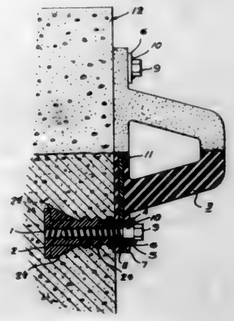
ity is substantially flat while the opposing surface is ribbed for firmly receiving and embracing fastening means threadedly engaged within the cavity.

3,443,351

DEVICE FOR FITTING FENDERS TO STRUCTURES AND THE LIKE

Michio Kumazawa, Yamato-machi, Kitaodachi-gun, Saitama Prefecture, Japan, assignor to Seibu Gomu Kagaku Kabushiki Kaisha (trade name: Seibu Rubber Chemical Co., Ltd.), Tokyo, Japan, a corporation of Japan

Filed June 19, 1967, Ser. No. 647,003
Claims priority, application Japan, Sept. 6, 1966, 41/83,596
Int. Cl. E04b *1/38*
U.S. Cl. 52—704 **2 Claims**



The present device is for connecting fenders to a structure and is more particularly concerned with a device for fitting fenders to structures and the like having a resilient plug insertable in a structure opening to which a fender can be connected by a bolt.

3,443,352

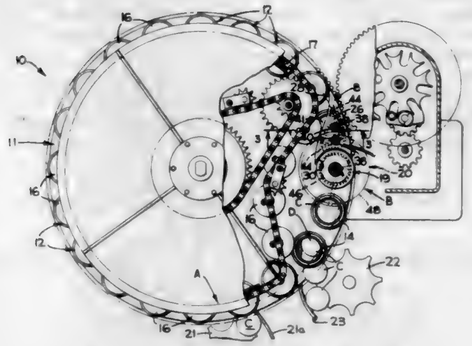
PACKAGING MACHINE AND METHOD

Samuel A. Mencacci, Wilrijk-Antwerp, Belgium, assignor to International Machinery Corporation, St. Niklaas-Waas, Belgium, a corporation of Belgium

Filed Apr. 14, 1967, Ser. No. 631,050
Int. Cl. B65b *55/00*
U.S. Cl. 53—22 **10 Claims**

A vacuumizing, gassing and closing machine for moving covered but unsealed containers having an inert non-

condensible gas therein below a plate heated slightly above the ambient temperature for causing the inert non-



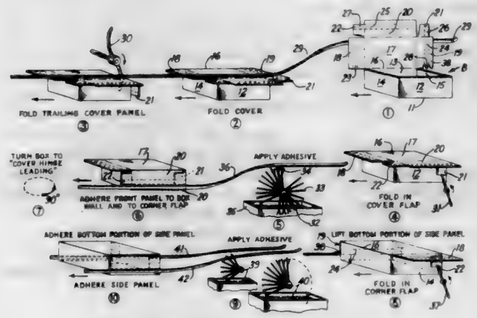
condensible gas in the containers to expand slightly and flow out of the containers thereby preventing air from entering the containers.

3,443,353

METHOD OF FORMING AND GLUING A FOLDING BOX COVER COMPRISING A CONTINUOUS TEAR STRIP

Angelo N. Di Vecchio, Menlo Park, Calif., assignor to Kliklok Corporation, New York, N.Y., a corporation of Delaware

Filed Feb. 10, 1966, Ser. No. 526,416
Int. Cl. B65b *7/00, 7/26;* **B31b** *1/26*
U.S. Cl. 53—38 **4 Claims**



A method is provided for sealing the hinge cover assembly of a folding box in which the hinge cover comprises a front flap and two side flaps, each flap, in turn, comprising a tear strip portion. The three tear strips are interconnected at the box corners by glue tabs.

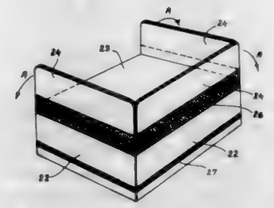
The disclosed method requires only one turning operation of the box and is characterized by (a) the downfolding, without gluing, of one cover side flap on one box end wall, (b) the subsequent downfolding and gluing of the cover front flap including the gluing of the glue tab of the tear strip of the one side flap to the tear strip of the front flap and further, after turning of the box, (c) the folding of the glue tab of the front tear strip over the other box end wall followed by (d_1) the downfolding and gluing of the other cover side flap over, and to, the other box end wall and the glue tab previously folded thereover, and (d_2) the partial upfolding of the first side flap along its tear strip to apply adhesive to the first side flap and adhere it to the first end wall, thus completing the sealing operation.

3,443,354

METHOD OF SEALING CARTONS

Wictor Carl Olaf Lindström, Gothenburg, Sweden, assignor to Jagenburg & Medin AB, Boras, Sweden

Original application Apr. 17, 1964, Ser. No. 360,676, now Patent No. 3,355,085, dated Nov. 28, 1967. Divided and this application Nov. 29, 1966, Ser. No. 610,709
Int. Cl. B65b *7/20*
U.S. Cl. 53—47 **8 Claims**



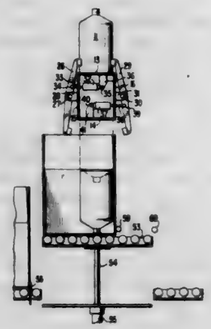
The method of sealing a carton, in which a lid is closed into engagement with in-turned wall flaps, thereby forming a joint between the lid and walls of the carton, hinged flaps of said lid are bent upward from the plane of the engaged lid, adehesive film is placed on the joint between engaged lid and walls, and the hinged flaps are finally bent down to be sealed to the walls by means of the adhesive film.

3,443,355

CASE PACKING APPARATUS

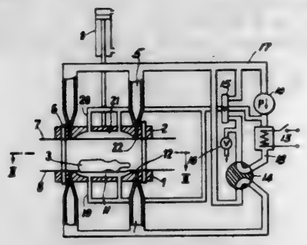
Stewart H. Birrell, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio

Filed Feb. 3, 1967, Ser. No. 613,919
Int. Cl. B65b *21/12, 35/16*
U.S. Cl. 53—161 **10 Claims**



A case loading apparatus in which articles to be packaged are collected and clamped in position on a platform supported for rotation about a horizontal axis. The platform is then rotated through 180° about the horizontal axis to invert the articles, which are then released and permitted to fall by gravity in the inverted condition into an open case.

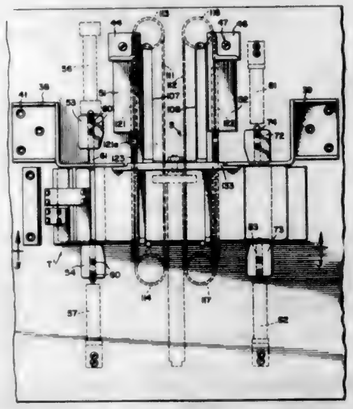
3,443,356
DEVICE FOR THE PRODUCTION OF PACKAGES
Franz Alois Hani, Rutlistrasse 6, Wil, Saint Gall, Switzerland
Filed May 25, 1966, Ser. No. 552,802
Claims priority, application Switzerland, May 26, 1965, 7,399/65
Int. Cl. B65b *9/02, 7/02, 51/30*
U.S. Cl. 53—184 4 Claims



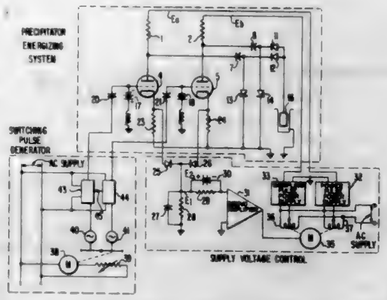
Apparatus for forming a thermoplastic package having at least one welded seam about an object from two webs of thermoplastic foil overlying a pair of spaced opposed die plates having recesses therein and open grooves spaced from the recesses corresponding in configuration with the welded seam to be produced. Air nozzles are connected in communication with the open grooves of each die plate and are connected through valving to the vacuum side of a pump to maintain the two webs in position on the die plates and stretch the webs over an object laid between them in the area of the recesses as a device moves the die plates together to firmly press the two thermoplastic foil webs together on opposite sides of the open grooves. The valving is then movable to connect a hot air blower on the pressure side of the pump to the air nozzles and groove of one die plate while the groove of the opposite die plate is connected to the vacuum side of the pump to weld a seam in the webs in the area of the grooves and simultaneously separate the package thus formed from the remainder of the webs. Other air passages are also provided in the recesses to hold the foils therein, separate them therefrom and shrink the thermoplastic package taut about the article.

3,443,357
PACKAGING MACHINE
Robert D. Bacon, Maitland, Fla., and William R. Davis, Lawrenceville, Ga., assignors, by mesne assignments, to Otto Huensel G.m.b.H., Hannover, Germany
Filed Apr. 21, 1967, Ser. No. 632,643
Int. Cl. B65b *43/32, 43/24*
U.S. Cl. 53—186 10 Claims

1. A packaging machine comprising, in combination, a frame having an upper surface, a loading zone on said frame upper surface, a magazine supported on said frame for holding a plurality of vertically stacked cartons in a flattened condition, said cartons having flaps at each end for closing the front and rear ends of said carton, a pair of opposed folding and tucking assemblies on said frame adjacent the ends of said loading zone, means for moving said folding and tucking assemblies between an inoperative position for accommodating a carton therebetween and an operative position for moving said carton front and rear flaps into closing relationship with the ends of said carton, retractable carton stop means on said frame adjacent said loading zone intermediate said folding and tucking assemblies, means for moving said carton stop means between a retracted position below said frame upper surface and an extended position with said stop means projecting upwardly from said frame upper surface adjacent the side of said loading zone opposite said magazine, reciprocally movable carton transfer and squaring means on said frame, means for moving said carton transfer and squaring means in one direction in the inoperative position of said folding and tucking assemblies to engage the trailing side edge of the lowermost flattened carton in said magazine and in the opposite direction to convey said edge engaged carton into said loading zone for abutting engagement of the leading side edge of said flattened carton with said stop means in the extended position, said means for moving said carton transfer and squaring means being arranged to continuously urge said carton into said abutting engagement with said extended stop means for squaring and gripping said carton with the ends of said carton adjacent said folding and tucking assemblies for end loading with an article and pushed means operatively associated with said carton transfer and squaring means for pushing said loaded carton along said frame upper surface out of said loading zone during the movement of said carton transfer and squaring means in said one direction in the inoperative position of said folding and tucking assemblies and in the retracted position of said stop means.

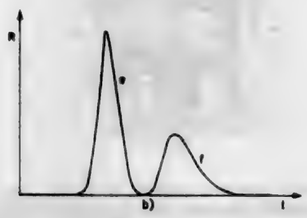


3,443,358
PRECIPITATOR VOLTAGE CONTROL
John W. Dreanning, Baltimore, Md., and John B. Thomas, Princeton, N.J., assignors to Koppers Company, Inc., Pittsburgh, Pa., a corporation of Delaware
Filed June 11, 1965, Ser. No. 463,125
Int. Cl. B03c *3/68*
U.S. Cl. 55—2 29 Claims



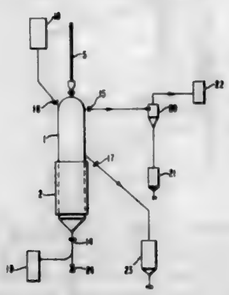
A method and system for maintaining precipitator voltage at a predetermined operating value below sparkover potential by superimposing one, or a pair, of unidirectional or high frequency sampling waveforms of predetermined amplitude recurrently on the continuously energized precipitator electrodes and adjusting the D.C. potential applied to the electrodes in response to precipitator sparking during the application of the sampling waveforms.

3,443,359
METHOD FOR SEPARATING A MIXTURE OF ORGANIC COMPOUNDS
Marco Taramasso, San Donato Milanese, and Luigi Zerilli, Milan, Italy, assignors to Snam Progetti S.p.A., Milan, Italy, a company of Italy
Filed Apr. 18, 1966, Ser. No. 543,285
Claims priority, application Italy, Apr. 23, 1965, 3,864/65
Int. Cl. B01d *53/02, 15/08*
U.S. Cl. 55—67 3 Claims



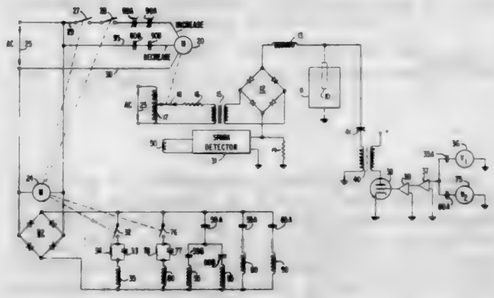
For gas chromotography a material is used comprising a support, and a halide bound to said support by a cationic or anionic connection, said support being selected from the group consisting of kaolinite, halloysite, sepiolite, attapulgite, vermiculite, chlorite, and graphite which has been subjected to oxidation, and said halide being selected from the group consisting of dimethyloctadecylammonium, trimethyloctadecylammonium, and trimethyloctylammonium halides.

3,443,360
FLUID BED COOLER FOR GAS SEPARATION
James W. Reeves, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Oct. 12, 1967, Ser. No. 674,979
Int. Cl. B01d *53/08, 5/00*
U.S. Cl. 55—71 5 Claims



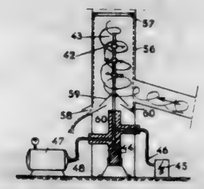
Apparatus and a process for the fractionation of gases into at least two components which comprises cooling the gases in a fluid bed of particles inert to the gases to condense at least one component of the gases while leaving at least one other component uncondensed; removing portions of the bed with the condensed component thereon, removing the condensed component from the inert particles, and recycling the inert particles to the fluid bed for reuse.

3,443,361
AUTOMATIC PRECIPITATOR VOLTAGE CONTROL
John W. Drenning, Baltimore, Md., assignor to Koppers Company, Inc., Pittsburgh, Pa., a corporation of Delaware
Filed June 11, 1965, Ser. No. 463,126
Int. Cl. B03c *3/68*
U.S. Cl. 55—105 13 Claims



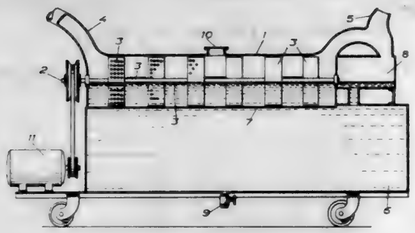
A system for maintaining precipitator voltage at a predetermined operating value below sparkover potential by superimposing one, or a pair, of unidirectional or high frequency sampling waveforms of predetermined amplitude recurrently on the precipitator electrodes and adjusting the potential applied to the electrodes in response to precipitator sparking during the application of the sampling waveforms.

3,443,362
PRECIPITATOR
Paul Richard Ebert, Huningue, Haut-Rhin, France
Filed July 13, 1965, Ser. No. 471,559
Claims priority, application France, July 15, 1964, 981,967, Patent 1,406,733; Jan. 7, 1965, 1,203, Patent 87,149; Apr. 30, 1965, 15,481, Patent 87,986
Int. Cl. B03c *3/78, 3/41*
U.S. Cl. 55—117 4 Claims



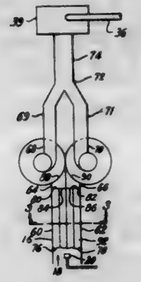
An electric precipitator having a plurality of vertically spaced elements mounted for independent rotation on a common shaft. The shaft is in turn axially contained within a walled conduit through which gas flows continuously. The elements are each provided with relatively sharp projections extending laterally in a direction opposite to the direction of element rotation. A D.C. current generator is connected to the elements in order to produce an electric potential between the elements and the conduit wall. The magnitude of the potential is such that ions are caused to escape from the sharp projections. The reaction of the escaping ions causes the elements to rotate, and any particles contacted by the ions are propelled against the interior conduit wall, which is continuously being washed by a downward flow of water.

3,443,363
INSTALLATION FOR PURIFICATION OF GAS
Arthur Offergeld, 8 Rue des Foulons, Brussels, Belgium
Filed Sept. 22, 1966, Ser. No. 581,214
Int. Cl. B01d 47/02
U.S. Cl. 55—232 1 Claim



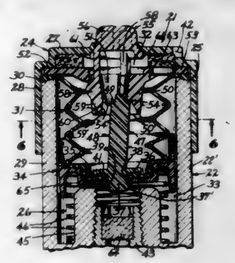
Apparatus for purifying gas by passing the gas across a purification zone occupied by a dispersion or mist of droplets of purifying liquid, the free volume left between the droplets representing in the region of 50% of the volume of the purifying zone. The apparatus consists of a liquid reservoir and a purifying chamber, a rotatable shaft being mounted in the purifying chamber, said shaft being provided along its axis with a series of individual perforated alternately disposed blades.

3,443,364
DUST COLLECTOR
Robert D. Saltzman, Delmont, Pa., assignor to Bituminous Coal Research Inc., Monroeville, Pa., a corporation of Delaware
Filed Dec. 9, 1966, Ser. No. 600,524
Int. Cl. B01d 47/06
U.S. Cl. 55—237 3 Claims



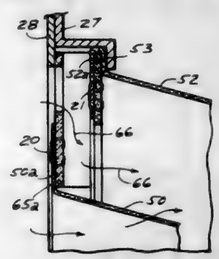
A wet type dust collector for separating dust particles as a slurry from dust laden air. The dust collector includes a cyclone type separator with an inlet opening, a clean air outlet opening and a slurry outlet opening. A scrubber duct is connected to the separator inlet opening and has a plurality of stacked tubes that serve as an air straightener and as surfaces for supporting a liquid film. A spray nozzle is positioned at the inlet end of the scrubber duct and is operable to spray water in droplet form into the air stream to wet the dust particles in the air stream entering the scrubber duct. The surfaces of the stacked tubes within the scrubber duct support a liquid film of the spray water for impinging other dust particles as the air flows through the scrubber duct. At the outlet end of the stacked tubes the liquid film is discharged into the separator as droplets to further wet the dust particles in the air stream. Within the separator there is an internal involute duct connected to the inlet of the separator and having an outlet opening located below the clean air outlet to eliminate effluent loss through the clean air outlet.

3,443,365
RESTRICTION INDICATOR
Stuart J. Lee, and Raymond L. Schenk, Minneapolis, Minn., assignors to Donaldson Company, Inc., Minneapolis, Minn., a corporation of Delaware
Continuation of application Ser. No. 544,959, Apr. 25, 1966. This application Dec. 6, 1967, Ser. No. 688,406
Int. Cl. B01d 35/14; G01m 13/02
U.S. Cl. 55—274 7 Claims



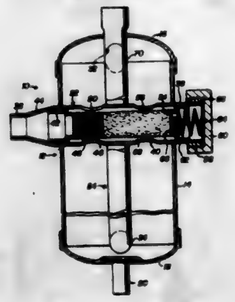
A restriction indicator adapted to be inserted in a line between a filter and internal combustion engine. The indicator being provided with a bellows across an opening wherein the bellows includes a stem and a guide and signal element attached thereto. The guide and signal element being visible when the filter becomes clogged, the stem being retained by a spider element even though the indicator is removed from the line. A button and unlatching means extending through an opening in the cap whereby the stem may be released so that the guide and signal element may move upwardly to indicate an unclogged filter condition.

3,443,366
FILTER ASSEMBLAGE
Louis Schwab, P.O. Box 575, Miami Beach, Fla. 33139
Filed Oct. 5, 1967, Ser. No. 673,137
Int. Cl. B01d 29/12, 27/10, 25/02
U.S. Cl. 55—309 5 Claims



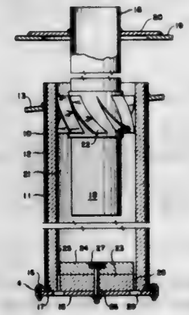
There is disclosed a filter assemblage for separating solid particles entrained in a flow of air in which one or several pairs of an inner or prefilter and an outer or main filter are independently supported in operational nested position so that the inner filter can be conveniently withdrawn from the outer filter for replacement. The inner or prefilter and the outer or main filter are supported in operational nested relationship by superimposed frames and a bypass through the frame for the inner filter and past the frame for the outer filter provides for part of the total air flow a direct flow path into the outer filter. This bypass flow diverts a substantial portion of the total load from the inner filter to the outer filter by the suction or syphoning action of the air flow through the bypass.

3,443,367
SUCTION ACCUMULATOR
Edward W. Bottum, 9357 Spencer, Brighton, Mich. 48116
Filed Mar. 10, 1967, Ser. No. 622,125
Int. Cl. B01d 53/04, 53/14
U.S. Cl. 55—316 9 Claims



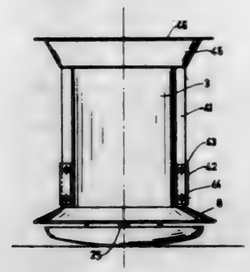
A suction accumulator has a casing with two oppositely disposed openings and a tube extending through both openings. Refrigerant fluid enters the casing through the inlet end of the tube outside the casing and passes through perforations in the tube after it enters the casing. A cap on the other end of the tube can be removed to permit access to the tube. A purifying element is provided in the tube such as a dessicant and/or strainer for removing particles. A U-shaped outlet conduit under suction has one opening for exhausting gases from the casing and another near the casing bottom for withdrawing liquid at a controlled rate.

3,443,368
TUBULAR CENTRIFUGAL SEPARATORS
Joseph G. Wilson, Riverside, and Harvey L. Franzel, Westport, Conn., and Le Roy H. Markway, Metairie, La., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Continuation-in-part of application Ser. No. 358,742, Apr. 10, 1964. This application July 26, 1966, Ser. No. 580,132
Int. Cl. B01d 45/08
U.S. Cl. 55—435 4 Claims



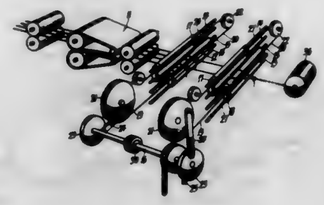
A tubular centrifugal separator, suitable for close juxtaposition to others, having a vortex tube, preferably ceramic-lined, and a simplified outlet for separated solids and bleed gas, including an open trough in a bottom closure (preferably ceramic) with flow restrictive discharge holes leading through the closure from the trough.

3,443,369
MOWING MACHINE
Petrus Wilhelmus Zweegers, Eindhovenschweg 2, Geldrop, Netherlands
Filed Feb. 23, 1966, Ser. No. 529,310
Claims priority, application Netherlands, June 18, 1965, 6507844; Nov. 24, 1965, 6515279
Int. Cl. A01d 75/30, 55/18, 35/24
U.S. Cl. 56—6 8 Claims



Mowing machine including a pair of rotatable drums each carrying cutters near its lower end. Fins extend axially along drum surface and aid delivery of cut crop through slot between drums. Fins may be carried by recessed portions of drum spaced inwardly from generally circular outline of drum periphery. Walls of drum may be cylindrical or convex, or may be defined by two frustoconical members arranged with their apexes directed toward each other.

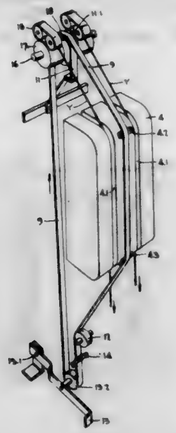
3,443,370
TWISTED THREAD ASSEMBLIES
Gordon W. Walls, Geelong, Victoria, Australia, assignor to Commonwealth Scientific and Industrial Research Organization, East Melbourne, Victoria, Australia
Filed Aug. 9, 1967, Ser. No. 659,483
Claims priority, application Australia, Aug. 9, 1966, 9,432/66
Int. Cl. D01h 7/86, 7/90
U.S. Cl. 57—34 12 Claims



Process for forming twisted thread assembly in two stages. In the first stage a group of strands is caused to ply-twist together to form a first thread by the steps of individually twisting one or more of the strands to impart alternating twist thereto and converging the strands. In the second stage the first thread and a second thread

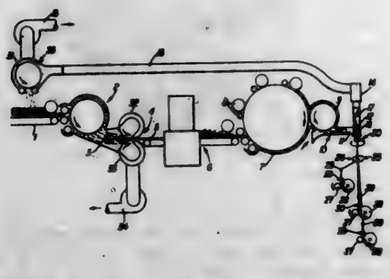
are caused to ply-twist together by applying steps similar to those of the first stage to the threads.

3,443,371
TEXTILE MACHINE
Alan Ward, East Greenwich, R.I., assignor to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
Filed Jan. 24, 1968, Ser. No. 700,273
Int. Cl. D01h *13/26, 13/04*; D02j *13/00*
U.S. Cl. 57—34 8 Claims



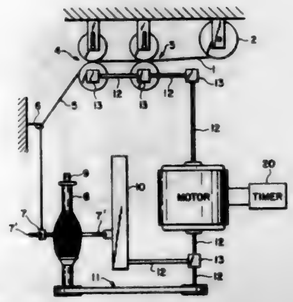
Apparatus for threading a textile machine comprising a double heater from a convenient level is described. The apparatus includes means for carrying a yarn strand up the back of a heater on a textile machine and over the top thereof into contact with the heated zone in front of the heater.

3,443,372
PRODUCTION OF YARN AND APPARATUS FOR USE THEREIN
Ian Eddleston, Rochdale, England, assignor to Turner Brothers Asbestos Company Limited, Manchester, England, a British company
Filed Apr. 18, 1967, Ser. No. 631,776
Claims priority, application Great Britain, Apr. 25, 1966, 18,071/66
Int. Cl. D01h *7/02*; D01g *15/00*
U.S. Cl. 57—58.89 10 Claims



In break spinning yarn the tail of the yarn is formed in a vortex of air from fibers introduced with the air at the yarn-outlet end of the vortex chamber and the yarn is mechanically twisted on leaving the vortex. Unused fibers carried away in the air stream are returned to fibre-preparing apparatus to be reused.

3,443,373
VARIABLE SPEED SPINNING FRAME
Morris M. Bryan, Jr., Jefferson, Ga., assignor to The Jefferson Mills, Inc., Jefferson, Ga., a corporation of Georgia
Continuation-in-part of application Ser. No. 507,928, Nov. 15, 1965. This application Nov. 21, 1966, Ser. No. 602,444
Int. Cl. D01h *13/00*
U.S. Cl. 57—98 3 Claims



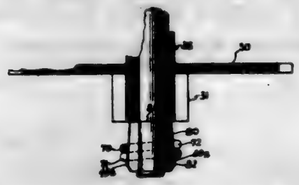
The present invention relates to improvements in the spinning of yarn. More particularly, the present invention relates to an apparatus for improving the winding of a spun yarn on a bobbin during the spinning operation by varying the speed of the spinning operation. Three embodiments of the invention are disclosed and in all three embodiments the speed of a spinning frame is reduced when the winding operation is occurring at the lowermost and uppermost ends of the bobbin. In addition, one embodiment provides for speed variations throughout the length of the bobbin which are responsive to both the progress of the total winding operation and the progress of each phase of the winding operation.

3,443,374
ENCAPSULATED WIRE CABLE AND METHOD OF ENCAPSULATION THEREOF
Umberto A. Carnevale, Wilmington, Del., assignor to All American Engineering Company, Wilmington, Del., a corporation of Delaware
Filed Sept. 30, 1966, Ser. No. 587,636
Int. Cl. H01b *3/42*
U.S. Cl. 57—149 8 Claims



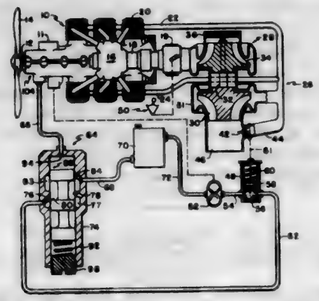
Wire cable comprising a plurality of strands with each strand encapsulated in a solid capsule formed of cured polyurethane elastomer. The strands of the cable being first coated with a primer compound and heated, then the elastomer is poured into a mold around the primed strands and cured.

3,443,375
FRICTION MECHANISM FOR CLOCK
Edward F. Cielaszyk, Oglesby, Ill., assignor to General Time Corporation, Stamford, Conn., a corporation of Delaware
Filed Aug. 11, 1967, Ser. No. 660,041
Int. Cl. G04b *27/00*
U.S. Cl. 58—85.5 6 Claims



A clock friction mechanism for use in a clock having plastic gear wheels and interposed between the gear train and the minute hand shaft.

3,443,376
ENGINE CONTROL SYSTEM AND TORQUE METER THEREFOR
Allen E. Light, Williamsport, Pa., assignor to Arco Corporation, Williamsport, Pa., a corporation of Delaware
Filed Aug. 4, 1967, Ser. No. 658,540
Int. Cl. F02b *37/08, 41/10*; F02m *7/00*
U.S. Cl. 60—13 6 Claims



The disclosure illustrates a control system for a turbocharger which pressurizes inlet air of an aircraft internal combustion engine to compensate for a loss in power at increased altitudes. The control system comprises a novel torque meter incorporated in the engine power train which provides a signal to a device that controls the rate of operation of the turbocharger and the degree of pressurization of the engine inlet air. The use of torque output as a parameter to control turbocharger operation enables a more precise and rapid control of power.

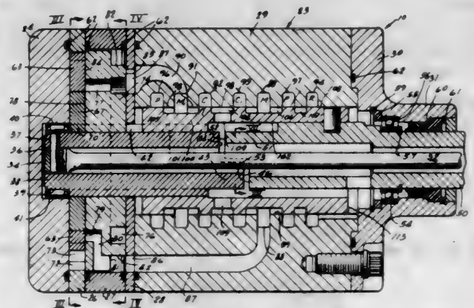
3,443,377
SELF-COOLED FUEL INJECTOR FOR A JET ENGINE
Edward Langford Hartley, Fleet, England, assignor to Power Jets (Research and Development) Limited, London, England
Filed Feb. 3, 1966, Ser. No. 524,679
Claims priority, application Great Britain, Feb. 8, 1965, 5,291/65
Int. Cl. F02g *3/00*; F02k *7/08*; B05b *15/00*
U.S. Cl. 60—39.74 5 Claims

A fuel injector comprising a series of pairs of tubes extending across a ramjet duct in the region of the combustion chamber inlet and having perforations in their downstream faces. The tubes extend between fuel headers carrying ejector nozzles. One nozzle is provided in each header for each pair of tubes, the nozzles being directed at the bores of different tubes and spaced from the tubes whereby the discharge of fuel under pressure from the nozzles will cause reduced pressure in the headers to draw



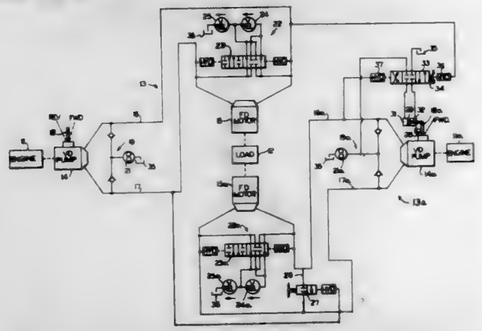
fuel through the tubes in excess of that passing through the perforations, the said fuel being entrained by fresh fuel discharged by the nozzles.

3,443,378
HYDROSTATIC SINGLE UNIT STEERING SYSTEM
Thomas I. Monroe, West Lafayette, and Raymon L. Goff, Lafayette, Ind., assignors to TRW Inc., Cleveland, Ohio, a corporation of Ohio
Filed Apr. 4, 1967, Ser. No. 628,427
Int. Cl. F15b *9/02*; F16h *41/00*; B62d *5/08*
U.S. Cl. 60—52 28 Claims



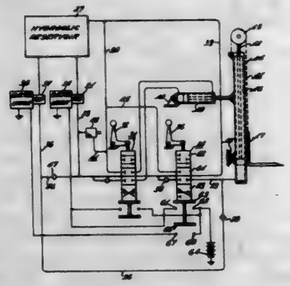
A power steering system using a balanced cylinder as a power assisting means and receiving oil from a power pump which is engine driven having a single unit hydrostatic device wherein a manual pump is combined with a linear spool valve in a single integral package, the spool valve being of either an open or closed center type. The valve is located between a hand wheel and the pump element and is operated by a torque sensing helical unit which translates the error signal or differential rotation between the hand wheel and the pumping element into axial displacement of the spool valve. The pump element comprises a gerotor gear set including an externally lobed rotor and an internally lobed gear ring. A valve plate rotatable with the rotor and the gear ring has slideably engaging control faces. The valve plate has circumferentially spaced inlet and outlet ports intersecting the radial control face so that the orbiting gear ring actually performs a valving operation as it sequentially covers and uncovers the port holes in the valve plate. The pressure generated by the engine driven pump when throttled by the spool valve displacement is directed into the pump motor unit and causes rotation of the elements.

3,443,379
DUAL HYDROSTATIC TRANSMISSION SYSTEM WITH POWER-PROPORTIONING CONTROL
Charles O. Weisenbach, Watertown, N.Y., assignor to General Signal Corporation, a corporation of New York
Filed Nov. 15, 1967, Ser. No. 683,300
Int. Cl. F16h *39/02*; F02b *61/00*
U.S. Cl. 60—52 5 Claims



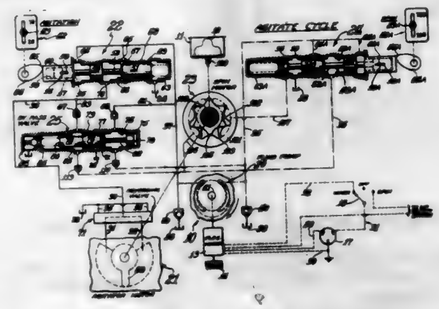
Schemes for proportioning between two prime movers the power required to drive a common load. Each prime mover is connected with the load through a hydrostatic transmission which includes a variable displacement pump. The displacement of one pump is manually controlled, while the displacement of the other is controlled automatically and in a manner that maintains a fixed relationship between the load pressures in the two circuits. In one version, the automatic control is effective in both directions of movement of the load, and in another version this control is effective in only one direction. In the latter version, the transmission having the automatic control includes a by-pass around the pump which allows the transmission to idle at times when the automatic control is inactive.

3,443,380
TWO-PUMP SYSTEM FOR LIFT CYLINDER
Arvin Karazija, Oak Forest, Ill., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Jan. 2, 1968, Ser. No. 694,921
Int. Cl. F15b *15/18*, *11/00*
U.S. Cl. 60—52 4 Claims



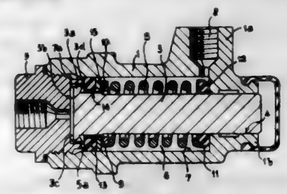
A lift ram is supplied fluid by a primary circuit having a control valve and by a secondary circuit connected directly to the lift ram through one-way valve means. A load check valve is employed in the primary circuit upstream of the control valve and the secondary circuit is connected to the primary circuit upstream of the load check valve by a bypass passage with check valve permitting flow from the secondary passage to the relief valve for the primary pump located upstream of the load check valve in the primary circuit. The need of a separate relief valve for the fluid pump of the secondary circuit is thus obviated.

3,443,381
HYDRAULIC TRANSMISSION WITH SPEED CONTROL
Herbert N. Underwood, Chicago, Ill., and Yunus E. Moochhala, Bombay, India, assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed June 26, 1967, Ser. No. 648,630
Int. Cl. F16h *39/48*
U.S. Cl. 60—53 6 Claims



A hydraulic transmission for independently driving an agitator motor and a spin motor of an automatic washing machine with control mechanism for independently controlling the speed of each by using a manually adjustable cam to position a spool valve and thereby establish the size of a variable size orifice in the pressure line to the fluid motor. A bypass valve in fluid communication with both sides of the orifice is used to maintain a predetermined flow to the fluid motor in accordance with the manual adjustment of the cam by maintaining a constant pressure drop across the orifice.

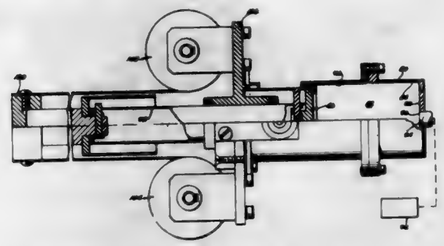
3,443,382
PRESSURE REDUCER DEVICE FOR HYDRAULIC BRAKES
Philip Sidney Baldwin, Florence, Italy, assignor of one-half to Fiat Società per Azioni, Turin, Italy
Filed Dec. 6, 1966, Ser. No. 599,536
Claims priority, application Italy, Dec. 7, 1965, 27,413/65; Apr. 30, 1966, 10,326/66
Int. Cl. F15b *3/00*; F16d *65/32*
U.S. Cl. 60—54.5 8 Claims



The braking pressure reducer for motor vehicles comprises a cylinder and a plunger-type piston having a head arranged inside of the cylinder and a stem slidable in a bore made in one of the end walls of the cylinder, a reaction spring biasing the piston towards the other end wall of the cylinder, and a sealing ring in sliding contact with the cylinder bore mounted with axial and radial play on the piston stem. The piston head is made on its surface facing the sealing ring with a circular bead having a diameter greater than that of the inner bore in the ring, whereby upon protractile stroke of the piston this bead adheres to the ring and closes the communication between

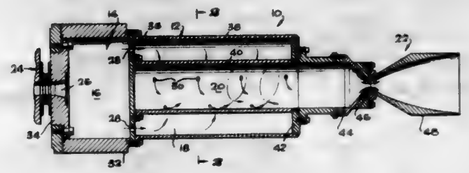
the chambers lying on the opposite sides of the piston head. The cylinder is closed at its said other end by a plug having a cylindrical axial projection the length of which is such as to held the sealing ring clear of said bead on the piston head when the device is inoperative and the piston is in its retracted end position towards the said plug.

3,443,383
FLUID FEED SYSTEM
Harry J. King, Canoga Park, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Dec. 19, 1966, Ser. No. 602,664
Int. Cl. H05h *1/00*; F03g *7/06*
U.S. Cl. 60—202 2 Claims



The disclosed invention relates to devices for discharging a fluid propellent to an ion thrustor and comprise a fluid reservoir, a piston in the reservoir and means for applying a constant force on said piston for expelling fluid at a constant pressure to the ion thrustor.

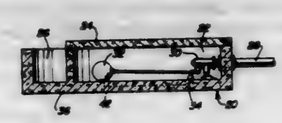
3,443,384
SWIRLING FLOW NOZZLE
James E. Webb, Administrator of the National Aeronautics and Space Administration with respect to an invention by Frank X. McKevitt, Palos Verdes Peninsula, Calif.
Filed May 17, 1967, Ser. No. 640,787
Int. Cl. F02k *1/02*, *9/00*; B05b *3/00*
U.S. Cl. 60—263 4 Claims



This disclosure relates generally to rocket engines. It teaches a method and construction for increasing the efficiency of a rocket engine by matching its exhaust gas pressure with changing ambient pressure. Essentially, a gas is introduced tangentially into the engine so as to form a vortex within the nozzle. The size of the vortex can be used to vary the effective throat area of the nozzle. The size of the vortex can be changed by varying the relative amounts of axial and/or tangential flow of gases to the nozzle.

3,443,385
MOISTURIZER FOR PLANTS
Donn H. Vollmer, 4534 Felton St., P.O. Box 16036, San Diego, Calif. 92116
Filed May 15, 1967, Ser. No. 638,466
Int. Cl. E02b *13/02*; A01g *25/00*; C23f *13/00*
U.S. Cl. 61—13 3 Claims

A method of and a device for automatically maintaining moisture in the earth below plants by controlling the flow of water to a vessel submerged below the plant, and

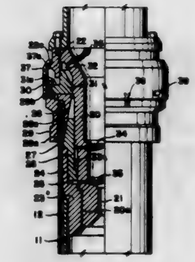


also for preventing corrosion of the valve which controls the flow of water to the vessel.

3,443,386
SAND CONSOLIDATION
Albert W. Coulter, Jr., Claude T. Copeland, and Clare H. Kucera, Tulsa, Okla., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Nov. 20, 1967, Ser. No. 684,486
Int. Cl. E02d *3/12*
U.S. Cl. 61—36 7 Claims

Loose or incompetent sands and sandy soils are consolidated with hardenable phenol-aldehyde resins modified with a novel coupling agent. The latter is provided in the form of a tertiaryaminoalkyl phenol or a derivative thereof. Preferably, the derivative is the amine salt or quaternary. Such amino phenols significantly enhance the stength of sand or soil masses treated with the resins. The preferred salt and quaternary forms of the amino phenols can be incorporated directly into phenol-aldehyde partial condensation products to provide storage stable consolidating resins with a built-in coupling function.

3,443,387
METHOD AND APPARATUS FOR DRIVING PRETENSIONED PILES
Glenn D. Johnson, Downey, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Nov. 30, 1967, Ser. No. 686,901
Int. Cl. E02d *5/14*
U.S. Cl. 61—53.7 8 Claims

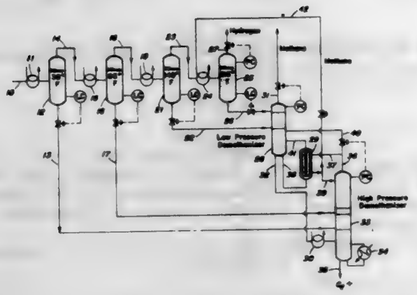


A thin, hollow shell for a piling is tensioned and stressed a predetermined amount over a driving mandrel to facilitate driving the shell without excessive damage thereto.

3,443,388
DEMETHANIZATION OF HYDROCARBONS CONDENSED FROM HYDROGEN RICH GAS
Jan Kramer, Voorschoten, and Martinus Hus, Voorburg, Netherlands, assignors to The Lummus Company, New York, N.Y., a corporation of Delaware
Filed June 16, 1967, Ser. No. 646,646
Int. Cl. F25j *3/06*; C01b *1/26*; C07c *9/04*
U.S. Cl. 62—28 11 Claims

A process for separating methane and hydrogen from a gaseous mixture of hydrocarbons wherein the gaseous mixture is cooled in a plurality of stages of successively

lower temperatures to effect condensation of a major portion of the gas. A gas primarily comprised of hydrogen is withdrawn from the last stage and the condensate from the last two stages is introduced into a low pressure demethanizer, with the lower temperature condensate being introduced as reflux. The condensate from the remaining stages and the bottoms from the low pressure demethanizer are introduced into a high pressure demethanizer. The heat requirements for the low pressure demethanizer and the cooling requirements for the high pressure demethanizer are met by passing the overhead of the latter in an indirect heat transfer relationship with the bottoms of the former.

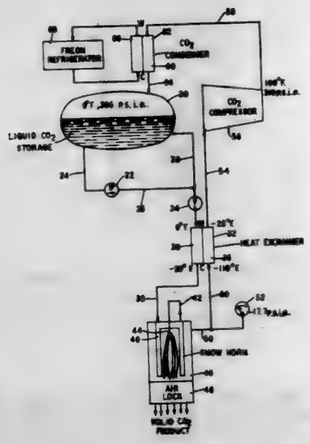


3,443,389

APPARATUS FOR THE PRODUCTION OF CARBON DIOXIDE SNOW

Palmer W. Townsend, Berkeley Heights, William B. Laird, Murray Hill, and Albert Halfon, South Somerville, N.J., assignors to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 27, 1966, Ser. No. 604,826
Int. Cl. F25j 1/02
U.S. Cl. 62—35 6 Claims



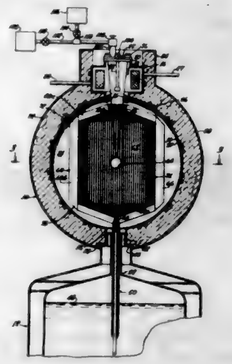
Liquid carbon dioxide is forced through the hollow portion between the walls of a double walled snow horn and then through a conduit exiting the snow horn into a nozzle which is mounted in one end of the snow horn, the snow horn being included in a snow receiving vessel. The vessel includes a rotary valve which is positioned so that the snow horn directs snow from the nozzle into the rotary valve, the valve including a plurality of compartments.

3,443,390

SPACE SIMULATOR

James E. Webb, Administrator of the National Aeronautics and Space Administration with respect to an invention of James B. Stephens, La Crescenta, Calif.

Filed Oct. 5, 1967, Ser. No. 673,227
Int. Cl. F25b 41/00; B64g 7/00; B01d 5/00
U.S. Cl. 62—55.5 8 Claims



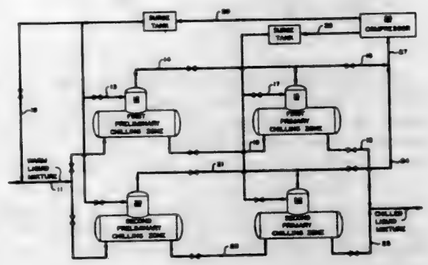
Within a vacuum chamber there is positioned a secondary wall made of thin ribbons of silver or copper arranged in the form of inwardly extending pleats or wedge fins. A good thermal conductor connects the secondary wall to a quantity of liquid helium confined within its shipping Dewar so that the secondary wall is kept cold to serve as a molecular sink or anechoic chamber for molecules.

3,443,391

WAX CRYSTALLIZATION EMPLOYING PROPANE REFRIGERANT

Joseph E. Storment, Charley S. Jones, and Norman G. Miller, Kansas City, Kans., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Sept. 26, 1966, Ser. No. 582,040
Int. Cl. B01d 9/02; C10g 43/02
U.S. Cl. 62—58 8 Claims



1. A method of chilling a liquid mixture comprising the steps of:

charging a first amount of mixture to a preliminary chilling zone;

chilling the mixture in said preliminary zone to an intermediate temperature by evaporization of a volatile component;

transferring volatile component vapors from said preliminary zone to a lower pressure primary chilling zone, thereby reducing the temperature differential between said preliminary zone and said primary zone;

transferring liquid mixture from said preliminary zone to said primary zone when said temperature differential has reached a desirable low value;

chilling the liquid in said primary zone to a desired temperature to accomplish a desired crystallization;

discharging the chilled liquid containing a crystallized component to an accumulation zone; and

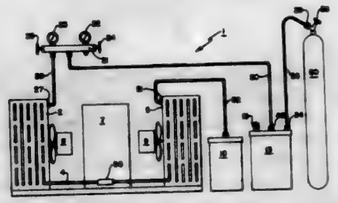
repeating the above steps in said first preliminary zone and said first primary zone.

3,443,392

PROCESS FOR RESTORATION OF BURNED OUT HERMETIC REFRIGERATION SYSTEM

William O. Alexander, 7018 Panama Drive, Hermitage, Tenn. 37076

Filed Feb. 14, 1968, Ser. No. 705,392
Int. Cl. F25b 45/00
U.S. Cl. 62—77 3 Claims



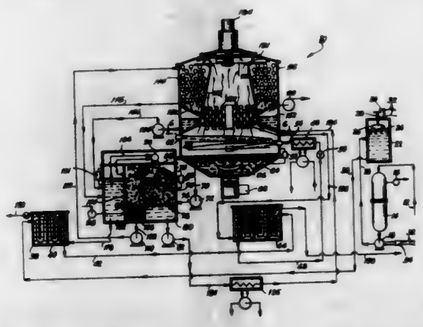
Discloses a process whereby a burned out hermetic refrigeration system may be restored to use quickly and economically through the use of a counter current flow of cleaning refrigerant.

3,443,393

TRIPLE POINT DESALINATION SYSTEM UTILIZING A SINGLE LOW PRESSURE VESSEL AND A GRAVITY SEA WATER FEED

Moise Levy Goldberg, 8 Jabotinsky St., Tel-Aviv, Israel

Filed Jan. 17, 1967, Ser. No. 609,855
Int. Cl. G02b 1/12; B01d 9/04
U.S. Cl. 62—124 15 Claims



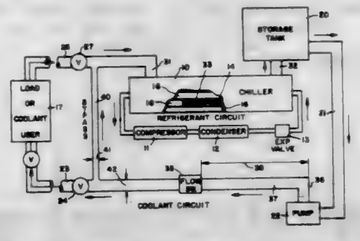
A desalination system in which sea water is cooled by successive heat exchangers and then introduced as jets into a vacuum chamber in a single low pressure vessel where at a triple sea water transformation point a portion of the sea water evaporates, a portion is frozen into ice crystals and the remainder is concentrated into brine. The ice crystals are washed with a mixture of compressed air and fresh water and thereafter melted, being used in a heat exchanger. The brine is withdrawn from the low pressure vessel and is used in heat exchangers. The vapors are cooled in a heat exchanger within the low pressure vessel, thereafter are compressed, although still at a subatmospheric pressure, and introduced into a compartment in the low pressure vessel where they contact a heat exchanger and are condensed into fresh water which is withdrawn. The incoming sea water initially is pumped to a level higher than the jets, so that it can flow by gravity through heat exchangers on its way to the jets without pumping.

3,443,394

WATER CHILLER WITH IMPROVED FREEZE-UP PROTECTION

Joseph S. Kronick, Mount Vernon, N.Y., assignor to Capitol Temptrol Corp., Mount Vernon, N.Y., a corporation of New York

Filed Aug. 23, 1967, Ser. No. 662,606
Int. Cl. F25d 17/00
U.S. Cl. 62—139 10 Claims



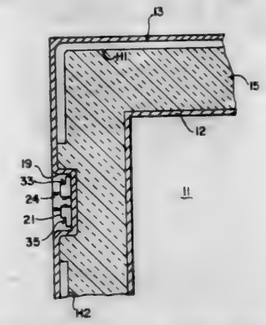
A water chiller with improved freeze-up protection device comprising a positive flow switch arranged in series in the coolant circuit to deactivate the refrigerant compressor when the coolant flow falls below a minimum level, which is constantly maintained in the absence of coolant demand by a by-pass circuit. A feature of the invention is to locate the flow switch downstream from the coolant circulator pump at least five pipe diameters from the closest pipe discontinuity on the upstream side.

3,443,395

APPARATUS FOR ELIMINATING CONDENSATION FROM THE OUTER WALLS OF REFRIGERATION ENCLOSURES

Manfred U. Schweiger, Versailles, Ky., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

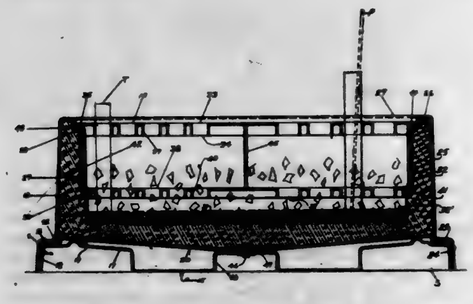
Filed Nov. 16, 1967, Ser. No. 683,554
Int. Cl. F25d 21/08
U.S. Cl. 62—140 9 Claims



Apparatus is disclosed for automatically energizing so-called anti-sweat heaters which heat the outer wall of a refrigerator to eliminate therefrom condensation which

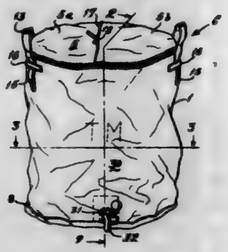
would otherwise be caused by cooling of the outer wall due to heat leakage or transfer through the refrigerator insulation. The apparatus includes a semiconductor current switching device such as an SCR for controlling the flow of electric current to the heater. A condensation sensor is provided which includes a pair of electrodes bridged by an insulating surface. The sensor is positioned so as to be cooled with the outer wall of the refrigerator. Further means are provided for energizing the semiconductor current switching device when the resistance between the sensor electrodes falls below a predetermined level. Accordingly, when the resistance between the electrodes is reduced by the condensation of moisture on the insulating surface between them, the heater is energized by the semiconductor current switching device thereby eliminating condensation from the outer wall.

3,443,396
ROTARY TEST TUBE ICE BATH
Gerald J. Zlolkowski, 693 St. Clair, Grosse Pointe, Mich. 48230, and Jan Dennis Shada, Okemos, Mich. (1692 E. Grand River, Apt. 96, East Lansing, Mich. 48823)
Filed Aug. 17, 1967, Ser. No. 661,418
Int. Cl. F25d *25/00*
U.S. Cl. 62—377 6 Claims



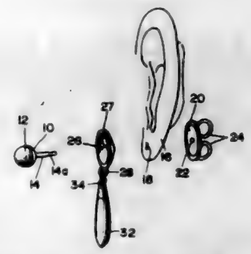
A test tube ice bath which includes a fixed base, a chambered insulated shell rotatively mounted upon the base adapted to contain a freezing slurry, and a removable apertured tube insert adapted to mount and support a plurality of test tubes in an upright position, said insert mounted on and depending from said shell and with the test tubes extending down into said slurry.

3,443,397
BARREL COOLER
Thomas A. Donovan, Oakville, and William E. Miltenberger, Glendale, Mo., assignors to Anheuser-Busch, Incorporated, St. Louis, Mo., a corporation of Missouri
Filed May 31, 1968, Ser. No. 733,677
Int. Cl. B67d *5/62*; F25d *3/02*
U.S. Cl. 62—398 11 Claims



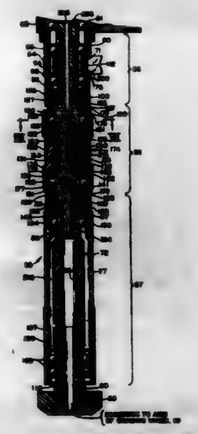
A barrel cooler comprising inner and outer containers joined together near their bottom at an area and having a space between the upstanding walls thereof for receiving a coolant, said area having an opening therethrough adapted to receive the faucet of barrel tapping apparatus, said inner container being adapted to be folded over the top of a barrel to retain the inner container in an upstanding position.

3,443,398
STUD TYPE EARRING HAVING DISHED PLATE ATTACHMENT
Forrest E. King, Jr., 435 First Parish Road, Scituate, Mass. 02066
Filed Sept. 12, 1966, Ser. No. 578,761
Int. Cl. A44c *7/00*
U.S. Cl. 63—13 2 Claims



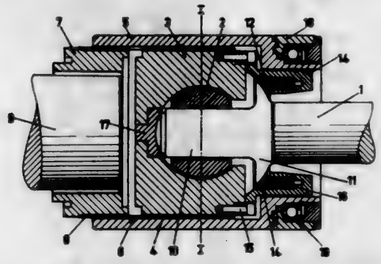
An improved earring has a dished plate with a central passage therethrough which slidably engages over the post of a stud earring with the head of the earring seating in the concave side of the plate and the smooth convex side of the plate bearing against the ear. A ring is secured at the lower edge of the plate and an ornamental drop is suspended from the ring. A retainer engages over the free end of the post to hold the earring in the ear.

3,443,399
HIGH SPEED UNIVERSAL SPINDLE FOR A GRINDING MACHINE
Joseph I. Pope, Toledo, Paul E. Rickert, Oregon, and Robert R. Wilkinson, Toledo, Ohio, assignors to Hall-Toledo Corporation, Toledo, Ohio, a corporation of Ohio
Filed Oct. 28, 1966, Ser. No. 590,251
Int. Cl. F16c *1/02*; F16d *3/00*; B24b *15/00*
U.S. Cl. 64—2 11 Claims



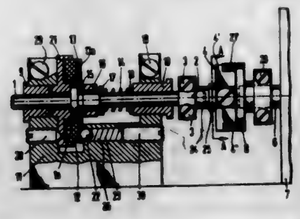
This invention relates to high speed grinding machines including the multiple spindle type, and is particularly directed to valve seat grinders in which the grinding wheel driving spindles include positively driven spaced double universal joint means which not only permit relatively great angular and/or lateral adjustment between two or more fixed pilots which may not be in exact parallelism and/or spacing, but also provides positive and unrestricted uniform high speed rotation and simultaneous eccentric gyration of the grinding wheels on said pilots.

3,443,400
UNIVERSAL COUPLING, PREFERABLY FOR ROLLING MILLS
Karl Olof Adolf Polhill, Rolf Torsten Hermansson, and Roy Erik Tore Olsson, Morgardshammar, Sweden, assignors to Morgardshammar Aktiebolag, Morgardshammar, Sweden, a Swedish joint-stock company
Filed Feb. 14, 1967, Ser. No. 615,974
Claims priority, application Sweden, Feb. 16, 1966, 1,985/66
Int. Cl. F16d *3/76*
U.S. Cl. 64—8 6 Claims



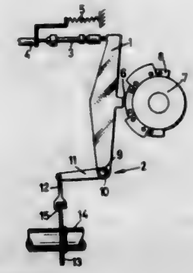
A universal coupling for torque transferring having an internally splined casing which encloses the driven hub as well as the driving spindle. The casing is axially adjustable in order to release the driven or the driving device to enable a quick change of either device.

3,443,401
COUPLING CONNECTION BETWEEN STEP-MOTOR AND CONTROL SHAFT
Gerhard Langer, Munich, Germany, assignor to Siemens Aktiengesellschaft, Munich, Germany
Filed May 5, 1967, Ser. No. 636,433
Claims priority, application Germany, May 6, 1966, S 103,674
Int. Cl. F16d *3/14*; F16h *35/18*
U.S. Cl. 64—27 5 Claims



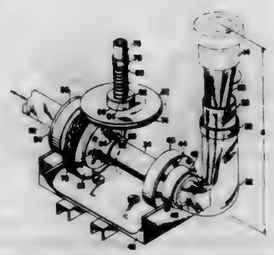
A coupling connection between the rotor of a step-motor, and a control shaft to prevent inaccurate step rotation of the control shaft. The coupling connection comprises complementary connections between the rotor and the control shaft, that function to prevent rotor oscillation or swinging that may occur at the termination of the rotational movement of the rotor associated with each step movement thereof from being transmitted to the control shaft. Therefore, any inaccuracies that may be produced by the rotor at the end of a step interval is not coupled to the control shaft, and the step movement of the control shaft is thus made more precise.

3,443,402
SHOGGING MECHANISM FOR THE GUIDE BARS OF A WARP KNITTING MACHINE
Karl Kohl, Offenbacher Str. 20, Hainstadt am Main, Germany
Filed Aug. 9, 1967, Ser. No. 659,481
Claims priority, application Germany, Aug. 26, 1966, M 70,722
Int. Cl. D04b *27/26*
U.S. Cl. 66—86 6 Claims



One group of shogging levers of a Raschel knitting machine is pivoted on a fixed portion of a shaft assembly by pattern chains, whereas another group is pivoted on an eccentrically mounted sleeve of the assembly. The sleeve is oscillated by means of a cam on the main shaft of the machine and a cam follower train so as to reciprocate the levers of the second group longitudinally. In another embodiment, the shaft assembly is rotatable and is oscillated by the cam follower train, one group of levers being coaxially pivoted on the assembly, and the other group eccentrically.

3,443,403
PNEUMATIC TAKEDOWN FOR HOSIERY MACHINES
Thomas J. Thore, Chattanooga, Tenn., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Mar. 20, 1967, Ser. No. 624,369
Int. Cl. D04b *35/00*, *11/28*
U.S. Cl. 66—149 5 Claims



Pneumatic takedown apparatus for a hosiery knitting machine is described as having an elbowed, but stationary, takedown tube that feeds a horizontally disposed tube which is rotated with the needle cylinder. Elbowing the takedown tube permits of a knitting machine with a shortened overall height; and rotating the horizontal feed tube

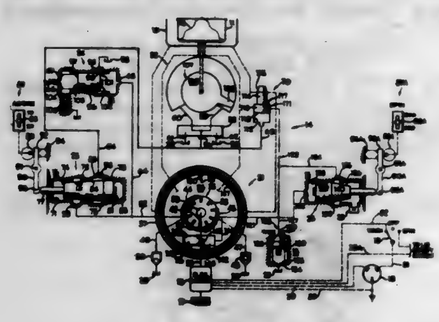
prevents stockings which are knit by the machine from being twisted into knots in the elbow of the takedown tube.

3,443,404
CIRCULAR-KNIT ELASTIC FOOT GARMENT WITH NONBINDING INSTEP
Herbert Knohl, Seneca, S.C., assignor to The Kendall Company, Walpole, Mass., a corporation of Massachusetts
Filed Sept. 19, 1967, Ser. No. 668,842
Int. Cl. D04b *11/06*
U.S. Cl. 66—178 7 Claims



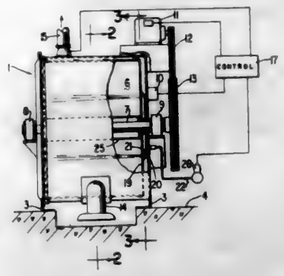
This invention is particularly concerned with circular-knit foot garments such as socks, over the calf stockings, over the knee stockings, and full length stockings, including normal streetwear stockings, support stockings and therapeutic stockings, all having an instep area of courses with gradually increased stitch size and another instep area of courses toe-ward of the first area with gradually decreased stitch size.

3,443,405
HYDROSTATIC WASHER TRANSMISSION
Herbert A. McAninich, Auburn, Ind., and Herbert N. Underwood, Chicago, Ill., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Sept. 29, 1967, Ser. No. 671,675
Int. Cl. D06f, *29/00*; F16d *33/00*
U.S. Cl. 68—23.7 12 Claims



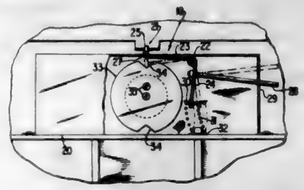
A hydraulic transmission for independently oscillating an agitator and rotating a clothes basket of an automatic washing machine including a positive displacement hydraulic pump consisting of a pumping element and a pump housing element which are relatively rotatable, one of these elements being connected to the clothes basket, the other element connected to the output shaft of an electric motor. The pump is used to provide fluid pressure to a hydraulic agitator motor for oscillation of the agitator and includes a device for selectively restricting the flow of fluid from the pump, thereby setting up a reaction torque on the pump element attached to the basket causing the basket to rotate at a speed approximately proportional to the restriction of the pump.

3,443,406
WASHING MACHINE WITH FLUID INJECTION THROUGH OPENINGS IN DRUM
Kenneth H. Wolverton, Moline, and Robert H. Hornback, Rock Island, Ill., assignors to Ametek, Inc., New York, N.Y., a corporation of Delaware
Filed Feb. 28, 1967, Ser. No. 619,471
Int. Cl. D06f *37/00*, *39/00*
U.S. Cl. 68—58 1 Claim



A washing machine having a rotatable drum with conical baffle plate thereon for a fluid, such as steam or water, from a stationary nozzle or feed pipe.

3,443,407
DOOR LATCH WITH NOTCHED CAM
Kenneth H. Wolverton, Moline, Ill., assignor to Ametek, Inc., New York, N.Y., a corporation of Delaware
Filed Aug. 22, 1967, Ser. No. 662,467
Int. Cl. D06f *37/28*, *37/42*
U.S. Cl. 68—143 7 Claims



An interlock for the casing door of a washer-extractor and having a notched disk on the end of the drum shaft, there being a latch bar on the end of a latch which is received in a notch when a pocket in the drum is lined up with the casing door. When the latch bar is received in the notch, it is moved from the path of the casing door and permits the door to open.

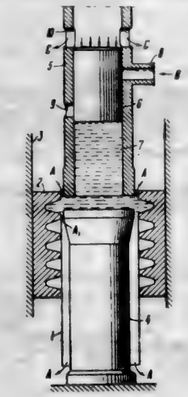
3,443,408
POWER PRESSURE SETTING WRINGER
Leroy H. Gutknecht, Hudson, Iowa, assignor to Lovell Manufacturing Company, Erie, Pa.
Filed Aug. 8, 1966, Ser. No. 570,945
Int. Cl. D06f *45/04*
U.S. Cl. 68—253 7 Claims

A power pressure setting wringer having rolls and means to maintain pressure thereon, and wherein such means are moved to pressure sustaining position of after release by operating mechanism associated with the driven



roll, the structure including manually actuated pressure release means operable at any time.

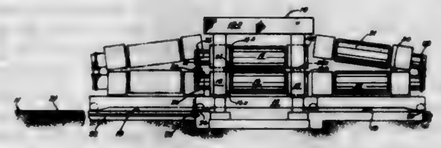
3,443,409
METHOD FOR HYDRODYNAMIC FORMING OF BELLOWS-TYPE ARTICLES AND A DEVICE FOR THEIR REALIZATION
Jury Georgievich Matsukin, Grebenikovskaja St. 5, Kharkov, U.S.S.R.
Filed Mar. 6, 1964, Ser. No. 349,852
Int. Cl. B21d *26/02*, *28/18*, *22/10*
U.S. Cl. 72—56 7 Claims



1. A method of forming bellows-type shells from tubular metal blanks, comprising positioning such a blank in a die having an internal configuration of a shape to be imparted to the blank, delimiting a pressure liquid-accommodating chamber having axially spaced horizontal surfaces and bounded in part by said die, feeding liquid into such chamber while permitting escape of a portion of such liquid from the lower end of such chamber so that such chamber is in unsealed condition, continuing the feeding of liquid into the chamber at a rate sufficient to maintain liquid therein over an axial extent at least co-extensive with the length of an initial portion of the blank to be deformed, and suddenly applying kinetic energy to the liquid within the chamber to hydraulically close such chamber and deform such initial portion of the blank.

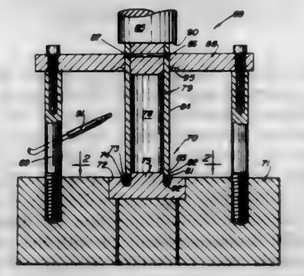
3,443,410
METHOD OF AND APPARATUS FOR CHANGING ROLLS IN A ROLLING MILL
Andrew J. Beck, Cheshire, Conn., assignor to Textron, Inc., Providence, R.I., a corporation of Rhode Island
Filed Aug. 16, 1966, Ser. No. 572,780
Int. Cl. B21b *31/08*
U.S. Cl. 72—239 11 Claims

There is provided a method of and apparatus for changing at least one of a pair of cooperating work rolls in a rolling mill so as to clear the work in the pass line between the rolls so that passage of the work in this line is not interrupted during removal of the first-mentioned one of the rolls, which includes pivoting of one of the



rolls during roll changing to effect the aforementioned clearance. The apparatus includes means to move this roll on its pivotal axis, and means to remove the first-mentioned roll from the mill on supporting means.

3,443,411
METHOD AND APPARATUS FOR EXTRUSION FORMING OF CYLINDRICAL METAL CONTAINERS
Myron L. Anthony, La Grange, Ill., assignor of twenty-three and seventy-five hundredths percent to George W. Butler and Gladys A. Butler, trustees under George W. Butler's trust agreement dated July 19, 1966, twenty-three and seventy-five hundredths percent to Gladys A. Butler and George W. Butler, trustees under Gladys A. Butler's trust agreement dated July 19, 1966, and five percent each to Thomas E. Dora, and Norman F. Klocker
Filed Jan. 19, 1967, Ser. No. 610,377
Int. Cl. B21c *23/18*, *35/00*
U.S. Cl. 72—267 21 Claims

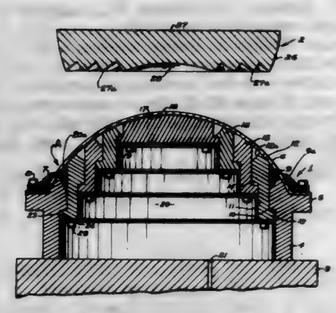


Method.—A method for extrusion-forming a thin-wall cylindrical metal can body of predetermined cross-sectional configuration and dimensions in which a ductile metal blank of ring-like configuration is extruded through an annular extrusion orifice formed between two annular mating die members, the die members being continuously guided, during extrusion, at a point immediately adjacent to but radially displaced from, the extrusion orifice. The flow path for the ductile metal is divergent toward the extrusion orifice.

Apparatus.—An extrusion apparatus for extrusion-forming of a thin-wall cylindrical metal can body from a ring-like ductile metal blank, including two relatively movable annular mating die members for extruding the metal of the blank through an annular extrusion orifice formed between two adjacent extrusion walls of the die members; the two die members are maintained in accurate alignment with each other by direct interfitting contact between two guide walls of the die members that are immediately adjacent to but radially displaced from

the extrusion orifice. The configuration of the die members is such that the flow path for the ductile metal, along the die surfaces, is a divergent path and preferably a curved divergent path. A relief channel is provided in the extrusion wall of one die member, immediately beyond the extrusion orifice, to limit the axial length of the orifice and to relieve friction drag while maintaining continuous control of the extruded can body. One of the extrusion walls may be of stepped configuration to afford a thick flange on the extruded can body. The metal blank may have a thin membrane across its center, for a two-piece can construction; this membrane fits between mating conical or spherical guide surfaces on two parts of one of the die members.

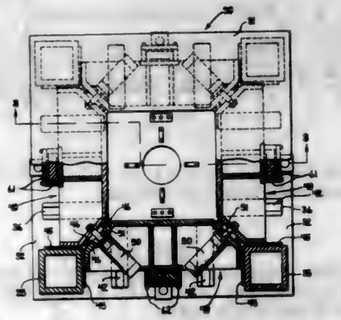
3,443,412
CONVOLUTING DEVICE FOR FORMING CONVOLUTIONS AND THE LIKE
James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Raymond E. Michel, Minneapolis, and Dallas E. Nelson, St. Paul, Minn.
Filed May 17, 1967, Ser. No. 640,458
Int. Cl. B21d *22/10, 5/02;* **B21j** *7/02*
U.S. Cl. 72—354 **3 Claims**



This disclosure relates to a punch and die device for forming a series of convolutions in thin-gauge metal hemispheres without effecting a stretching of the stock metal. The device includes an opposed punch and die mechanism having grooved working surfaces which mate with the hemisphere sandwiched therebetween. The punch is formed of telescoping segments which are extended to an operative hemispheric configuration by pneumatic pressure. The die is coaxially aligned with the punch and extends in a single plane so that the hemisphere may be sandwiched between the working surfaces with the segments of punch being retracted progressively from the center, and the convolutions progressively formed as the working surfaces are progressively displaced toward each other. Since the blank is of a hemispheric configuration, the convolutions will be formed without effecting a stretching or drawing of the metal, thus the hemisphere is "crushed" or driven toward a planar configuration in the formation of the convoluted diaphragm.

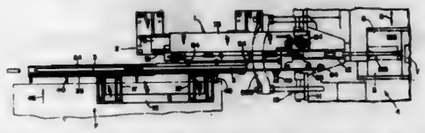
3,443,413
EXPANDER APPARATUS
Ralph E. Roper, Indianapolis, Ind., assignor to Wallace Expanding Machines, Inc., Indianapolis, Ind., a corporation of Indiana
Filed June 7, 1967, Ser. No. 644,250
Int. Cl. B21j *7/16;* **B21d** *31/00, 41/00*
U.S. Cl. 72—399 **9 Claims**

Expander apparatus including outwardly expandable inner dies and outer dies positioned around the inner dies. Outer die carriers are connected to one another in a ring by fluid cylinders which retract to move the outer die carries inwardly on tracks to forming position. The outer die carriers are locked in the forming position by block-



ing members which are slidably mounted on the outer die carriers and are projected by fluid cylinders into recesses in the frame when the outer die carriers are in forming position.

3,443,414
STOCK FEED MECHANISM
Albert R. Kull, Beachwood, and Warner C. Logan, Timberlake, Ohio, assignors to The Ajax Manufacturing Company, Euclid, Ohio, a corporation of Ohio
Filed Oct. 21, 1965, Ser. No. 499,921
Int. Cl. B21d *43/10;* **B65g** *47/00*
U.S. Cl. 72—422 **19 Claims**

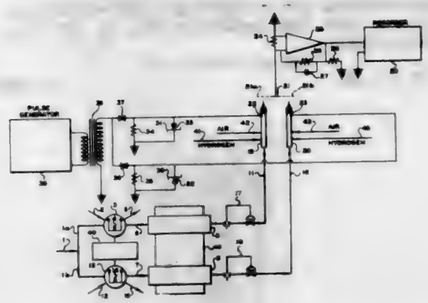


A forging machine including a stock feed mechanism for pushing elongated stock against a stop gauge in a loading station including a single stroke pusher which moves the stock longitudinally of itself along a trough against the gauge stop, the pusher being driven by a two pressure pneumatic motor moving the stock initially at high pressure and holding the stock at low pressure in the loading position until gripped by the transfer mechanism of the forging machine.

3,443,415
DIFFERENTIAL FLAME IONIZATION CHROMATOGRAPHIC ANALYSIS
Edwin K. Clardy, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Sept. 9, 1966, Ser. No. 578,386
Int. Cl. G01n *31/08*
U.S. Cl. 73—23.1 **12 Claims**

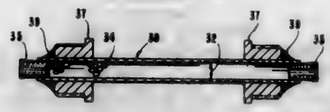
In an apparatus and method for analysis of fluids, a sample to be analyzed and a reference fluid are simultaneously introduced into separate chromatographic columns, then submitted to examination in separate flame ionization detectors which are electrically arranged so as

to provide an output representative of the differential in the ionization of the sample and reference fluids, the level



of current through the ionization detectors being variable in such a way as to control the base level of the differential indication.

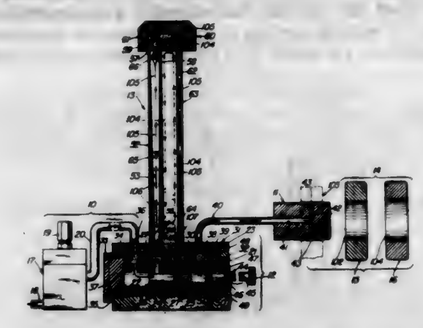
3,443,416
MICROPACKED COLUMN FOR A CHROMATOGRAPHIC SYSTEM
James E. Webb, Administrator of the National Aeronautics and Space Administration with respect to an invention of William F. Wilhite, Tujunga, Calif.
Filed Sept. 9, 1966, Ser. No. 578,926
Int. Cl. G01n *31/08*
U.S. Cl. 73—23.1 **6 Claims**



A micropacked column for a chromatographic system is provided with the column's internal diameter in the range of 0.25 mm., being packed with highly uniform particles, varying in ranges from 10 to 80 microns. Within any given column, the difference in size between particles is within 4 microns.

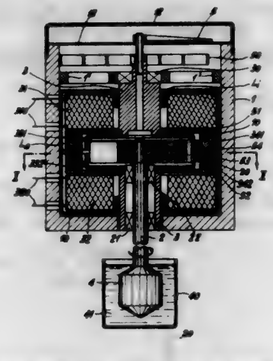
3,443,417
FLUID GAGE APPARATUS OF THE ROTAMETER TYPE
Franklin Meyer, Jr., Forestdale, R.I., assignor to The Taft-Peirce Manufacturing Company, Woonsocket, R.I., a corporation of Rhode Island
Filed Sept. 15, 1966, Ser. No. 579,566
Int. Cl. G01m *3/02*
U.S. Cl. 73—37.9 **6 Claims**

Fluid gage apparatus for gaging and comparing dimensions of workpieces includes a controllable pressure source of pressurized fluid, a gaging member equipped with nozzle means and a Venturi means. The Venturi means has a pair of through flow passage sections each providing one of a pair of constrictions having an entrance end and a discharge end. A pair of separate ducts are connected directly, respectively, to a side of one of the constrictions between the entrance end and discharge end of the latter. A rotameter with a float and scale has a longitudinal bore linearly tapered and is connected to the ducts. The rotameter is so connected to the ducts that a diversionary flow up through the rotameter is a fraction of the pressurized fluid flowing in the system. The gaging member is placed



in a workpiece and the rotameter will give an indication of cooperation with a range of said scale.

3,443,418
BRAKING TORQUE SENSING MEANS
Kurt Tschudin, Zurich, Switzerland, assignor to Contraves A.G., Zurich, Switzerland
Filed Sept. 30, 1966, Ser. No. 583,406
Int. Cl. G01n *11/00*
U.S. Cl. 73—59 **10 Claims**

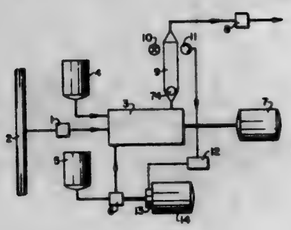


A device for measuring the braking torque applied by a medium, and thereby measure the viscosity of the medium. A rotor and a stator are linked through a magnetic field established by a stationary coil. A sensing head is secured to the rotor and measures the braking torque which may be applied when the sensing head is immersed in the fluid which is the subject of the viscosity measurement. The stator is displaced against the action of a spring, as a function of the braking moment. An indicator attached to the stator rotates with it and indicates directly the braking moment which may be calibrated in terms of viscosity units. Power leads applying current to the stationary coil are entirely fixed in space.

3,443,419
METHOD AND APPARATUS FOR MEASURING THE MATURITY OF VISCOSE
Willem Gruitroy, Arnhem, and Dirk J. Raaben, Dieren, Netherlands, assignors to American Enka Corporation, Enka, N.C., a corporation of Delaware
Filed Oct. 18, 1966, Ser. No. 587,492
Claims priority, application Netherlands, Oct. 27, 1965, 6513877
Int. Cl. G01n *11/00*
U.S. Cl. 73—64.1 **6 Claims**

A method of measuring the maturity of viscose that includes (1) metering viscose and coagulant to a mixer,

(2) mixing the viscose to form a liquid mixture, (3) measuring the viscosity of the mixture, (4) producing a signal when the viscosity has exceeded a predetermined value, (5) varying the rate at which viscose or coagulant is metered to the mixer in a programmed manner, until



the viscose coagulates, and the viscosity exceeds the predetermined value, and (6) using the rate varied at the moment the signal is produced as a measure of the maturity of the viscose; and apparatus for effecting this method.

3,443,420

IRRIGATION GAUGE

Walter C. McMahan, Rte. 2, Box 2115, Escondido, Calif. 92025

Filed May 19, 1967, Ser. No. 639,812
Int. Cl. G01f *23/02*
U.S. Cl. 73—73 13 Claims



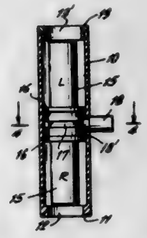
The level of water A in the gauge corresponds to the moisture content of surrounding ground. After irrigation or significant rainfall, the gauge is filled. Thereafter, it is subjected to the same forces of evaporation that affect the leaf surfaces of growing crops, thus reducing the moisture content of the surrounding ground. A cup C traps trace amounts of water that normally do not affect soil moisture content. A wick D is exposed to be subjected to ambient air conditions of relative humidity, wind, etc. One side of the gauge is painted as at E to assist moisture condensation for compensation purposes. A sildable indicator F signals the necessity of irrigation.

3,443,421

DISPOSABLE TONOMETERS

Adolph Posner, 425 E. 51st St., New York, N.Y. 10022, and Richard Inglima, 2940 Ocean Parkway, Brooklyn, N.Y. 11235

Continuation-in-part of application Ser. No. 453,604, May 6, 1965. This application May 10, 1967, Ser. No. 655,255
Int. Cl. A61b *9/00*
U.S. Cl. 73—80 11 Claims



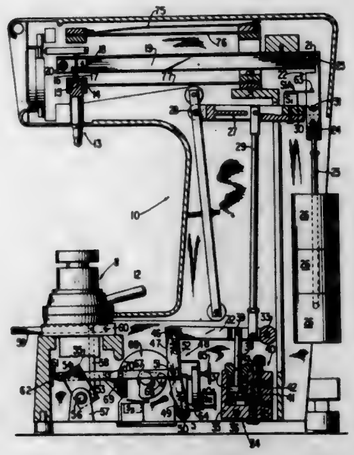
A simple, inexpensive disposable tonometer is provided by means of which screening programs can be readily and effectively carried out on large groups of population segments for determining the existence of glaucoma or incipient glaucoma. The tonometer itself comprises a cylindrical rod which has a hub intermediate its ends and this tonometer is suitable for use in a hollow cylindrical container having at least one open end with closure means which will permit the insertion of the tonometer within the cylinder and yet prevent the tonometer after it has been inserted from exiting in its entirety from within the cylinder.

3,443,422

TESTING MACHINE

Roland J. Herzberg, Davenport, Iowa, assignor to Ametek, Inc., New York, N.Y., a corporation of Delaware

Filed Oct. 4, 1965, Ser. No. 492,744
Int. Cl. G01n *3/48*
U.S. Cl. 73—81 2 Claims



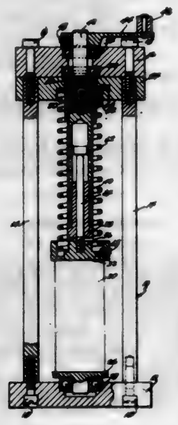
A hardness testing machine in which the major load will remain constant and be independent of the depth of penetration of the indenter in succeeding operations.

3,443,423

APPARATUS FOR TESTING THE COMPRESSIVE STRENGTH OF SOIL SPECIMENS

Roberto Edgar Lou Ma, 15C., 11—28 Zona 10, Guatemala, City, Guatemala

Filed Mar. 14, 1966, Ser. No. 535,652
Int. Cl. G01n *3/08*
U.S. Cl. 73—84 2 Claims



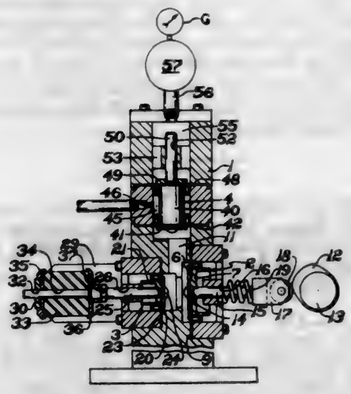
Apparatus for testing compressive strengths of materials by inducing structural failure to a cylindrical soil specimen through an application of a gradually increasing compressive axial load, and at the same time measuring the corresponding axial deformation caused to said specimen at successive intervals of increasing load.

3,443,424

FATIGUE TESTING APPARATUS

Alfonso W. Mehrbrodt, Broadview Heights, and Nicholas M. Trivisonno, Mayfield Heights, Ohio, assignors to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

Filed Jan. 16, 1967, Ser. No. 609,550
Int. Cl. G01n *3/32*
U.S. Cl. 73—92 7 Claims



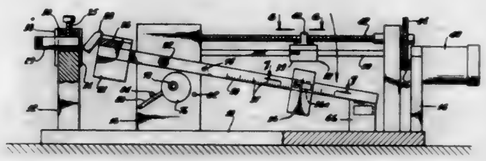
An apparatus for testing elastomeric specimens of material by operating a cyclic drive input piston on a constant volume hydraulic chamber which in turn transfers a preselected cyclic constant stress force onto a test specimen with the apparatus compensating for changes in characteristics within the specimen.

3,443,425

SHEAR TESTING MACHINE

William H. Hunter, Torrance, and George J. Kennedy, Granada Hills, Calif., assignors to Max Factor & Co., Hollywood, Calif., a corporation of Delaware

Filed Apr. 19, 1967, Ser. No. 632,005
Int. Cl. G01n *3/24*
U.S. Cl. 73—101 5 Claims



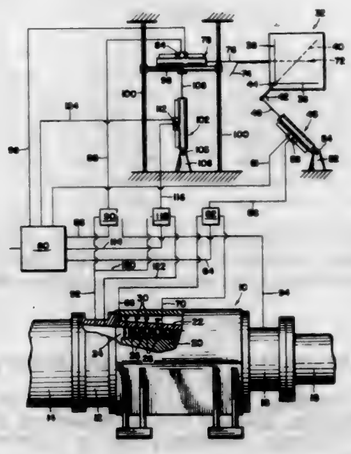
A mechanized apparatus especially adapted to test the shear strength of different materials, such as lipstick which includes a counterbalanced lever having, at one end, a shear block which bears against the material being tested and remote from the block a slidable counterweight movable over a graduated scale. When the slidable counterweight is moved to a position which causes pressure on the shear block to break the material a precise indication is provided on the graduated scale of the relative shear strength of the material.

3,443,426

MACHINE PERFORMANCE INDICATING APPARATUS

Lee K. Austin, Painted Post, N.Y., and Wilfred G. Mueller, Wayne, N.J., assignors to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey

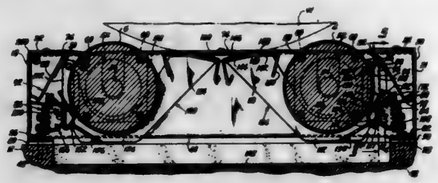
Filed Aug. 8, 1966, Ser. No. 570,878
Int. Cl. G01m *15/00*
U.S. Cl. 73—116 14 Claims



A machine performance indicating apparatus comprising a viewing area on which the actual performance of a fluid process machine is shown relative to a predetermined performance of the machine. The actual perform-

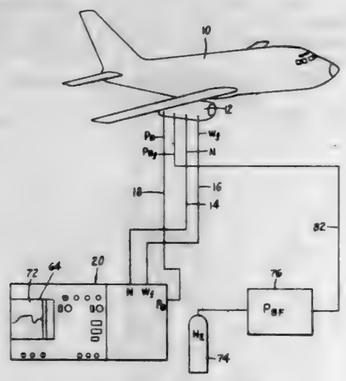
ance is depicted by a point of light movable relative to a light tube which is itself movable to depict different predetermined performances of the machine.

3,443,427
ROLL BRAKE AND VEHICLE WHEEL LIFT FOR CHASSIS DYNAMOMETERS
Edwin L. Cline, Pasadena, Calif., assignor to Clayton Manufacturing Company, El Monte, Calif., a corporation of California
Filed May 6, 1965, Ser. No. 453,611
Int. Cl. G01m *15/00*
U.S. Cl. 73—117 18 Claims



A roll brake and vehicle wheel lift device for applying a braking force to hold the rolls of a chassis dynamometer against rotation while substantially simultaneously lifting the vehicle wheels out of engagement therewith.

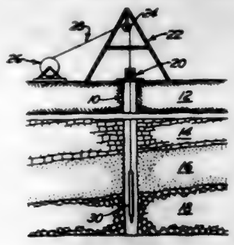
3,443,428
FUEL CONTROL TESTING DEVICE
William F. Carlin III, Springfield, Mass., and Albert Blatter, Bloomfield, and Albert T. Reiff, Jr., Simsbury, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Oct. 3, 1966, Ser. No. 583,595
Int. Cl. G01l *19/00*
U.S. Cl. 73—117.3 14 Claims



A means for monitoring the performance of a gas turbine engine fuel control to determine the effects of fuel control performance on related engine system conditions.

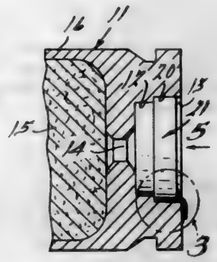
3,443,429
APPARATUS FOR WELL TREATMENT AND MEASUREMENT
Paul L. Terwilliger, Fox Chapel, and Francis M. Smith, Gibsonia, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
Filed Jan. 9, 1967, Ser. No. 608,134
Int. Cl. E21b *49/00*
U.S. Cl. 73—152 10 Claims

Apparatus is provided to take continuous temperature traverses through a well with means to record the temperatures at the surface. Thermocouple wires of long length are placed through a long length of Monel tubing with the aid of a Teflon coating on the thermocouple pair,



and this combination permits the ease of a wire line operation. The invention encompasses measuring other downhole phenomena.

3,443,430
CARTRIDGE FOR MEASURING CHAMBER PRESSURE
Michael W. York, Ypsilanti, Mich. (1200 S. Arlington Ridge Road, Apt. 507, Arlington, Va. 22202), and Walter A. Hackler, Ann Arbor, Mich.; said Hackler assignor to said York
Filed Oct. 5, 1966, Ser. No. 584,485
Int. Cl. G01l *5/14*
U.S. Cl. 73—167 10 Claims

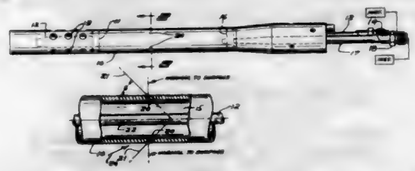


A system for measuring pressures in a gun is presented that incorporates a pressure sensitive capacitance element that is mounted on a cartridge casing so that it is compressed by pressures built up within the cartridge casing when the gun is fired. This capacitance element is deformed after it is exposed to pressures generated in the gun barrel when the gun is fired. The capacitance of this deformed pressure sensitive element can then be measured by a suitable measuring instrument. Through proper calibration, this instrument can give a reading in force per unit area, such as pounds per square inch, that the casing was exposed to upon firing.

3,443,431
STATIC PRESSURE SENSING DEVICE
Floyd W. Hagen, Minneapolis, Minn., assignor to Rosemount Engineering Company, Minneapolis, Minn., a corporation of Minnesota
Filed July 6, 1967, Ser. No. 651,472
Int. Cl. G01c *21/00*
U.S. Cl. 73—178 10 Claims

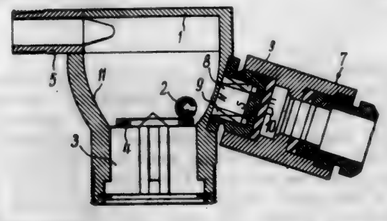
A static pressure measuring device such as a tube or probe for measuring static pressure in an aircraft wherein the static pressure measurement is compensated for across a wide range of angle of attack, and particularly at high angles of attack which are commonly encountered in present day aircraft. The static pressure apertures are drilled into the static tube and are drilled so that their axes are

inclined forwardly from a position normal to the surface of the static tube itself. Two forms of the invention are shown. One form of the probe has two static pressure apertures, one at the top of the probe and one at the bottom,



and the other form is shown with a plurality of static apertures angularly spaced on the periphery of the probe. In each instance, the axes of the apertures are inclined forwardly from a plane normal to the surface of the probe itself.

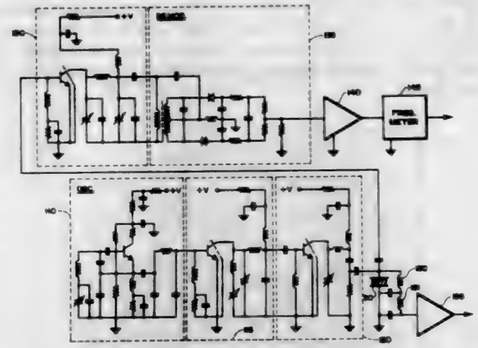
3,443,432
FLOWMETER
Leonid Nikolaevich Shonin, Leninsky prospekt, 68/10, kv. 58; Jury Sergeevich Konoplev, ulitsa Kots jubinskogo, 3, korpus 2, kv. 13; Jury Alexandrovich Komarov, ulitsa Matrosskaya Tishina, 19, kv. 62; Igor Nikolaevich Ivanov, ulitsa Generala Ermolova, 2, kv. 79; Mikhail Danilovich Silin, ulitsa Udaltsova, 49; Nina Petrovna Veyalis, Shmidtovsky proezd, 5; and Vera Borisovna Karpinskaya Astrakhanisky pereulok, 18, kv. I, all of Moscow, U.S.S.R.
Filed Mar. 22, 1967, Ser. No. 625,157
Claims priority, application U.S.S.R., Mar. 30, 1966, 1,065,760
Int. Cl. G01f *1/00*
U.S. Cl. 73—194 7 Claims



A flowmeter having a hollow non-magnetic casing for the flow of a fluid therethrough under a swirling motion with a free magnetic ball in the casing for undergoing travel in the swirling flow, the casing having an interior wall along which the ball travels under the action of the swirling fluid, said wall being a surface of rotation whose diameter diminishes gradually and continuously in the direction of flow. A signal pickup device is installed outside the casing in the path of travel of the ball for sensing passage of the ball therepast and for producing signals in response thereto having a frequency corresponding to the mass rate of fluid passing through the casing.

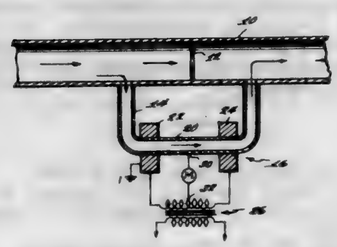
3,443,433
FLOWMETER
Max D. Liston, La Habra, Cedric H. Beebe, Fullerton, and John T. Woolhouse, Covina, Calif., assignors to Beckman Instruments, Inc., a corporation of California
Filed June 28, 1965, Ser. No. 467,555
Int. Cl. G01f *1/00*
U.S. Cl. 73—194 10 Claims

An ultrasonic flowmeter using a single crystal transducer which receives driving signals from an oscillator simultaneously with reflected signals from particles in the flow stream thereby providing a carrier signal modulated by a Doppler shifted frequency signal indicative of the velocity of fluid flow. The transducer comprises a piezoelectric crystal from which piezoelectric signals indicative of fluid pressure are derived. In one embodiment, a synchronous demodulator is employed to detect the Doppler shift of the reflected signal. In another embodiment, the demodulator is of the ratio detector type. In



both embodiments, the need for switching the transducer from the oscillator to a receiving amplifier is obviated. This arrangement is ideal for blood flowmeters as only one transducer is required in the vascular catheter.

3,443,434
FLUID FLOW MEASURING APPARATUS
William C. Baker, James M. Benson, and Charles E. Hawk, Hampton, Va., assignors, by mesne assignments, to Teledyne, Inc., Los Angeles, Calif., a corporation of Delaware
Filed Mar. 30, 1967, Ser. No. 627,230
Int. Cl. G01f *1/00*
U.S. Cl. 73—202 9 Claims

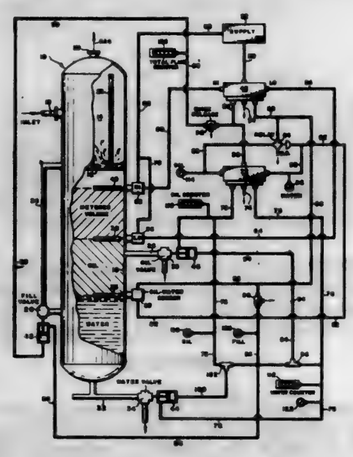


Apparatus for measuring the flow of fluid through a main supply line which has a head element therein to develop a pressure drop. A shunt fluid flow path bypasses this element. The shunt path includes a conduit at least a portion of which is electrically and thermally conductive, the conductive portion having one or more thermoelectric devices positioned therealong. Heating current is passed through the conductive conduit portion, and the temperature gradient caused by fluid flow through the heated conduit is sensed by the thermoelectric devices to provide an indication of mass flow substantially independent of pressure and temperature.

3,443,435
METERING APPARATUS
Norman A. Nelson, Houston, Tex.
Filed Sept. 10, 1965, Ser. No. 486,298
Int. Cl. G01f *13/00, 23/22, 23/06*
U.S. Cl. 73—224 10 Claims

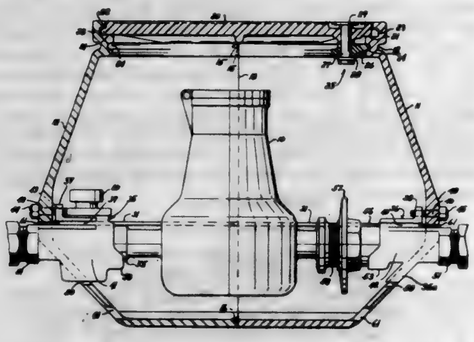
Apparatus for metering of immiscible liquids comprising a vessel having an inlet through which liquids may flow into the vessel for separation therein into upper and lower portions, and upper and lower outlets through which the upper and lower portions may be separately

discharged. Separate valves are provided for controlling the flow of liquid through the inlet and each of the outlets and control means is provided for closing the inlet when the liquid in the vessel reaches a predetermined level and for maintaining the inlet closed during the outflow of liquid from the vessel. Means is also provided for allowing the discharge of the immiscible liquids upon the accumulation of predetermined amounts of the liquids in the vessel and for separately metering the discharge of each liquid.



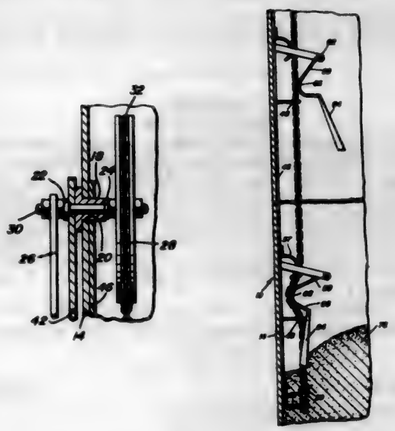
The system of the invention includes the step-by-step operation of the apparatus by which the level of the liquid in the vessel is maintained by opening of the inlet, and whereby each of the immiscible liquids is separately discharged through the outlets, and may also include the maintaining of the inlet closed during the outflow of liquid from the vessel, and the separate metering of each of the liquids discharged.

3,443,436
METER HOUSING STRUCTURE
Leonard S. Meyer, Columbia, S.C., assignor to F. B. Leopold Company, Inc., Zelienople, Pa., a corporation of Delaware
Filed July 11, 1966, Ser. No. 564,441
Int. Cl. G01f *15/14*
U.S. Cl. 73—273 **8 Claims**



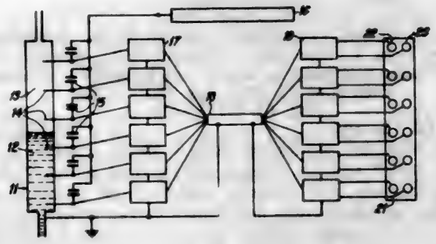
Meter housing comprises vertically split identical housing sections formed, for example, from reinforced plastic materials. A transversely extending ring-shaped structurally strong yoke member fits within the housing sections providing support for the meter and heater fittings and rigidly locking the housing sections together. The meter supporting fittings are grooved to fit on the yoke, being provided with fluid flow passages extending beneath the yoke and upward extensions through which fasteners extend which serve the purpose of locking all parts together.

3,443,437
GRAIN BIN FILL GAUGE WITH PADDLE ACTUATORS
Albert J. Skalka, Deweese, Nebr. 68934
Filed Feb. 16, 1967, Ser. No. 616,517
Int. Cl. G01f *23/00*
U.S. Cl. 73—290 **4 Claims**

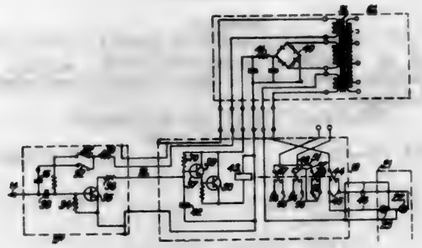


An assemblage for use in conjunction with a grain bin and operable to render a visual indication of the amount of grain within the bin and consisting of a plurality of pivotally supported paddle members disposed at spaced elevations within the bin and adapted to be pivoted from inactive positions to active positions in response to the level of the grain within the bin being elevated to the levels of the paddles, the grain bin fill gauge including indicating means operative to vary the indication given thereby as the level of grain within the bin is raised or lowered past the paddles.

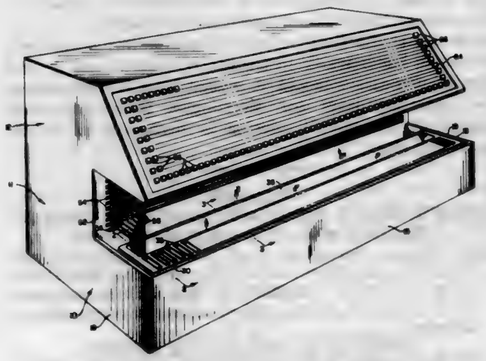
3,443,438
FLUID INDICATING APPARATUS
Robert Edgar Martin, Meads 19 Elles Ave., Merrow, near Guildford, Surrey, England, Edmond Francis Hasler, 75 Oakhill Road, Ashstead, Surrey, England, and James Nigel Prewett, 17 Elles Ave., Merrow, near Guildford, Surrey, England
Filed Feb. 10, 1967, Ser. No. 615,221
Int. Cl. G01f *23/26*
U.S. Cl. 73—304 **13 Claims**



In fluid level indicating apparatus having sensors at a number of different levels, failure indicating means are provided which operate an alarm or the like if an indication is obtained of a denser fluid above the level of a less dense fluid, e.g., if water is sensed above steam in a boiler.



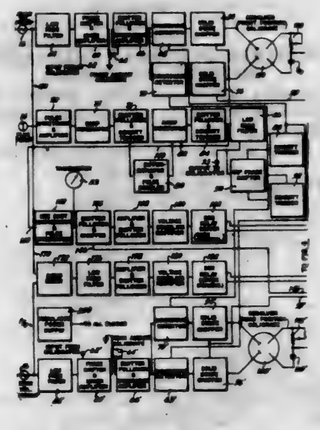
3,443,439
AUTOMATIC SAMPLER
Edgardo A. Cruz, 10307 Douglas Ave., Silver Spring, Md. 20902
Filed Dec. 5, 1967, Ser. No. 688,196
Int. Cl. G01n *1/10*
U.S. Cl. 73—423 **7 Claims**



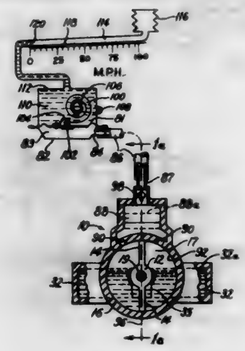
An automatic sampling apparatus for large numbers of fluid specimens permitting the selective withdrawal of a plurality of samples from a single specimen to be subjected to a plurality of different tests or the simultaneous withdrawal of a sample from a plurality of specimens, each of which is to be subjected to a different test. A plurality of sampling devices are mounted for transverse movement with respect to a specimen support and to each other. The specimen support is movable relative to the sampling device to and from a sampling position.

3,443,440
ASSEMBLY BALANCER
Richard E. Porter, Columbus, Ohio, assignor to Abex Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 21, 1965, Ser. No. 449,847
Int. Cl. G01m *1/16*
U.S. Cl. 73—462 **7 Claims**

Apparatus for determining the unbalance of a rotating assembly, e.g. the crankshaft of an internal combustion engine. The apparatus includes two vibration transducers attached to the assembly in two correction planes and a speed signal generator, e.g. a spark plug pickup. The transducer signals are gated by pairs of synchronous detectors controlled by the speed signal so that the synchronous detector outputs correspond only to the frequency crankshaft rotation. A circuit connected to the detectors produces a rotor unbalance signal having an amplitude corresponding to the amount of rotor unbalance and a phase corresponding to the position of rotor unbalance. "Amount" and "position" meters indicate these amounts automatically.



3,443,441
PRESSURE GENERATOR DEVICE
Robert H. Thorner, 8750–F. W. Chicago Blvd., Detroit, Mich. 48204
Application Apr. 8, 1963, Ser. No. 271,296, now Patent No. 3,295,376, dated Jan. 3, 1967, which is a continuation-in-part of application Ser. No. 683,318, Sept. 11, 1957. Divided and this application Feb. 10, 1966, Ser. No. 526,582
Int. Cl. G01p *3/26*
U.S. Cl. 73—502 **24 Claims**



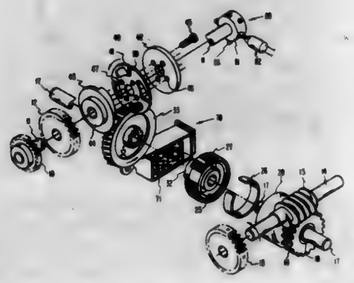
The invention disclosed herein comprises a pressure generator including rotary means to produce an air pressure varying as a function of the rotary speed thereof. One form of pressure generator includes centrifugal-liquid pumping means having means to convert the liquid pressure produced thereby to air pressure which is hydraulically sealed and trapped and may be transmitted

to any remote point to operate a sa speed governor or speed-indicator, for example. Air venting means are provided (without using valves) to enable the trapped air to vent to the atmosphere when the device is at rest, such a seach time the rotary device is stopped; in this manner, the trapped air is independent of ambient air pressure and temperature variations.

3,443,442
SELECTIVELY OPERABLE INTERMITTENT MOTION APPARATUS

Jess J. Schwelbs, Rochester, Minn., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed June 21, 1967, Ser. No. 647,721
Int. Cl. F16h 27/10
U.S. Cl. 74—1.5 11 Claims

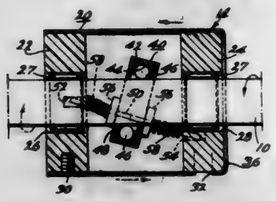


An input shaft rotating at a constant speed rotates an input drum. The rotating drum winds a spiral spring through a friction shoe connected to the outer convolution of the spring. The inner end of the spring is connected to the hub of an incrementing wheel. Although the incrementing wheel is urged by the spring to rotate, it moves under control of an escape wheel.

3,443,443
TRANSMISSION MECHANISM

Thomas E. Spence, Radnor, Pa., assignor to SKF Industries, Inc., King of Prussia, Pa., a corporation of Delaware

Filed Jan. 30, 1967, Ser. No. 612,443
Int. Cl. F16h 21/16
U.S. Cl. 74—25 9 Claims

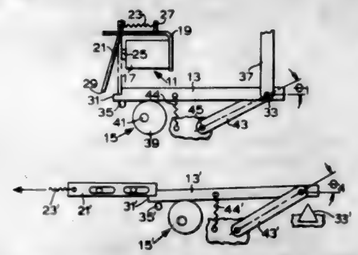


A transmission mechanism for converting rotary motion of a shaft to linear motion of a member mounted on the shaft, the member mounted on the shaft including at least one control bearing assembly having a plurality of balls in direct contact with the shaft and in operation are free to rotate on whatever axis develops as a result of the shaft and ball contact. There is a diametral clearance between the complement of balls and shaft outer surface so that the angular position of the bearing and shaft may be selectively varied to vary the direction and rate of linear movement of the member mounted on the shaft.

3,443,444
ACTUATOR MECHANISM

Harold M. Frederick, Birmingham, Mich., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed June 7, 1967, Ser. No. 644,287
Int. Cl. F16h 25/08
U.S. Cl. 74—54 6 Claims

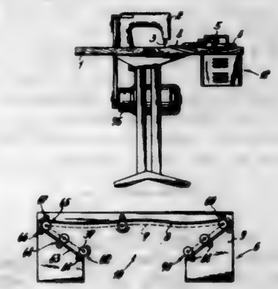


An electro-mechanical actuator mechanism having drive means such as an eccentric drive providing a source of motion for actuating a member. Interposed between the member to be actuated and a control source, such as a solenoid, is an operating lever. The drive means acts upon this lever causing it to selectively pivot about either one of two fulcrums. One of the fulcrums is located at the point of connection between the lever and the member to be actuated and the other of the fulcrums is normally retracted, but movable to engage the lever by the control source such as a solenoid. A second lever is connected to the operating lever for directing a force component against the retractable fulcrum to disengage it from the operating lever.

3,443,445
STENCIL DRIVE MECHANISM FOR AUTOMATIC SEWING AND THE LIKE MACHINES

Ernst Becker, Darmstadt, Karl Notz, Knimbach, Upper Franconia, and Karl-Heinz Meier, Zeilhard uber Darmstadt, Germany, assignors to Quick-Elektromotoren-Werk G.m.b.H., Darmstadt, Germany, a corporation of Germany

Filed Feb. 14, 1967, Ser. No. 615,996
Claims priority, application Germany, Feb. 15, 1966, Q 884
Int. Cl. F16h 37/08, 25/08, 25/16
U.S. Cl. 74—55 11 Claims

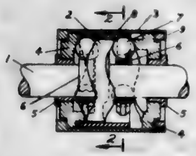


A stencil drive mechanism comprises a stencil strip having straight and at least one bent section, a driving roller engaging the concave side of the stencil, and a guide roller engaging the convex side of the stencil and arranged with its axis parallel to and rotatable concentrically with the axis of the driving roller. Both rollers are positively driven in opposite directions by one sun gear and the planetary carrier of a differential drive whose remaining sun gear is driven by a power source, to displace the stencil by said rollers.

3,443,446
RECIPROCATING MOTION CREATING DOUBLE THRUST BALL BEARING

Wolfgang George Buergel, Fredonia, N.Y., assignor to George K. Buergel, Plainview, N.Y.

Filed Jan. 25, 1967, Ser. No. 612,758
Int. Cl. F16h 25/12
U.S. Cl. 74—56 4 Claims

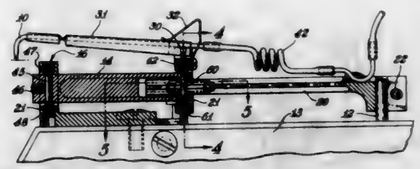


A double thrust ball bearing device for translating rotary motion into reciprocating motion, including a housing and a shaft supported axially of the housing. The housing and shaft are associated with one another by means of a double thrust ball bearing arrangement, whereby the housing or the shaft is selectively reciprocable relative to the other accordingly as one or the other is held stationary. The ball bearing arrangement includes a floating cage coaxial with the shaft and surrounding a double wavy faced collar carried by the shaft. The cage carries two parallel rows of ball bearings, the balls in each of which have rolling contact with the races of a separate track defined by one wavy face of the collar and an opposed wavy surface of a race fixed in the housing. A separate floating ring coaxial with the shaft is centered between the balls of each row so as to afford a third contact for each of the balls of the row. The centers of the balls in each track are disposed closer to the axis of the shaft than the points of contact of the balls with opposed faces of the track.

3,443,447
RECTILINEAR RECORDER

Leslie E. Fowler, Arlington Heights, Ill., assignor to Beckman Instruments, Inc., a corporation of California

Filed Nov. 21, 1967, Ser. No. 684,694
Int. Cl. 16h 21/44
U.S. Cl. 74—103 7 Claims



A linkage mechanism for constraining a point on an output arm to move along a substantially straight line path through a distance linearly proportional to a limited angular rotation of an input shaft is provided by an extensible drive assembly having one end connected to the drive shaft and the other end pivotally connected to the free end of a control arm. The other end of the control arm is pivoted at a point which is between the drive shaft and the straight line path and on a line perpendicular to said path. An output arm is connected to the extensible drive assembly and maintained in a straight line therewith as an extension thereof.

3,443,448
POWER TRANSMITTING MECHANISM FOR ATTACHMENTS FOR SURGICAL TURBINES

Ronald G. Coss, La Habra, Calif., assignor to Standard Pneumatic Motor Company, Whittier, Calif., a corporation of California

Filed June 22, 1966, Ser. No. 559,597
Int. Cl. F16h 13/00; B23b 31/10
U.S. Cl. 74—209 7 Claims

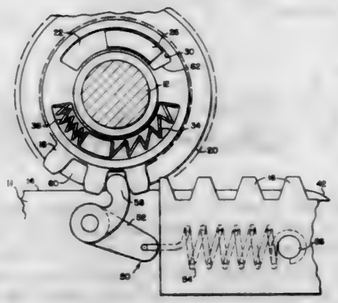


Attachment for surgical turbines having a housing with a forward part disposed at an angle to the axis of the turbine so that the working part of the tool is more readily manipulated at the point of use. A chuck arrangement is disposed in the angular part for releasably holding drills, burrs and the like. A power-transmitting mechanism includes driving and driven heads with beveled friction edges, the driven head being attached to a spindle mounted for rotation and longitudinal movement and resiliently urged in a direction to effect frictional engagement of the beveled edges of said heads.

3,443,449
GEAR ENGAGEMENT DEVICE

Lester R. Kotarski, Victor, N.Y., assignor to Ritter Pfaudler Corporation, Rochester, N.Y., a corporation of New York

Filed Oct. 16, 1967, Ser. No. 675,653
Int. Cl. F16h 1/04, 57/00
U.S. Cl. 74—422 9 Claims



A pinion, resiliently coupled to a rotating drive shaft, is carried by the shaft toward engagement with a rack. A spring loaded roller, adapted to mesh with the pinion and located an integral number of pitch lengths from the rack, and in the path of the pinion engages and rotates the pinion with respect to the drive shaft against the resilient coupling to orient the pinion to the rack so that the pinion teeth will be in the correct relationship to mesh

smoothly with the rack. A positive drive dog also carried by the rotating drive shaft then engages the pinion and drives it through the rack.

3,443,450
MECHANISM CONTROL
Norman N. Fender, Erie, Mich., assignor to Universal American Corporation (formerly Robfre Manufacturing Corporation), New York, N.Y., a corporation of Delaware
Filed Mar. 10, 1967, Ser. No. 622,162
Int. Cl. G05g 11/00
U.S. Cl. 74—481 2 Claims



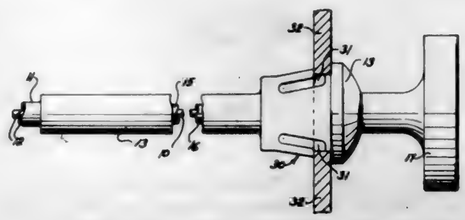
This invention relates to mechanism control and particularly to mechanism for actuating and controlling the parking brakes of an automotive vehicle and a release means for the parking brake control. The parking brake control is inclusive of a locking mechanism or means which is released by power or servo-motor means. The release means embodies a bellows-like servo-motor unit arranged for communication with manifold vacuum or other source of reduced pressure for collapsing the bellows-like unit to release the parking brakes.

3,443,451
MOTION TRANSMITTING CORE ELEMENT AND METHOD FOR MAKING SAME
George M. Zieber, Jr., King of Prussia, Pa., assignor to Teleflex Incorporated, North Wales, Pa., a corporation of Delaware
Filed Aug. 18, 1966, Ser. No. 573,286
Int. Cl. F16c 1/10
U.S. Cl. 74—501 14 Claims



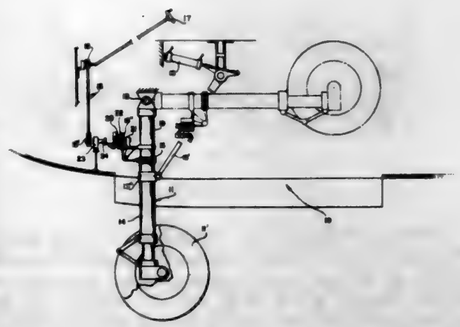
Two different types of cable core elements are joined to form a single motion transmitting cable core element for a remote control assembly. A first cable has a first plurality of metal strands wound together on a long lead with a flat metal strip wound helically about the strands on a short lead. A second cable includes a second plurality of metal strands wound together on a long lead with a metal wire having a circular cross section wound helically about the strands on a short lead to form space convolutions. A bore is formed longitudinally into one end of the first cable and the wire of circular cross section is removed from a length of the second cable so as to expose a length of strands which are in turn fused together at their ends, such as by brazing. The strands of the second cable are then inserted into the bore of the first cable so that the flat strip of the first cable is in abutting engagement with the wire of circular cross section of the second cable. A fusing agent, such as bronze by brazing or silver solder by soldering, interconnects the first and second cables at the joint thus formed.

3,443,452
FLEXIBLE CABLE CONTROL ASSEMBLY
Harry E. Shontz, Ziegerville, Pa., assignor to NW Controls, Inc., North Wales, Pa., a corporation of Pennsylvania
Filed Mar. 13, 1967, Ser. No. 622,725
Int. Cl. F16c 1/16
U.S. Cl. 74—502 3 Claims



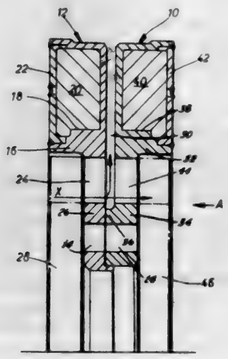
A molded control assembly useful as a throttle or choke control for marine engines, farm machinery and the like, is disclosed. The assembly includes a molded plastic body which is bolted to one end of the outer sheath of a flexible control shaft. The sleeve is provided with an axially extending bore through which the core wire of a flexible control shaft extends. The coaxial counterbore in the sleeve receives a shaft to which the core wire is connected. Retaining means for the assembly include a laterally extending flange on the sleeve and a nut or other retainer means threadedly secured to the sleeve. Also disclosed are resilient fingers mounted on the sleeve in place of the nut, the fingers being bendable inwardly as they are forced through an opening and made of a material which is sufficiently resilient so that they snap outwardly when they clear the opening, thereby holding the control assembly permanently in place.

3,443,453
COUPLING
Perry J. Thompson, Marietta, Ga., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Oct. 16, 1967, Ser. No. 675,591
Int. Cl. G05g 1/08; B64c 25/50
U.S. Cl. 74—510 5 Claims



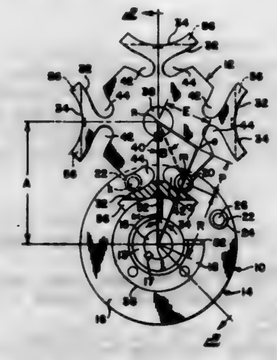
This coupling transmits torque through an offset joint between two shafts. A spring-loaded member assures contact between the end surfaces of the shafts and compensates for misalignment as well as overengagement and underengagement during coupling and/or uncoupling. An independent feature is an automatic lock and self-centering device which primarily limits uncoupled rotation and secondarily centers the shaft. A locking device on each shaft will assure proper coupling when the shafts are brought back together. The spring loaded centering function can be overridden without damage to the torque shaft coupling.

3,443,454
MEANS FOR COOLING TORSIONAL VIBRATION DAMPER
Jeffrey Hall, Sheepridge, Huddersfield, England, assignor to Holset Engineering Company Limited, Turnbridge, Huddersfield, Yorkshire, England
Filed Mar. 28, 1967, Ser. No. 626,485
Claims priority, application Great Britain, July 19, 1966, 32,285/66
Int. Cl. F16f 1/16
U.S. Cl. 74—574 5 Claims



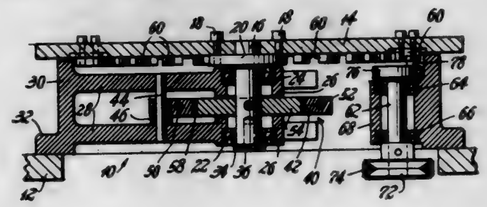
The invention concerns a torsional vibration damper including cooling means comprising a series of holes extending through the damper and fan blades attached to one or both sides of the damper.

3,443,455
INTERMITTENT MOTION DEVICE
Martin J. Zugel, 1198 E. 170th St., Cleveland, Ohio 44110
Filed May 3, 1967, Ser. No. 635,870
Int. Cl. F16h 27/06
U.S. Cl. 74—820 11 Claims



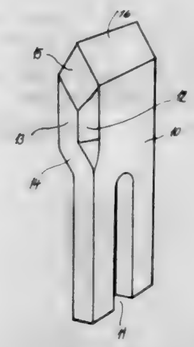
An indexing device comprising a driven mechanism with circular slots for receiving normally uniformly moving pins used to periodically accelerate and decelerate the driven mechanism from and back to a standstill.

3,443,456
APPARATUS FOR POSITIONING AND INDEXING WORKPIECES
William Vangor 325 High Ridge Road, Fairfield, Conn. 06480
Continuation-in-part of application Ser. No. 373,338, June 8, 1964. This application Sept. 15, 1966, Ser. No. 579,694
Int. Cl. B23q 17/00
U.S. Cl. 74—822 4 Claims



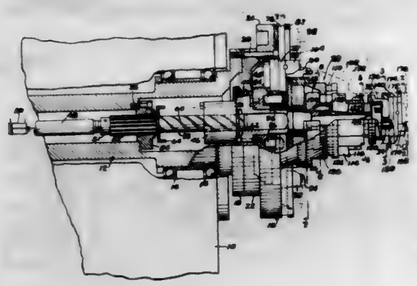
Apparatus for transporting and indexing workpieces in which the worktable is advanced step-by-step and has friction braking means continuously applied to it to arrest and hold it between stepping movements, there being also means for positively locking the worktable against movement between stepping operations.

3,443,457
METHOD FOR MAKING CHIPPING TOOLS FOR SPIRAL CHIPPERS
Hans Ludvig Nedsten, Jarnvagsgatan 13A, Trollhattan, Sweden
Filed May 22, 1967, Ser. No. 640,217
Claims priority, application Sweden, May 31, 1966, 7,434/66
Int. Cl. B21k 5/12
U.S. Cl. 76—101 2 Claims



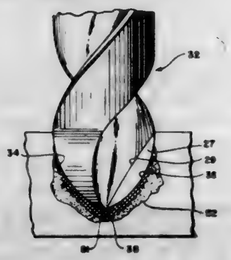
This invention pertains to chipping tools used for producing wood chips within the cellulose industry. The tool is designed so as to prevent damage to the chips by crushing and to impart a uniform thickness to the chips. This object is achieved in that the tool is heated and one corner zone thereof is swaged or pressed up to form a cutting heel, the cutting edges of which are then ground as required.

3,443,458
FEED-OUT HEAD FOR MACHINE TOOLS
Peter H. Ohrnberger, Mount Clemens, and Orval A. Oppenthaeser, Bloomfield Township, Oakland County Mich., assignors to F. Jos. Lamb Co., Inc., Detroit, Mich., a corporation of Michigan
Filed Mar. 3, 1967, Ser. No. 620,300
Int. Cl. B23b *29/02, 39/02*
U.S. Cl. 77—58 15 Claims



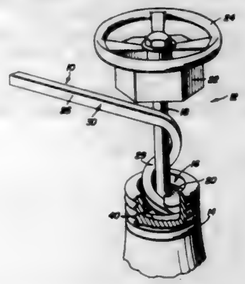
A rotatable tool supporting head for a machine tool having a plurality of axially spaced, radially shiftable tool slides thereon. A shaft extending axially through the head is rotatable independently of the head and has keyed thereto a plurality of cam plates, one for each axially spaced tool slide. Each cam plate has a spiral cam groove therein in which is engaged a cam follower supported by the associated tool slide. When the shaft is rotated in opposite directions relative to the head each tool slide is shifted radially through its feed stroke and retraction stroke in accordance with the shape of the spiral groove in its associated cam plate. The spiral cam groove for one of the tool slides which supports a tool for cutting a radially extending groove is shaped such that rotation of the cam plate in one direction causes the grooving tool to be shifted through its feed stroke to cut the groove and then to be retracted sufficiently to clear the riadially inner edge of the groove cut by the grooving tool.

3,443,459
DRILL
Bruce Alexander Mackey, 27 E. Park, Mundelein, Ill. 60060, and Bruce Alexander Mackey, Jr., Rte. 1, Box 25a, Libertyville, Ill. 60048
Continuation-in-part of application Ser. No. 637,820, May 11, 1967. This application Feb. 14, 1968, Ser. No. 714,393
Int. Cl. B23b *51/02, 51/00;* B27g *15/00*
U.S. Cl. 77—70 15 Claims



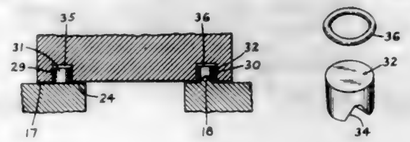
A drill having a cutting point with cutting lips which flow in a continuous curve and tangentially engage both the drill diameter and the straight cutting lips which normally are formed, at some predetermined included angle, on conventional drills.

3,443,460
PACKING EXTRACTION TOOL
William P. Johnston, Jr., Norphlet, Ark., assignor of forty percent to David R. Rumsey, El Dorado, Ark.
Filed May 22, 1967, Ser. No. 640,124
Int. Cl. B25b *27/00*
U.S. Cl. 81—8.1 12 Claims



A handtool for removing worn packing material from stuffing boxes, packing glands, valve bonnets, or the like preparatory to installing new packing and comprising an elongated unitary body member shaped so as to form a single "open" helix adapted to be placed in encompassing relation to a rod passing through the packing to be removed without requiring any significant disassembly of the device within which the packing is located, which tool may be rotated by means of an integral normally extending handle to engage a point on the end of the helix with the packing to be removed to force the packing upwardly along the helix to disengage it from within the stuffing box, etc.

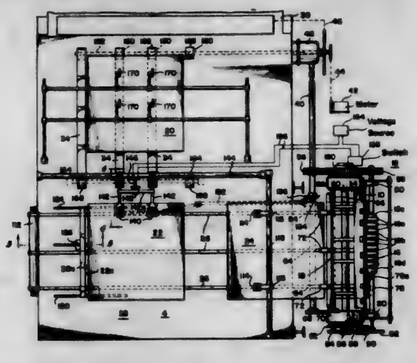
3,443,461
ANTI-FRICTION DEVICE FOR HEAVY MACHINE PARTS
Richard L. De Biasse, 3 Oak St., Madison, N.J. 07940
Filed Nov. 10, 1966, Ser. No. 593,554
Int. Cl. B23b *23/00*
U.S. Cl. 82—32 7 Claims



Movement of a lathe tailstock along its ways implemented by use of polytetrafluoroethylene pistons slidably received in bores in tailstock carriage and having downwardly and outwardly projecting front ends engaging such ways. Such pistons are backed by O rings which yield to permit the undersurfaces of the carriage to be clamped to the ways.

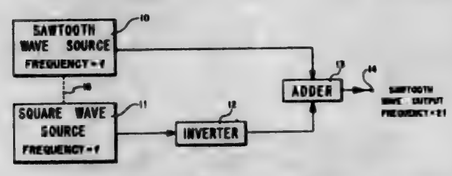
3,443,462
AUTOMATIC SHEET CUTTING AND FEEDING APPARATUS
Michael E. Doohan, West Memphis, Ark., assignor to Boise Cascade Corporation, Boise, Idaho, a corporation of Delaware
Filed Oct. 28, 1966, Ser. No. 590,269
Int. Cl. B26d *7/06;* B65h *17/22, 17/20*
U.S. Cl. 83—81 12 Claims

Automatic sheet cutting and feeding apparatus, including rotary cutter means for severing a longitudinally traveling strip into successive sheets, and sheet conveying means for longitudinally conveying successive severed sheets in a common plane toward a transfer station. The invention is characterized by the provision of improved



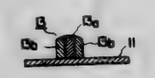
solenoid-operated transfer means actuated in synchronism with the cutter means for displacing successive sheets in said common plane in a lateral direction normal to said longitudinal direction.

3,443,463
FREQUENCY DOUBLER AND COUPLER FOR ELECTRONIC MUSIC GENERATION SYSTEMS
Donald J. Campbell, Cincinnati, Ohio, assignor to Chicago Musical Instrument Co., Lincolnwood, Ill., a corporation of Delaware
Filed July 26, 1965, Ser. No. 474,892
Int. Cl. G10h *1/00*
U.S. Cl. 84—1.01 17 Claims



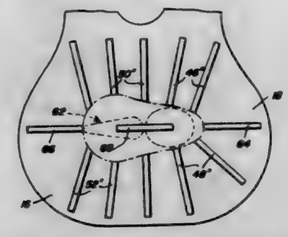
An electronic music generation system including a source of substantially square wave signals and a source of substantially sawtooth wave signals, each of said sources of signals having a frequency determined by an external frequency generator, a plurality of switches to select one or both of the signals, tone color filters to modify the selected signal, and an output amplifier.

3,443,464
SOUNDBOARD RIBS
Shoji Akagi, Hamamatsu-shi, Japan, assignor to Nippon Gakki Seizo Kabushiki Kaisha, Hamamatsu-shi, Shizuoka-ken, Japan
Filed Dec. 15, 1966, Ser. No. 602,061
Claims priority, application Japan, Dec. 25, 1965, 40/105,892
Int. Cl. G10c *3/06*
U.S. Cl. 84—195 13 Claims



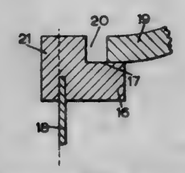
A piano soundboard structure in which spaced apart ribs bounded to one surface of a soundboard are caused to have different acoustical characteristics respectively suitable for the operational frequencies of the respective parts of the soundboard to which the ribs are bonded, with the acoustical characteristics being varied by the use of different kinds of woods in different configurations for the ribs.

3,443,465
GUITAR CONSTRUCTION
Michael Kasha, Box 622, Rte. 4, Tallahassee, Fla. 32302
Filed Dec. 22, 1966, Ser. No. 603,905
Int. Cl. G10d *1/08*
U.S. Cl. 84—267 20 Claims



This disclosure pertains to a guitar soundboard having an improved elongated bridge mounted in the conventional position on the outer surface thereof and elongated bracing members secured to the inner surface of the lower lobe of the soundboard with the bracing members extending generally longitudinally along the soundboard. The improved bridge and the specific internal bracing utilized coact to free the treble side or end of the bridge and the corresponding portion of the lower lobe of the soundboard for more individual motion excited by the treble strings as compared with motion imparted thereto more fully by the base strings. The internal bracing utilized and the bridge construction used in conjunction therewith serve to individually tune the treble side of the lower lobe of the soundboard to the treble end of the bridge and the base side of the lower lobe of the soundboard to the base end of the bridge for more independent driving of the treble and bass sides of the soundboard by the treble bass ends of the bridge, respectively.

3,443,466
BOX CONTAINERS AND THE LIKE
Raymond Brakewell, 19 Ross Terrace, Broom, Ferry Hill, England
Filed Nov. 8, 1966, Ser. No. 592,806
Claims priority, application Great Britain, Nov. 16, 1965, 48,513/65
Int. Cl. G10d *3/00*
U.S. Cl. 84—291 9 Claims



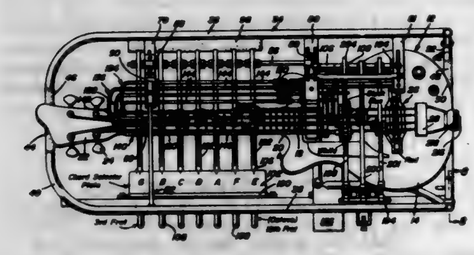
A method and apparatus for making a box container for a musical instrument or the like, wherein a liner strip having a longitudinal groove therein is secured to the inner faces of the top and bottom members of the box, the shape of the liner strip approximating the desired plan outline of the finished product. The side rib of the box is then secured in the longitudinal groove of the strip, the side rib being maintained in position by the grooved liner strips without the use of any jigs or the like to maintain the shape of the box during the setting of the joints.

3,443,467
STRINGED MUSICAL INSTRUMENT
Louis P. Richards, 1807 Mississippi Ave., Davenport, Iowa 52803
Filed June 2, 1967, Ser. No. 643,117
Int. Cl. G01d *3/04, 3/14*
U.S. Cl. 84—307 6 Claims



An eight string guitar having identical cylindrical upper and lower bridges rotatable on the guitar, each bridge having eight annular grooves adapted to receive the respective strings, two of the grooves having deeper diametral slots which retract the respective strings in alternate angular positions of the bridge to vary the strings in playable position, the guitar also having eight slotted members slideable along the guitar body and engageable with the respective strings between the lower bridge and their point of attachment to the instrument body to vary the string tension.

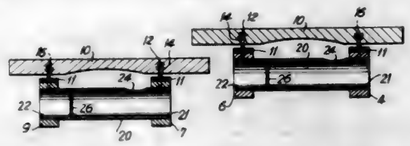
3,443,468
MECHANICAL FINGERING AND PICKING DEVICE FOR ELECTRIC BASS GUITAR
Raymond A. Kidwell, 114 N. 15th St., Frederick, Okla. 73542
Filed Dec. 28, 1966, Ser. No. 605,238
Int. Cl. G10d *3/00*
U.S. Cl. 84—315 15 Claims



An electric bass guitar is supported atop a stand comparable in height and size to a coffee table. Foot operated mechanical fingers and picks selectively fret and pluck the guitar's strings. Performer while simultaneously playing (1) harness-held harmonica and (2) hand playable companion guitar sits in front of bass guitar stand. Stand supported trippable levers are selectively operated by left foot and actuate applicable and removable fretting "fingers." A heel-and-toe tiltable treadle for the right foot actuates push-pull rods having spring-biased pawls which in turn actuate ratchet wheels equipped with circumferential picks rhythmically producing "slap-bass" pizzicato accompaniment.

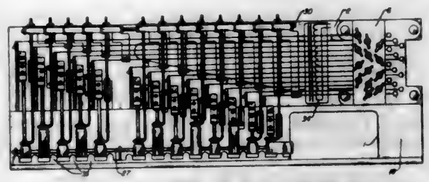
3,443,469
KEYBOARD PERCUSSION INSTRUMENT
Yoichi Hiraoka, 6 Andover Court, Garden City, N.Y. 11530
Filed Jan. 11, 1968, Ser. No. 697,183
Int. Cl. G10d *13/08*
U.S. Cl. 84—410 7 Claims

Horizontal resonance tubes open at the forward ends having a baffle and an upper openings are supported in and between lateral frame members beneath the keys of a percussion instrument such as a xylophone. The upper



openings and baffles are so positioned as to provide optimum resonance and projection forwardly to the audience when the keys of the keyboard are struck.

3,443,470
MUSICAL INSTRUMENTS WITH STRINGS PARALLEL TO KEYBOARD AND OPERATED BY THE FEET
Robert A. Brocato, 108 E. Jordan, Shreveport, La. 71101
Filed June 18, 1964, Ser. No. 376,616
Int. Cl. G10c *3/08, 3/14, 3/18*
U.S. Cl. 84—426 3 Claims



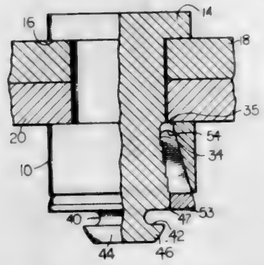
A musical instrument producing a range of bass notes by playing an organ-type pedal board of one octave. The instrument incorporates struck strings arrayed parallel to the pedal board as a sound source. The instrument is especially designed to sit in front of a piano and be played by a pianist's left foot.

3,443,471
FINGER AND WRIST DEVELOPER
Leonard A. Di Muzio, 307 Pearl St., Cambridge, Mass. 02138
Filed Nov. 6, 1967, Ser. No. 680,819
Int. Cl. G09b *15/06*
U.S. Cl. 84—465 9 Claims



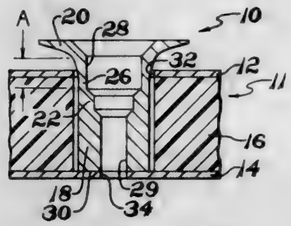
The finger and wrist developer disclosed herein is intended for use by a beginner drummed to develop finger and wrist control of the drum stick, and comprises a drum stick, means pivotally mounting the drum stick, and means for biasing the drum stick toward an upwardly inclined position, whereby repetitive downwardly applied forces by the fingers of the drummer causes pivotal up and down movement of the drum stick. The finger and wrist developer is also useful by the professional drummer to provide concentrated development of the fingers and wrist.

3,443,472
THREADLESS FASTENER APPARATUS
Joseph Darr, Jr., Apt. 229, Brazos Villa, Mineral Wells, Tex. 76067, and Ralph E. Cissell, 46817 N. 70th St. E., Lancaster, Calif. 93534
Filed Nov. 24, 1967, Ser. No. 685,463
Int. Cl. F16b *19/00, 21/00;* A44b *17/00*
U.S. Cl. 85—7 10 Claims



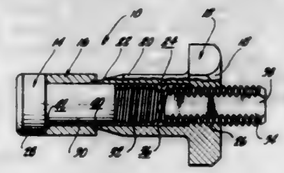
A non-separable, self-locking fastener for connecting a plurality of apertured articles is disclosed, including a bolt having a head and a shank including a stepped ridged lock engaging section. A resilient and expansible lock member which interfits a frusto-conical ridged lock section of the bolt, is expanded and axially inserted onto the bolt into non-releasable engagement with the interfitting lock section without deformation of either member. The exterior of the lock member tapers toward the bolt head and cooperates with a similarly shaped retaining member, which applies compressive forces to the lock member in response to axial loading forces on the bolt to oppose expansion and to prevent release of the lock member. The bolt may further include a puller knob on a tensilely frangible extension.

3,443,473
AXIALLY COLLAPSIBLE FASTENER
Paul G. Tritt, Barberton, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Aug. 1, 1967, Ser. No. 657,693
Int. Cl. F16b *13/06, 39/28;* E04b *2/32*
U.S. Cl. 85—70 5 Claims



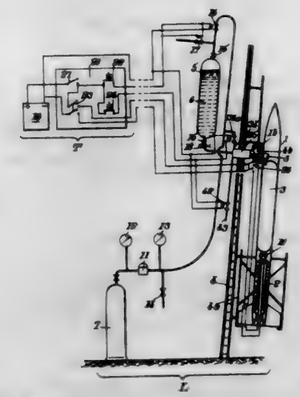
A one-piece collapsible fastener having an upset zone with two distinct regions that provide for the initiation of buckling in the thinner region of the upset zone immediately preceding the buckling of the gradually thicker second region of the upset zone in response to an axial load so that in a sandwich type panel installation the fastener positively grips at least one exterior skin of the panel.

3,443,474
BLIND FASTENER
Richard H. Blakeley, Encino, and Emric Bergere, Los Angeles, Calif., assignors to VSI Corporation, Pasadena, Calif., a corporation of Illinois
Filed Dec. 27, 1967, Ser. No. 693,957
Int. Cl. F16b *13/04, 33/04*
U.S. Cl. 85—72 6 Claims



A three-piece blind fastener, having a nut, a core bolt and an expansible sleeve, is set in two or more sheets of material by drawing the core bolt's head toward the blind side of a sheet, engaging the sleeve with the head and expanding it over a nose on the nut until the sleeve engages the blind side. The number of engageable threads of the nut and the core bolt is limited at a minimum to that number required to transmit a sufficient axial load through the core bolt head to expand the sleeve and set the fastener. The maximum number of threads is limited to that number required to sustain the ultimate tensile load capacity of the core bolt.

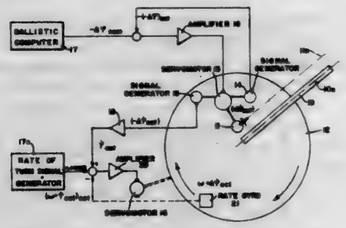
3,443,475
MISSILES, INCLUDING AT LEAST ONE GAS GENERATOR MAKING USE OF AT LEAST ONE LIQUID PROPELLANT COMPONENT PLACED UNDER THE ACTION OF A DRIVING GAS AND IN PLANTS FOR LAUNCHING SUCH MISSILES
Pierre Berton, Boulogne-sur-Seine, France, assignor to Office National d'Etudes et de Recherches Aerospatiales (par abreviation: O.N.E.R.A.), Chatillon-sous-Bagneux, France
Filed Dec. 27, 1966, Ser. No. 606,517
Claims priority, application France, Dec. 30, 1965, 44,317
Int. Cl. F41f *3/04*
U.S. Cl. 89—1.8 4 Claims



A solid liquid propellant rocket is provided with a propellant liquid component tank placed under the direct pressure of a driving gas under pressure. In order to fill

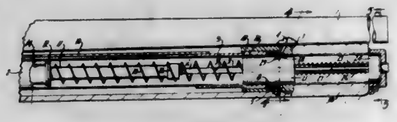
this tank from a launching station, use is made of a storing tank belonging to this launching station and containing the amount of liquid component to be placed in said rocket tank. Transfer of this amount of liquid componet from the storing tank to the rocket tank is performed under the action of a driving gas fed from a tank located at the launching station, this transfer of liquid being followed immediately by a transfer through the same channel of the driving gas into the rocket tank.

3,443,476
CONTROL SYSTEM FOR ROTATABLE GUN PLATFORM AND OPTICAL SIGHT
Helmut Helder and Helmut Loos, Hamburg, Germany, assignors to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, Germany
Filed Sept. 1, 1966, Ser. No. 577,122
Claims priority, application Germany, Sept. 1, 1965, P 1,270
Int. Cl. F41g 5/06
U.S. Cl. 89—41 **6 Claims**



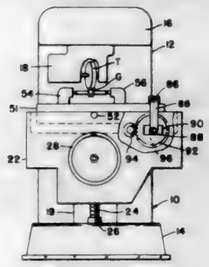
A control system for use with a rotatably mounted gun platform which carries a gun and an optical sight, the latter being rotatable on the platform with respect to the gun. The control system includes two servomotors, one for turning the sight with respect to the gun and the other for turning the platform, and two control circuits whose outputs are applied to the respective servomotors. The first control circuit compares a signal representing the nominal value of the lead angle between the optical axis of the sight and the bore axis of the gun with a signal representing the actual instantaneous angle between the optical axis of the sight and the bore axis of the gun, and forms a difference signal which is applied to the first-mentioned servomotor. The second control circuit derives a positioning signal from a nominal value which is a function, with reversed algebraic sign, of the actual rate of turn of the sight, a nominal value which is a function of a predetermined rate of turn, and a signal which is a function of the actual rate of turn of the platform, this positioning signal being applied to the other servomotor.

3,443,477
GAS OPERATED FIREARM
Arthur J. Kaempf, 311 Loon Lake Road, Shawano, Wis. 54166
Filed Oct. 26, 1967, Ser. No. 678,364
Int. Cl. F41d 7/00, 11/10
U.S. Cl. 89—128 **10 Claims**



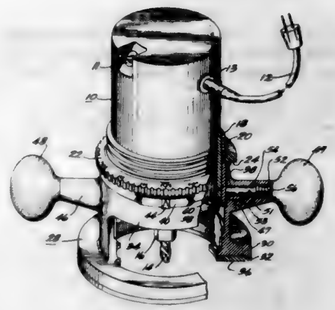
The invention relates to firearms, such as shotguns, which utilize gas pressure developed by the explosion in the barrel to automatically eject the spent cartridge case or shell. A structure is provided to selectively permit manual ejection of the empty shells by bleeding off the explosion gas through ports in the magazine tube to the atmosphere before the gas can operate on the action to actuate the automatic ejection mechanism.

3,443,478
GEAR SHAVING MACHINE
David W. Daniel, Birmingham, Mich., assignor, by mesne assignments, to Lear Siegler, Inc., Santa Monica, Calif. a corporation of Delaware
Filed Feb. 8, 1967, Ser. No. 614,609
Int. Cl. B23f 19/08, 21/28
U.S. Cl. 90—1.6 **9 Claims**



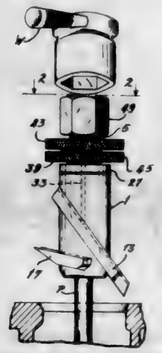
A gear shaving machine for crown shaving gears in which a gear and gear-like cutter are rotated in mesh while caused to approach by a plunge feed without lateral traverse which accomplishes crowning of the gear by a relative rocking between the gear and tool which takes place at or near the depth feed.

3,443,479
DEPTH ADJUSTMENT FOR POWER TOOL
Paul A. Hawley and Jerry G. Eikermann, Jefferson City, Mo., assignors to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Aug. 29, 1966, Ser. No. 575,619
Int. Cl. B23c 1/20; B27c 5/10
U.S. Cl. 90—12 **6 Claims**



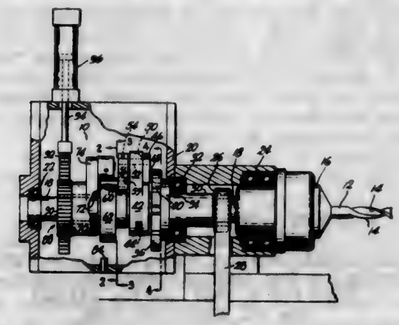
A portable router including a motor having a threaded casing slidably received within a cylindrical base, an adjusting nut threadably engaging the casing and abutting the base and thereby positioning the motor relative to the base. The motor casing and base having cooperating keyways and a key received therein frictionally engaging the motor casing for preventing relative rotation and relative axial movement between the motor and the base. Means are provided for calibrating the depth of cut desired.

3,443,480
MEANS FOR SECURING CUTTERS TO TOOLS
Joe S. Wells, P.O. Box 3114, Colorado Springs, Colo. 80907
Filed May 24, 1967, Ser. No. 641,036
Int. Cl. B23c 1/20; B23b 51/10; B23d 77/04
U.S. Cl. 90—12.5 **10 Claims**



The tool is for the purpose of narrowing valve seats in internal combustion engines. During the valve seat narrowing operation it is often necessary to adjust or remove some cutters without disturbing others in the tool. The tool has a cylindrical body, the peripheral surface of which is transversely slotted to slidably receive cutters, which are longitudinally grooved in their upper surfaces, and each cutter slot is intersected by an axial bore in which is slidably received a pin-like locking member engageable with the cutter slot, some of the locking members being secured to a ring member mounted on an end of the tool body for movement axially thereof, and others being independent pins extending through the ring member, and means threadably mounted on the tool for holding the ring member and the independent pins in locking position independently of each other. To permit mounting the tool on pilots of different diameters, the tool is centrally apertured and coil springs of sufficient diameter and wire thickness to fully occupy the annular space between the aperture and pilot are removably retained in the aperture.

3,443,481
AUTOMATIC INDEX MECHANISM
Joseph J. Ramge, 1495 Fairholme Road, Grosse Pointe Woods, Mich. 48236
Filed May 31, 1967, Ser. No. 642,535
Int. Cl. B23f 23/08
U.S. Cl. 90—56 **10 Claims**



Index mechanism which automatically rotates the spindle for a machine tool through a preselected angle without affecting the position of the drive mechanism for the spindle. The mechanism utilizes a single index plate so that it can be used to index tools having various numbers of flutes.

3,443,482
STATOR-CONTROLLED HYDRAULIC MOTOR
James L. Lummus, and Arthur Park, Tulsa, Okla., assignors to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed Dec. 19, 1966, Ser. No. 602,666
Int. Cl. F01c 5/04; F04c 9/10, 47/04
U.S. Cl. 91—93 **10 Claims**

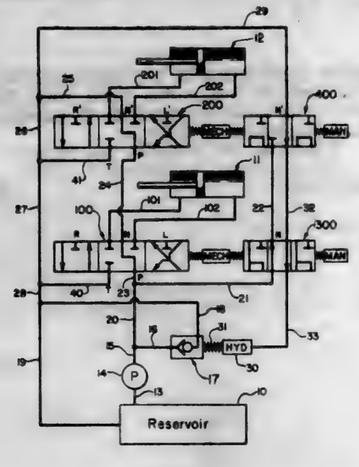


A hydraulic motor is suspended within a well bore at the lower end of a fluid conduit through which hydraulic fluid is fed to the motor under pressure. The motor includes a resilient stator having a female helical thread within a housing, and a rotor having male helical thread and arranged to rotate within the stator. Fluid is forced down between the rotor and the stator causing the rotor to rotate. Means are provided to improve the operability of such hydraulic motor, including means for forcing the resilient stator inwardly against the rotor. Additional operational improvement means are described including means for reducing vibrations and relief means for bypassing drilling fluid.

3,443,483
PILOT UNLOADING HYDRAULIC CIRCUIT
Charles A. L. Ruhl, Wheaton, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed May 6, 1966, Ser. No. 548,167
Int. Cl. F15b 11/08, 13/04, 11/00
U.S. Cl. 91—418 **2 Claims**

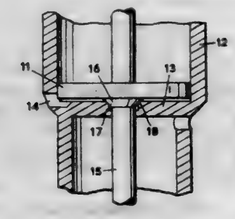
A hydraulic circuit for controlling a hydraulic motor having a pump supplying fluid under pressure to an unloading valve, a pilot valve and an operating valve which is selectively positionable to direct fluid pressure to either side of a hydraulic motor to be controlled thereby. The unloading valve in its unseated position communicates directly with the reservoir and in its seated position blocks communication with the reservoir. The pilot valve is manually shiftable from a center neutral position and is mechanically, resiliently connected to the operating valve for selective positioning on either side of neutral. Movement of the pilot valve from center neutral position simultaneously directs fluid pressure to the unloading

valve to effect seating thereof and exerts a force on the operating valve to move it to the selected position in



order to direct fluid pressure to the desired side of the hydraulic motor.

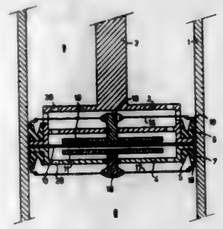
3,443,484
SEAL BETWEEN PISTON ROD AND CYLINDER WALL
John Barker, Stanislaw Mieczyslaw Gonek, and Brian Neville Read, Stafford, England, assignors to The English Electric Company Limited, London, England, a British company
Filed June 26, 1967, Ser. No. 648,876
Claims priority, application Great Britain, June 24, 1966, 28,290/66
Int. Cl. F16j *15/56*
U.S. Cl. 92—165 **2 Claims**



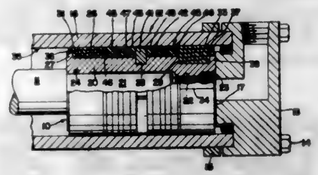
In a piston-and-cylinder device, in which the piston rod passes through an end wall of the cylinder, it is required under certain conditions to provide a gas-tight seal. Rubber rings and the like are adversely affected by heat, and by relative movement of the piston and cylinder.

3,443,485
PISTON FOR A PNEUMATIC OR HYDRAULIC CYLINDER
Marinus van Drunen, Leeuwarden, Netherlands, assignor to N.V. Machinefabriek A. Bijlenga, Leeuwarden, Netherlands, a limited-liability corporation of the Netherlands
Filed June 19, 1967, Ser. No. 646,821
Claims priority, application Netherlands, June 29, 1966, 6609024
Int. Cl. F16j *1/00, 9/08*
U.S. Cl. 92—181 **12 Claims**

For use in a hydraulic or pneumatic cylinder, a piston having an annular flexible packing engageable with the walls of the cylinder, and means responsive to fluid pressure in the cylinder for moving the packing inwardly to decrease contact with the cylinder walls upon movement of the piston in the cylinder. A second annular packing and associated pressure responsive means is similarly provided around the piston in underlying relation to the first packing. Depending on the direction of movement of the piston in the cylinder, the packing adjacent the low pressure side of the piston will be moved inwardly away from the wall of the cylinder by the associated pressure responsive means while the other packing will experience a radially inward force from the associated pressure responsive means that will tend to balance radial outward forces on the packing exerted by fluid pressure on the high pressure side of the piston to prevent increased contact between the packing and the cylinder wall.



3,443,486
PISTON AND SEAL ASSEMBLY
Robert W. Lanman, Homeworth, Ohio, assignor to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Aug. 7, 1967, Ser. No. 658,864
Int. Cl. F16j *9/08*
U.S. Cl. 92—244 **4 Claims**

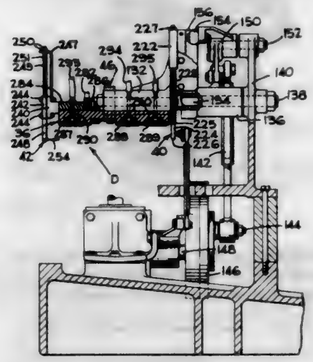


A piston seal arrangement in which the piston head has a flange at one end for retaining bearing and packing members and has grooves for receiving a split separator annulus and a split combination bearing and retaining member whereby all the bearing and packing members may be removed from the piston head without completely removing the piston from the cylinder, the bearing and packing parts being of materials and so arranged that no metal parts contact the cylinder wall.

3,443,487
CARTON ALIGNING AND ERECTING MECHANISM
Floyd M. Knight, San Jose, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Feb. 6, 1967, Ser. No. 614,247
Int. Cl. B31b *1/06, 1/80*
U.S. Cl. 93—53 **20 Claims**

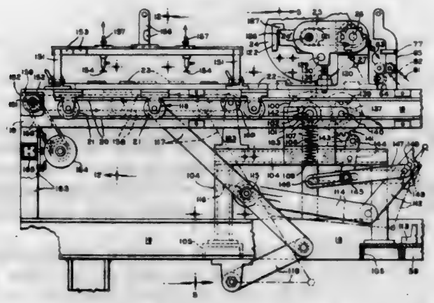
A carton handling mechanism for accurately adjusting and locking in adjusted position an adjustable wall of a

magazine, and for accurately positioning each of the foremost cartons in the magazine while overcoming misalignment of these cartons relative to each other by applying impact forces to the top and to one end of each carton.



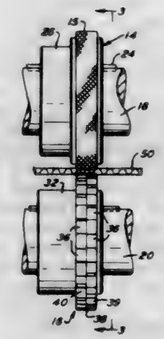
End openers on a suction head effecting the partial opening of the carton as the suction head withdraws the carton from the magazine. A vacuum system for the suction head which permits rapid operation and minimizes blocking of vacuum passages by debris.

3,443,488
APPARATUS FOR DIE CUTTING AND SCORING PAPER SHEETS
Clovis F. Deslauriers, Harbor Drive, Port Chester, N.Y. 10573
Filed May 31, 1967, Ser. No. 642,460
Int. Cl. B31b *1/14*
U.S. Cl. 93—58 **11 Claims**



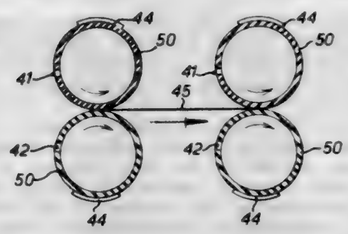
A rotating cam disc synchronously reciprocates a die bed and lifts a pressure roller toward the cylinder when the die bed is moved from the feeding end to the discharge end of the apparatus. The cylinder and pressure roller are rotated by the shaft of the cam disc in synchronism with the rotation of a second cam disc associated with the cylinder and said second cam disc actuating a bell-crank adapted to move the cylinder away from the pressure roller which is permitted to be yieldingly supported during the travel of the die bed from the discharge end to the feeding end of the apparatus.

3,443,489
PAPERBOARD SCORING DEVICE
Harry J. Watkins, West Berlin, N.J., assignor to The Langston Company, Camden, N.J., a corporation of New Jersey
Filed June 1, 1967, Ser. No. 642,820
Int. Cl. B31b *1/22*
U.S. Cl. 93—58.1 **5 Claims**



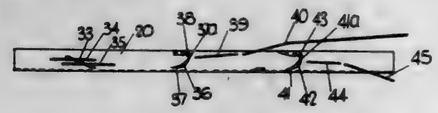
The scoring wheel of a double-faced corrugated paperboard scoring device has staggered relief areas on alternate sides of the scoring surface.

3,443,490
APPARATUS FOR CUTTING AND CREASING CARDBOARD
Thomas Desmond Bishop, Solihull, England, assignor to The Deritend Engineering Company Limited, Birmingham, England, a British company
Filed June 13, 1966, Ser. No. 557,093
Claims priority, application Great Britain, June 15, 1965, 25,326/65
Int. Cl. B31b *1/22*
U.S. Cl. 93—58.2 **3 Claims**



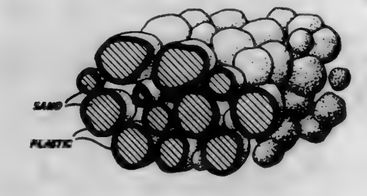
An apparatus for slotting and creasing blanks, which includes first and second pairs of rolls arranged to operate successively on each blank, and in which each pair of rolls is provided with (a) one set consisting of two complementary creasing tools, one tool of the set being mounted on the surface of each roll and extending parallel to the axis of the roll, (b) at least one set consisting of two complementary slotting tools, one tool of each set being mounted on the surface of each roll and lying in a plane perpendicular to the axis of the roll, and (c) at least one set consisting of two complementary drive bands, one drive band of each such set being mounted on the surface of each roll and extending from one side of the creasing tool around the roll to the other side of the creasing tool, the slotting tools being adjustable circumferentially relative to the creasing tool and drive bands on each roll to vary the spacing of the two creases produced by the two pairs of rolls on each blank.

3,443,491
MANUFACTURE OF BOXES OR CARTONS
Geoffrey J. Bryan, Kettering, England, assignor to Senior Products Limited, Desborough, England
Filed Aug. 29, 1966, Ser. No. 575,622
Int. Cl. B31b *1/16*
U.S. Cl. 93—58.4 12 Claims



Method and apparatus for opening cardboard box blanks and cutting selected flaps thereof, whereby to shorten only such selected flaps, which method includes deflecting all of the flaps on one side of the carton blank out of the plane of said blank, releasing less than all of the so deflected flaps, whereby leaving one or more flaps still deflected, providing guide means between the deflected and released flaps, whereby to maintain such separate and trimming one or the other of the separated flaps.

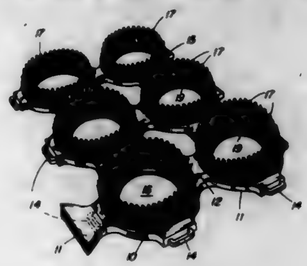
3,443,492
ARTIFICIAL SNOW
Charles M. Pleass, 17 Amber Place, Bernardsville, N.J. 07924
Filed Oct. 13, 1966, Ser. No. 586,517
Int. Cl. E04c *1/24*; A63g *21/02*; C08h *13/08*
U.S. Cl. 94—3 5 Claims



A synthetic skiing surface which comprises a plurality of particles such as sand, pea gravel and materials having generally the particle size distribution of corn snow, each particle being coated with a substantially continuous hardened plastic coating of the organic class known as the polyolefins, with the preferred member of this class being polyethylene, or other polymeric organic coatings having substantially the same properties as polyethylene with respect to coefficient of friction and resistance to weathering. The thickness of the coating is sufficient to render to the composite particles surface properties which are equivalent to those of the plastic chosen, particularly to provide a coefficient of friction approximating that of a film of water, and a composite particle density which approximates the density of corn snow. The depth of the particles is sufficient to pack and simulate a corn snow condition.

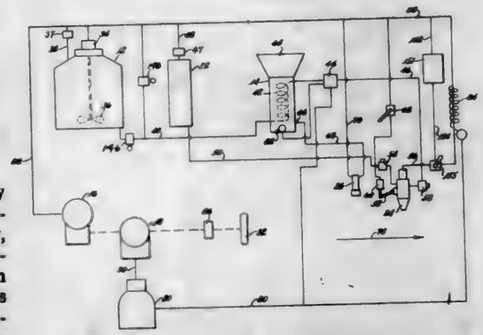
3,443,493
PLASTIC SKI TRACK
Francis F. Del Piano, 32 E. 68th St., New York, N.Y. 10021, and Tino Cazzaniga, Via Zavattari 1, Monza, Italy
Filed May 2, 1968, Ser. No. 726,137
Int. Cl. E04f *15/00*; A63g *21/02*
U.S. Cl. 94—3 12 Claims

The specification describes a plastic ski track composed of interlocking track elements having two roughly round, joined portions. Each portion has a round, open middle and a number of concentric, outer rows of upright bristles. The underside of the track elements has vertical ribs under each portion, to provide maximum strength with light-weight construction and to facilitate anchoring of



the track elements to the ground. The elements may be fabricated by injection molding of a plastic composition, such as a polyethylene-based compound.

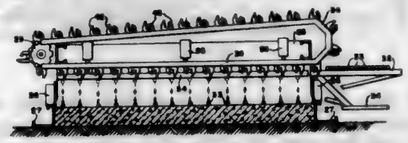
3,443,494
METHOD AND APPARATUS FOR APPLYING MARKING STRIPS TO HIGHWAYS AND THE LIKE
Gerald L. Boettler, 732 Akron Blvd., Kent, Ohio 44240, and Michael Chaykowski, 30 Prospect St., Cuyahoga Falls, Ohio 44221
Continuation-in-part of application Ser. No. 234,978, Nov. 2, 1962. This application Apr. 29, 1964, Ser. No. 364,886
Int. Cl. E01c *23/16*
U.S. Cl. 94—22 26 Claims



1. The process of curing a resin which can only be cured at elevated temperatures and which cures at faster rates at elevated temperatures than at room temperature comprising bringing the resin into intimate embedded contact with a finely divided, heated, solid chemically inert material.

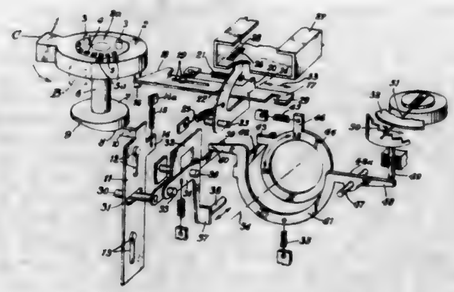
11. The method of applying a reflective marking strip to a hard surface comprising the steps of providing a source of thermosetting resin consisting essentially of a light pigmented epoxy resin and a separate source of catalyst for said epoxy resin, said catalyst and thermosetting resin when mixed having an elevated fast cure temperature in the range of 350–600° F. for setting to a solid within a period of less than five minutes, continuously flowing controlled amounts of the resin along a path to said hard surface, heating the epoxy resin to a temperature in the range of 260–400° F. but below said fast cure temperature, mixing relatively cold setting catalyst from the catalyst source with said heated resin, immediately applying the resulting hot mixture against the hard surface in the form of a strip while effecting relative movement of said flow path along the surface, providing a source of light reflecting particles, heating the reflecting particles to a temperature in the range of 550–650° F. and substantially above said fast cure temperature, and applying the heated reflecting particles to the catalyst-resin mix while said mix is still liquid and hot in a quantity sufficient to bring the temperature of the mix up to said fast cure temperature for solidifying the mix.

3,443,495
CONCRETE REINFORCING STEEL HANDLING AND PLACING DEVICE
Carl J. Heltzel, 523 Country Club Drive, NE., Warren, Ohio 44484
Filed Nov. 29, 1967, Ser. No. 686,526
Int. Cl. E01c *19/00*, *11/02*
U.S. Cl. 94—39 13 Claims



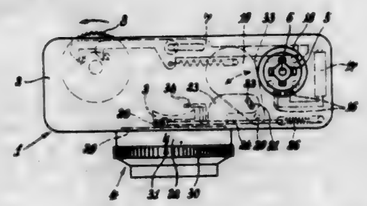
The disclosure illustrates and describes an apparatus for supplying to a plastic concrete road under construction a succession of reinforcing bars originally immovably mounted on a rack adjacent an end of the conveyor in which the conveyor carries means for segregating and picking up the bars from the rack, carrying the same out over the concrete and then releasing such bars for deposit upon the concrete surface after which, by appropriate means, the reinforcing bars may be depressed below the surface of the concrete slab at various selected intervals to act as tie-bars for center joints, dowel rods for transverse joints and/or use in connection with continuous reinforcing and wire mesh reinforcing; the bars being picked from the rack by one or more means for advancing the rods along the rack, for relatively moving the means to receive the bars in a supporting relation where the bars are carried out over the concrete and involving also release means by which the bars may be ultimately deposited under the slabs.

3,443,496
PHOTOGRAPHIC CAMERA
Edgar Sauer, Stuttgart-Rohr, and Johann Hahn and Karl Joos, Stuttgart, Germany, assignors to Zeiss Ikon Aktiengesellschaft, Stuttgart, Germany, a corporation of Germany
Filed Oct. 11, 1966, Ser. No. 585,977
Claims priority, application Germany, Nov. 27, 1965, Z 11,888
Int. Cl. G03b *19/02*
U.S. Cl. 95—11 10 Claims



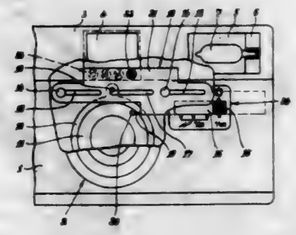
A photographic camera equipped with an automatic daylight exposure range and an automatic flash exposure range is provided with a flash exposure computer having a handle for preselecting a guide number which is movable from an initial position to a terminal position from which upon release the handle returns automatically to the initial position. In said initial position the automatic daylight exposure range is operative, while in said terminal position the automatic flash exposure range is operative and simultaneously introduces into the latter the preselected guide number.

3,443,497
CAMERA HAVING STRUCTURE FOR MAKING FLASH EXPOSURES
Oskar Bihlmaier, Braunschweig, Germany, assignor to Voigtlander A.G., Braunschweig, Germany
Filed Nov. 2, 1966, Ser. No. 591,567
Claims priority, application Germany, Nov. 12, 1965, V 18,236
Int. Cl. G03b *19/04*
U.S. Cl. 95—11 6 Claims



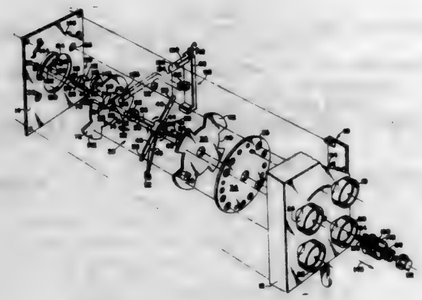
A camera having a holder for receiving flashcubes for making flash exposures. A cover carried by the camera body is movable between a closed and an open position. A slide member couples the cover to the camera exposure time setting device to provide the proper exposure time setting for flash exposures when the cover is moved to the open position.

3,443,498
CAMERA FOR DAYLIGHT AND FLASH EXPOSURE
Oskar Bihlmaier, Braunschweig, Germany, assignor to Voigtlander A.G., Braunschweig, Germany
Filed Feb. 14, 1967, Ser. No. 616,033
Claims priority, application Germany, Feb. 17, 1966, V 18,629
Int. Cl. G03b *19/03*, *19/12*
U.S. Cl. 95—11 7 Claims



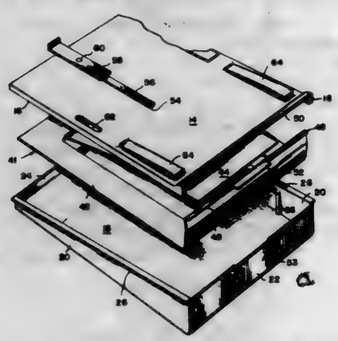
A camera having a single slide which coacts with the shutter to provide settings for daylight and flash exposures. The slide also cooperates with the diaphragm to provide aperture settings to be used with flash lamps of different intensities. Indicating means attached to the slide indicates in the viewfinder both the shutter settings and the lamp intensity corresponding to the aperture setting.

3,443,499
EXPOSURE CONTROL APPARATUS FOR PHOTOGRAPHIC CAMERA
Francis T. Gianino, West Roxbury, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Oct. 12, 1966, Ser. No. 586,242
Int. Cl. G03b 37/00
U.S. Cl. 95—18 5 Claims



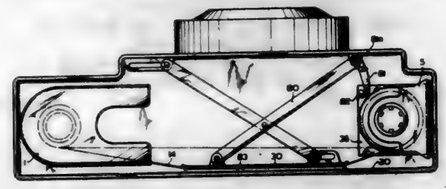
A photographic apparatus for causing simultaneous exposure through a plurality of exposure apertures or for causing exposures through the apertures in sequence. A masking blade is mounted on the shaft with the rotary shutter blade and moves in unison with the shutter blade when simultaneous exposures are desired. Sliding the masking blade along the shaft disengages the shutter blade and engages a ratchet. The ratchet prevents the masking blade from moving through more than one aperture at a time.

3,443,500
PHOTOGRAPHIC FILM MAGAZINE
Robert L. Norton, Norfolk, and William J. Rosen, Brighton, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Dec. 23, 1966, Ser. No. 604,340
Int. Cl. G03b 19/10
U.S. Cl. 95—19 8 Claims



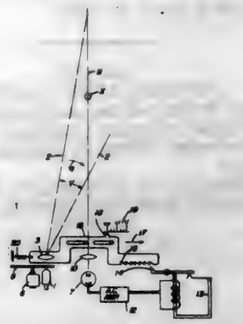
A photographic film pack or magazine comprising a light-tight container for a stack of film units with an opening through which the film units can be advanced one at a time leading edge first. A spring in the container supports the leading ends of the first film unit in alignment with the opening in position to be engaged by a film advancement member in the magazine and functions as a light-tight closure for the opening.

3,443,501
PHOTOGRAPHIC CAMERA AND FILM MAGAZINE THEREFOR
Hans Wolfgang F. Dommick, Bismarckstrasse 69, Berlin 39, Germany
Filed June 15, 1966, Ser. No. 557,817
Claims priority, application Germany, Mar. 9, 1966, D 49,553
Int. Cl. G03b 19/04
U.S. Cl. 95—31 3 Claims



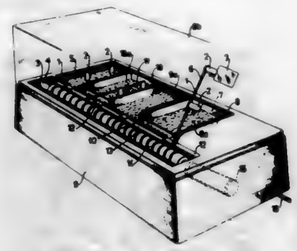
A film magazine and camera that includes a film magazine in two parts, one of which holds a film magazine reel, and the other of which holds a film take-up spool. When the magazine parts are separated the film is unwound from the film supply reel and the film take-up spool is blocked during this interval. When the magazine parts are joined together, the portion of film that was unwound from the film supply reel is wound onto the take-up spool.

3,443,502
AUTOMATIC FOCUSING FOR CAMERAS
Donald M. Harvey, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Aug. 23, 1966, Ser. No. 574,393
Int. Cl. G03b 3/10
U.S. Cl. 95—44 8 Claims



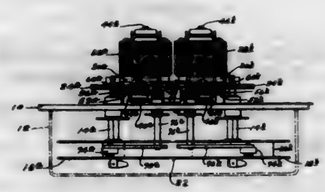
A photographic camera wherein a light source emits an intermittent beam which is moved angularly to sweep the field of the camera lens. The motion of the light source is linked to and calibrated with concomitant motion of the lens-focus-adjustment, so that the lens is always focused for the distance from lens to the point at which the light beam crosses a line-of-sight path between the lens and the object. A sensor, selectively responsive to the intermittent light beamed by the light source, is positioned to receive light reflected from the object and, upon receiving this reflected light, the displacement of the focus-adjustment is arrested thus positioning and holding the camera lens at the correct range adjustment.

3,443,503
DEVELOPING APPARATUS FOR PHOTOGRAPHIC FILM, PARTICULARLY X-RAY FILM
Sune Erik Holm, Vallingby, and Lars Torsten Jevbratt, Vaxholm, Sweden, assignors to Jarnhs Elektriska Aktiebolag, Solna, Sweden, a corporation of the Kingdom of Sweden
Filed Jan. 17, 1966, Ser. No. 527,640
Claims priority, application Sweden, June 11, 1965, 7,679/65; Oct. 14, 1965, 13,303/65
Int. Cl. G03d 3/10
U.S. Cl. 95—89 5 Claims



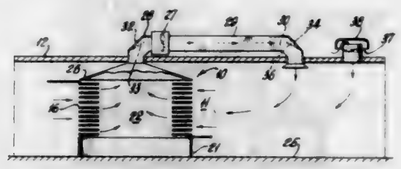
Photographic developing apparatus having a series of liquid processing baths. A rotating shaft having a film hanger device is provided for transporting film successively through the baths. A camming device cooperates with the hanger to raise and lower the film into the baths.

3,443,504
DRIVING AND CLUTCHING MECHANISM FOR FILM REELING APPARATUS OR THE LIKE
Michael Edward Rose, and Samuel Rose, both of 2160 Walton Ave., Bronx, N.Y. 10453
Filed June 14, 1966, Ser. No. 557,534
Int. Cl. G03d 1/14
U.S. Cl. 95—90.5 8 Claims



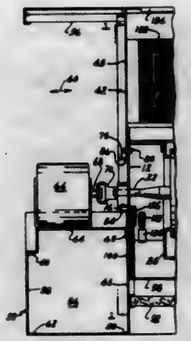
Combined driving and clutching mechanism for reeling roll film from one reel to another. The mechanism includes a pair of electric motors with driving shafts and with nonrotatable shafts, a liquid tank, film winding means operatively connected to the driving shafts, including film reels adapted to be immersed in liquid in the tank and adapted to wind rolls of film back and forth, and a clutching mechanism operatively connected with each motor. The clutching mechanism includes a two-step gear and a spring detent around each nonrotatable shaft to apply spring pressure against its respective two-step gear thereby stopping the rotation of the two-step gear and placing the two-step gear in orbit. A switching mechanism is actuated by the film on the reels for automatically and selectively energizing either of the motors for actuating the clutching mechanism to drive the respective film reel.

3,443,505
COOLING APPARATUS FOR BAKERY PRODUCTS
Harold B. Kaufman, Jr., New York, N.Y., assignor to DCA Food Industries Inc., New York, N.Y., a corporation of New York
Filed Sept. 26, 1967, Ser. No. 670,695
Int. Cl. A21c 15/00; F24f 13/06; F26b 13/00
U.S. Cl. 98—33 5 Claims



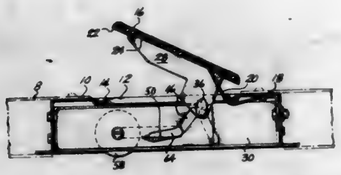
A bakery product cooler includes an endless helical band conveyor having vertically spaced convolutions delineating an axial space. A blower has its suction end connected to the conveyor axial space and its pressure end connected to the room housing the conveyor by means of a duct system provided with adjustable opening ports to permit to full exhaust, complete recirculation or partial recirculation of the air drawn by the blower from the axial space and the controlled mixing of this air with external air. The conveyor may be divided by a baffle into upper and lower sections and conditioned air blown into the axial space of one section flows radially outwardly, mixes with the ambient air and flows radially inwardly at the other section into the axial space from which it is withdrawn.

3,443,506
UNIT VENTILATOR
Donald Robert Schuster, 5024 Teddy Drive 43227, and Edward Roy Merklin, 1072 Afton Road 43221, both of Columbus, Ohio
Filed Apr. 17, 1967, Ser. No. 631,340
Int. Cl. F24f 3/06
U.S. Cl. 98—39 10 Claims



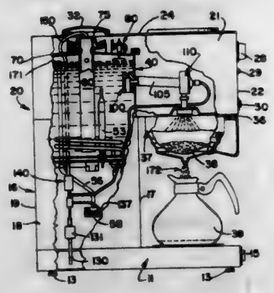
A unit ventilator having a fan subassembly comprised of a sheet metal deck plate and depending blower housings. Sheet metal end plates depend from the deck plate for supporting the bearings which carry the radial loads imposed by the fan shaft. The fan shaft runs through all of the centrifugal fans, and is connected to a motor located outside the air stream. Preferably the fan subassembly is fabricated separately from the conditioner housing, and is installed by sliding same rearwardly into the housing on ledges formed by the end walls of the air stream passage. Servicing of the fan subassembly can be accomplished by removal of the entire subassembly.

3,443,507
PIVOTABLE WALL VENT CONTROL DOOR WITH RECESSED ACTUATOR THEREFOR
Harcourt G. Runnings, 132 S. Spokane St., Seattle, Wash. 98134
Filed Sept. 1, 1967, Ser. No. 665,143
Int. Cl. F24f 7/04, 13/06
U.S. Cl. 98—41 7 Claims



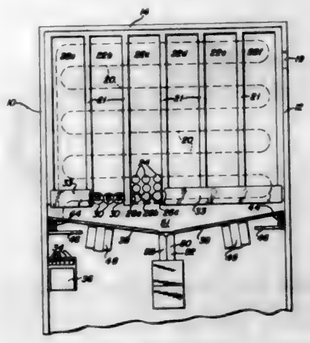
A wall vent is disclosed in which there is an air inlet in the outside of the wall, a door which is pivotally supported on the wall to control the flow of air through the inlet, and an actuating mechanism which is recessed in the wall and operative to open and close the door. The actuating mechanism comprises means defining a guideway in the wall, an actuator slidably engaged in the guideway to move in a path which is generally parallel to the plane of the inlet, a cam track on the actuator, and cam means pivotally supported at a fixed point on the door in cooperative engagement with the cam track whereby movement of the actuator causes movement of the cam means in the cam track to pivot the door on the wall.

3,443,508
AUTOMATIC BEVERAGE BREWER
Donald S. Reynolds, Chicago, Harvey R. Krueger, Carpentersville, and Arthur A. Morgan, Palatine, Ill., assignors to Reynolds Products, Inc., Rolling Meadows, Ill., a corporation of Illinois
Filed Feb. 26, 1968, Ser. No. 708,121
Int. Cl. A47f 31/24, 31/36, 47/00
U.S. Cl. 99—282 23 Claims



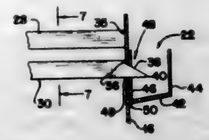
There is disclosed an automatic beverage brewing machine for brewing coffee or the like, comprising a water tank having a side wall and a bottom wall and a top wall, thermostatically controlled heating means disposed within the water tank for heating and maintaining water therein at a beverage brewing temperature, discharge means associated with the water tank for discharging hot water therefrom, means for receiving a beverage producing material to be covered by hot water from the discharge means, water inlet means for introducing cold water into the tank to cause hot water in the tank to be discharged therefrom in an amount corresponding to the amount of cold water introduced thereto, and valve means associated with the discharge means for preventing discharge of hot water from the water tank until the water therein reaches a predetermined level, the valve means being controlled by the water inlet means so that so long as cold water is being introduced into the tank the valve means prevents the discharge of hot water from the tank.

3,443,509
VENDING MACHINE
Julius W. Sandy, Bensenville, Ill., assignor to Microtherm Limited, London, England, a British company
Filed Jan. 25, 1967, Ser. No. 611,605
Int. Cl. A47j 36/24; A47f 1/04
U.S. Cl. 99—357 12 Claims



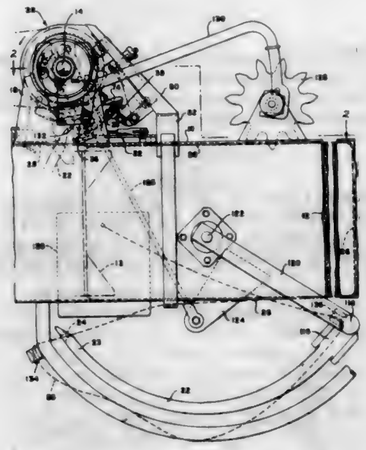
This disclosure relates to an integrated vending machine having a magazine for storing a plurality of food articles, and a mechanism for quickly heating a food article after selection thereof. A transport assembly is interposed between the magazine and the heating mechanism. The transport assembly includes an inclined ramp, spaced below the magazine, whereby a cylindrical food article, when dropped from the storage area, rolls to the end of the inclined ramp and then slides into the heating mechanism. A pair of parallel walls spaced apart by slightly more than the food articles, keep the food articles in aligned condition while being dropped and while rolling down the ramp.

3,443,510
GRAVY SAVER BARBECUE DEVICE
William E. Norton, 1406 Emerald, Odessa, Tex. 79760
Filed Mar. 1, 1967, Ser. No. 619,732
Int. Cl. A47j 27/58
U.S. Cl. 99—445 10 Claims



A barbecuing device having a grill assembly comprised of an upper apertured grill member and a lower apertured grill member with the apertures of each member being misaligned with respect to each other whereby meat drippings that normally fall from the meat into the fire are caught by the lower grill member and transferred to a gravy saver reservoir. Heat, smoke, and radiant energy can pass upwardly through the grill assembly and impinge upon the meat supported by the upper grill, yet the meat drippings cannot pass downwardly through the entire grill assembly. Thus the drippings are caught by the lower grill assembly and accordingly combustion of the meat drippings is eliminated.

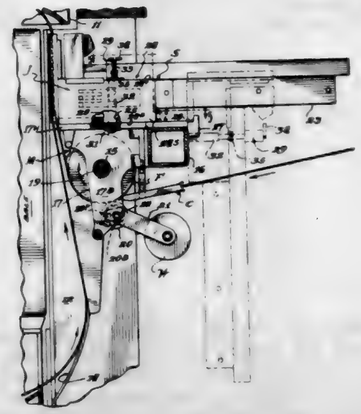
3,443,511
DRIVE SHAFT FOR KNOTTER MECHANISMS FOR BALER
Richard R. Eby, Ephrata, Pa., assignor to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed Aug. 16, 1967, Ser. No. 661,035
Int. Cl. B65b 13/08, 13/28
U.S. Cl. 100—22 8 Claims



A baler having means to tie the ends of strands of tying material extending around a bale formed within a case and through which the bale moves as formed, means to project the trailing end of said tying strands around the trailing end of a bale, a drive shaft extending transversely of said case through said tying means, power-transmitting means connected to said drive shaft, and complementary, coengaging spline means on said drive shaft and all of said strand-tying and projecting units and power-transmitting means, said spline means comprising a continuous series of a substantial number of similar parallel splines extending longitudinally along the circumferential surface of said shaft from end-to-end thereof and disposed evenly in adjacent side-by-side positions around the entire circumference of the shaft to engage complementary coengaging spline means within hubs in said strand-tying and projecting means and power-transmitting means, thereby providing extensive adjustable rotary positioning and keyed connection of said hubs of said means upon said shaft, as well as substitution of other means, having similarly splined hubs, upon said shaft.

3,443,512
ARTICULATED STRAPPING APPARATUS
Leo Peter Sauer and Gale Huson, Glenview, Ill., assignors to Signode Corporation, a corporation of Delaware
Filed Aug. 30, 1967, Ser. No. 664,338
Int. Cl. B65b 13/04
U.S. Cl. 100—26 7 Claims

Articulated strap sealer and feeder units are shown in multiple mounting arrays used in conjunction with the baling box of a baling press. The feeder units are powered from a common drive shaft, each feeder unit having urethane faced feed and back up wheels for a friction feed system. The back up wheel is loaded towards the feed wheel by an eccentric lever mounting arrangement. Each sealer unit is mounted separately and is locked in operating position by a pair of quick disconnect type bayonet locks that are carried in the sealer housing. An open type housing structure presents an accessible pivot ledge that is engageable upon a fixed hook to store the sealer in an inoperative vertical hanging position. The housing has a notched bottom wall allowing it to slide over the hook until the pivot ledge is engaged.

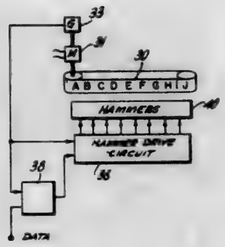


3,443,513
WOODEN FRAMING FABRICATION SYSTEM
John C. Jureit, Coral Gables, and Oscar Csakvary, Miami, Fla., assignors to Automated Building Components, Inc., Miami, Fla., a corporation of Florida
Filed Oct. 20, 1967, Ser. No. 676,943
Int. Cl. B65g 27/04
U.S. Cl. 100—53 17 Claims



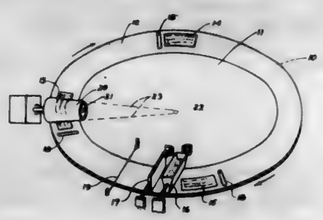
The fabrication system comprises a conveyor operable to advance a jig table carrying wooden frame members positioned thereon forming a truss, panel or the like to successively locate the longitudinally spaced butt joints thereof below a press platen for embedment of nailplates of the type having a plurality of teeth struck therefrom into the butt joints. The conveyor and press are controlled via a circuit including an index wheel actuated switch which automatically and sequentially stops the conveyor when successive butt joints are located below the press, actuates the press to embed the nailplates, and restarts the conveyor to advance the jig table to locate successive butt joints below the press. The index wheel is driven from the conveyor and has a plurality of recesses spaced a predetermined distance one from the other about the periphery thereof representing a predetermined distance of conveyor advance. A plurality of magnetic pins are inserted in selected recesses of the wheel and project to successively actuate the switch controlling the conveyor and press. The selectivity of the spacing between adjacent pins permits fabrication of trusses, panels or the like of different sizes and types.

3,443,514
PRINT HAMMER TIMING AND ENERGIZING MEANS IN HIGH SPEED PRINTERS
Harold S. Schwartz, White Plains, N.Y., assignor to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York
Filed May 17, 1967, Ser. No. 639,191
Int. Cl. B41j *1/16*
U.S. Cl. 101—93 8 Claims



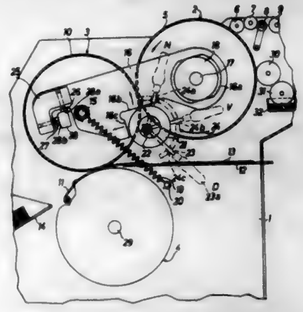
An alternating current generator is synchronously driven with the rotating drum in a high speed drum printer, or the circulating belt in a high speed chain printer, and the output of this generator is used to provide timing signals indicative of the character positions and to provide power for energizing the printer hammers.

3,443,515
APPARATUS FOR FLAT PLATE POWDER GRAVURE PRINTING
Daniel Smith, Riverdale, N.Y., and Norman S. Cassel, Ridgewood, N.J., assignors to Interchemical Corporation, New York, N.Y., a corporation of Ohio
Filed Aug. 3, 1966, Ser. No. 570,004
Int. Cl. B41b *19/00*
U.S. Cl. 101—150 12 Claims



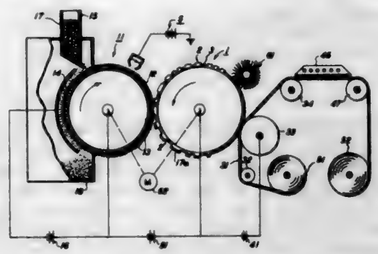
An electrostatic powder gravure printing apparatus where the gravure engraving is on a flat circular rotatable plate in operable proximity to a powder supplier, a doctoring device, an electrostatic charging means, and a device for bringing the substrate to be printed on close to the powdered engraving, the device being furnished with means for establishing an electrical field between the charged powder and the substrate. Frustums of cones and also cylinders may be the substrates.

3,443,516
ROTARY PRESS WITH TRANSFER ROLLER INTERRUPTER
Guenther Schnall, Munich, Germany, assignor to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany
Filed Aug. 16, 1966, Ser. No. 572,733
Claims priority, application Germany, Aug. 19, 1965, A 50,057
Int. Cl. B41f *7/02*
U.S. Cl. 101—218 12 Claims
An offset printing machine in which a blanket cylinder mounted on a carrier is movable relative to a master cylinder and a platen cylinder between three positions in which its peripheral surface respectively contacts neither, one or both peripheral surfaces of the other two cylinders, in which the carrier is biased by a spring to a position



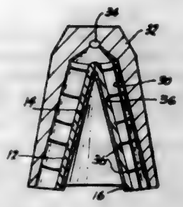
corresponding to one position of the blanket cylinder, and in which the carrier is movable by operating means to a pair of additional positions respectively corresponding to the other two positions of the blanket cylinder.

3,443,517
ELECTROSTATIC DUPLICATING SYSTEM EMPLOYING RELIEF PRINTING PLATE
Robert W. Gundlach, Victor, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Jan. 4, 1967, Ser. No. 607,175
Int. Cl. B41f *5/04, 13/02, 5/00*
U.S. Cl. 101—219 18 Claims



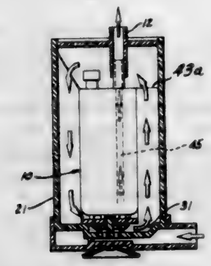
This invention relates to a process of relief printing which substitutes the use of dry powders for the conventionally used printing inks. As a result of established electrostatic fields of force toner particles are utilized as the printing medium.

3,443,518
MULTI-POINT IGNITION SYSTEM FOR SHAPED CHARGES
Donald W. Cross, P.O. Box 1642, Houston, Tex. 77001
Filed Sept. 26, 1967, Ser. No. 670,743
Int. Cl. F42b *1/02, 3/00*
U.S. Cl. 102—24 2 Claims



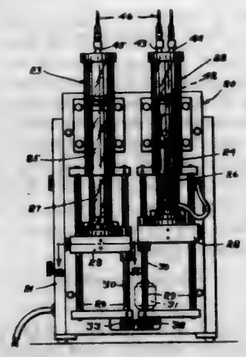
A shaped charge formed of a housing having a main block of explosive which is provided with a lined generally-conical cavity. A plurality of ignition points are positioned about the explosive to ignite the explosive in a predetermined manner to form a jet of optimum shape and velocity.

3,443,519
FUEL PUMP WITH COLLECTOR CHAMBER
Jack M. White, Florissant, Mo., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 11, 1967, Ser. No. 689,597
Int. Cl. F04b *23/04*; F04d *13/14*
U.S. Cl. 103—5 13 Claims



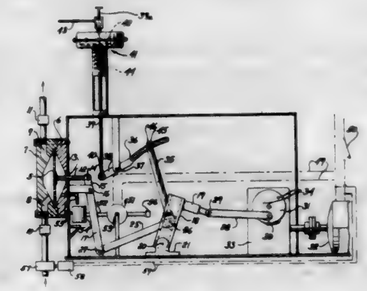
The invention relates to a novel fuel pump for use in a relatively flat tank. The pumping arrangement includes a pair of motor driven centrifugal pumps, at least one pump being positioned to discharge into a collector chamber associated with the drive motor. The second pump receives liquid from the collector chamber and discharges to a point of use. The device thereby maintains a substantially constant head of liquid on said second pump suction regardless of the quantity of liquid held in the fuel tank and concurrently cools the drive motor with pumped liquid.

3,443,520
GRADIENT FORMING PUMPS AND METHOD
Samuel Nejame, Jr., Medfield, Mass., assignor to International Equipment Company, Needham Heights, Mass., a corporation of Massachusetts
Filed Sept. 11, 1967, Ser. No. 666,709
Int. Cl. F04b *13/02, 19/06, 21/00*
U.S. Cl. 103—6 16 Claims



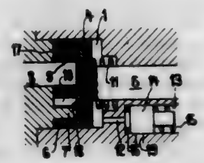
Method of and pumps for use in continuously and regularly changing gradients of two different concentrations of a substance by continuously stirring a predetermined volume of one concentration while adding the other concentration thereto at a predetermined flow rate and continuously displacing the stirred and mixed concentrations from that volume with the ratio between the displaced and added volumes being at least one-to-one with or without means for reducing at a predetermined flow rate the volume of concentrations being stirred, the flow rates being the same or different.

3,443,521
PUMPING EQUIPMENT AND OPERATING MECHANISM
Carl H. Stender, 361 Baker St., Corpus Christi, Tex. 78408
Filed Jan. 26, 1967, Ser. No. 612,031
Int. Cl. F04b *49/02*; F01b *25/26, 31/12*
U.S. Cl. 103—38 4 Claims



Pumping equipment including pump diaphragm, pump operating mechanism including means adjustable to vary the pump stroke and including means for shutting off the pump and also the pump supply line in the event of diaphragm leakage, and control system for adjusting the operating mechanism manually or automatically including means for varying the ratio of control adjustment.

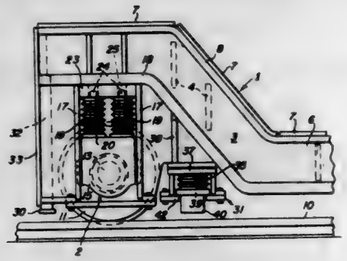
3,443,522
POSITIVE-DISPLACEMENT PUMP
Werner Schindler, 5 Berghausweg, 2500 Biel, Switzerland
Filed July 10, 1967, Ser. No. 652,202
Int. Cl. F04c *1/04*
U.S. Cl. 103—126 7 Claims



A positive displacement pump with automatic regulation of a leakage flow from its pressure side to its suction side, the leakage being controlled by the pump pressure.

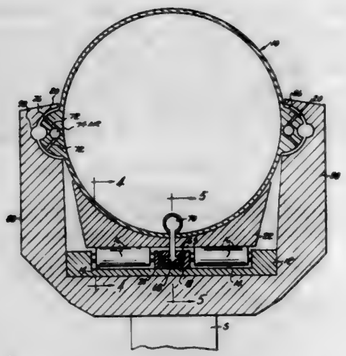
3,443,523
SHOCK ABSORBING DEVICE TRANSFERRING IMPACT FORCES DIRECTLY TO THE TRACK BED
Frank Kennedy, Johnstown Pa., assignor to United States Steel Corporation, a corporation of Delaware
Filed Jan. 31, 1967, Ser. No. 612,944
Int. Cl. B61f *1/08, 5/02, 13/00*
U.S. Cl. 104—1 9 Claims
A railway car subject to impact loading having a stop mounted on the chassis for engaging a railway rail or other support to limit downward springing movement of the car as the result of impact loading, and a shock ab-

sorber which engages the rail prior to its engagement by said stop and operates to cushion downward movement of the car. The shock absorber is preferably a compressible



rubber pad and in conjunction with the said stop enables the use of rubber pads in place of coil springs for supporting the car on the usual wheel and axle assemblies.

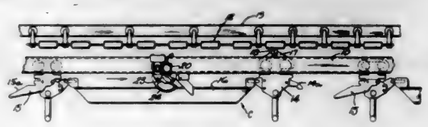
3,443,524
RAPID TRANSIT SYSTEM
Kurt P. Schneider, Detroit, Mich., assignor of one-third to Jack W. Schneider, Taylor, Mich.
Filed Aug. 22, 1967, Ser. No. 662,517
Int. Cl. B64f 3/00; A63g 1/00; B61d 15/00
U.S. Cl. 104—23 **10 Claims**



A rapid transit system comprises a plurality of interconnected flat bottom cars guided within semi-cylindrical side channels and supported by and propelled along a double row of track mounted rollers in combination with partial levitation. Lateral support is achieved by pneumatic bearings, plus a connector car undercarriage-mounted roller for additional lateral support in turns. To provide an initial rotation to the track-mounted rollers prior to the application of the full load of the cars, a combination of friction, magnetism and vacuum is employed on the lead car.

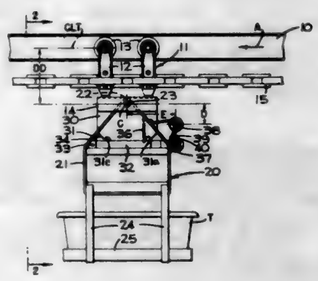
3,443,525
SWITCH ASSEMBLY FOR POWER AND FREE CONVEYOR
Fred E. Pean, Dayton, Ohio, assignor, by mesne assignments, to American Chain & Cable Company, Inc., New York, N.Y., a corporation of New York
Filed May 15, 1967, Ser. No. 638,308
Int. Cl. B61k 1/00
U.S. Cl. 104—88 **10 Claims**

The power and free conveyor system described herein comprises a main track along which a plurality of trolleys are moved when engaged by a conveyor. In order to count the passage of trolleys past a predetermined point or to produce a signal as the trolley passes a point, a switch is mounted on the main track and includes a switch lever that has a first position and a second position. An actuator lever is pivoted on the main track in advance of the switch and projects into the path of the trolley so as the trolley moves along the main track, the actuating lever is engaged



by the trolley to move the switch lever of the switch from the first position to the second position. A return lever is pivoted to the track beyond the switch and projects by gravity downwardly into the path of the trolley. When the trolley moves past the return lever, it swings the return lever to cause the return lever to engage the switch lever and return it to its first position.

3,443,526
STABILIZING MECHANISM FOR CARRIER IN CONVEYOR SYSTEM
James H. Gee, San Jose, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Mar. 9, 1967, Ser. No. 621,853
Int. Cl. B61j 1/06; B61b 3/00; E01b 25/22
U.S. Cl. 104—96 **17 Claims**

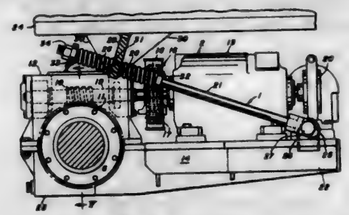


A carrier in a conveyor system which has horizontal and inclined sections of track is held level at all times. A chain driven trolley rides on the track and is oriented according to the orientation of the track. A carrier is pivotally suspended from the trolley and guide members hold the carrier level as the trolley orientation changes. A pivotal latch on the carrier is urged into engagement with a notched plate secured to the trolley to lock the carrier in different positions relative to the trolley, holding the carrier level with different orientations of the trolley. Cam members at each end of inclined track sections unlock the latch of a passing carrier.

3,443,527
RESILIENTLY SUPPORTED RAILWAY CAR WHEEL DRIVE MECHANISM
Frank Kennedy, Johnstown, Pa., assignor to United States Steel Corporation, a corporation of Delaware
Filed Feb. 13, 1967, Ser. No. 615,624
Int. Cl. B61c 7/00; B61f 5/30
U.S. Cl. 105—136 **6 Claims**

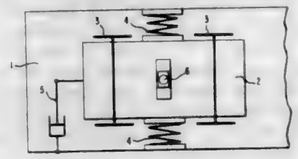
An axle drive for railway cars having a gear reducer drive unit rotatably supported at one end on the car axle and a torque arm suspension therefor in the form

of a resiliently extensible linkage system having horizontally space connections respectively with the reducer unit and with the car, its connection with the reducer unit



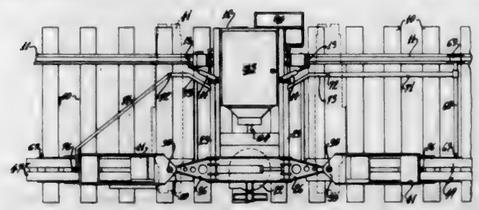
being at a point spaced outwardly with respect to the axle and its connection with the car being at a point spaced vertically above the axle.

3,443,528
DAMPENED RAILWAY TRUCK
Johannes Martin Lipsius, Kassel, and Eugen Spehr, Kassel-Harleshausen, Germany, assignors to Rheinstahl Henschel A.G., Kassel, Germany, a corporation of Germany
Continuation-in-part of application Ser. No. 470,464, July 8, 1965. This application June 12, 1967, Ser. No. 657,450
Claims priority, application Germany, Feb. 26, 1965, H 51,346
Int. Cl. B61f 5/10, 5/20, 5/12
U.S. Cl. 105—171 **11 Claims**



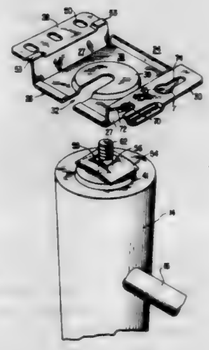
The present invention relates to a railway truck construction having a transverse spring suspension system between the truck and a vehicle frame supported thereby, the spring system being overcritical at a high traveling speed, and including at least one vibration damper connected between the vehicle frame and the truck, the damper having a damping force which is dependent upon the speed of the transverse vibrations or oscillations, whereby the transverse vibrations are damped at low traveling speeds.

3,443,529
RAILROAD SETOFF APPARATUS
William H. Moorhead, Jr., and Henry W. Copeland, Jr., Montgomery, Ala., assignors to Kershaw Manufacturing Co., Inc., a corporation of Alabama
Filed June 7, 1967, Ser. No. 644,379
Int. Cl. B61c 11/04; E01b 27/00
U.S. Cl. 105—177 **10 Claims**



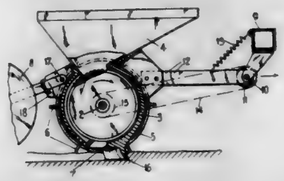
Railroad setoff apparatus having a main frame with auxiliary frames mounted for pivotal movement at opposite sides thereof and movable selectively to a first position alongside the main frame to a second position outwardly of the main frame. Actuating means connects the main frame to the auxiliary frames so that the main frame can support the auxiliary frame or the auxiliary frames can support the main frame. Movable supports are carried by the auxiliary frames for moving the apparatus transversely of the rails or longitudinally of the rails.

3,443,530
FURNITURE FASTENER
Raymond T. Carlson, Lookout Mountain, Ga. (Lookout Mountain, Tenn. 37350)
Continuation-in-part of application Ser. No. 520,266, Jan. 12, 1966. This application July 6, 1967, Ser. No. 651,557
Int. Cl. A47b 3/06; A47c 7/00
U.S. Cl. 108—156 **11 Claims**



A mounting means for attaching table legs to table tops includes a plate and a leg having a bolt in its upper end. Means are provided permitting any degree of rotational adjustment of the leg for alignment with decorative members or supports to be inserted into leg holes.

3,443,531
SOWING ELEMENT FOR A PRECISION SOWING MACHINE
Cornelis J. Steketee, Korterveg 11, Driewegen, Netherlands
Filed May 2, 1966, Ser. No. 547,003
Claims priority, application Netherlands, May 18, 1965, 6506277
Int. Cl. A01c 7/18
U.S. Cl. 111—36 **1 Claim**



This invention relates to seed sowing machines or planters having at least one seed dispensing drum which may be driven by a travelling roller or wheel engaging the ground or by a separate, positive power source, such as the power take-off of tractor employed for pulling said

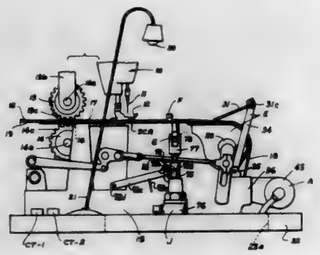
seed sowing machine. Each seed dispensing drum may be connected to a travelling roller, or if said roller does not properly engage the ground, the drum may be connected to the separate, positive power source, there being at least one travelling roller for each seed sowing drum.

3,443,532

APPARATUS AND METHOD FOR MANIPULATING NARROW ELASTIC FABRIC

Robert P. Posey, Greenville, and Price C. Faw, Piedmont, S.C., assignors to Stone Manufacturing Co., Inc., Greenville, S.C., a corporation of South Carolina

Filed May 31, 1966, Ser. No. 554,154
Int. Cl. D05b *23/00, 27/12, 1/02*
U.S. Cl. 112—2 16 Claims



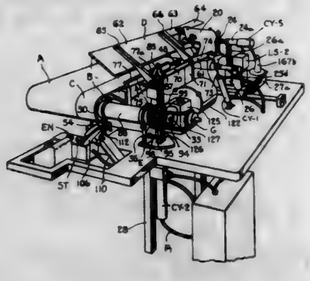
Means for sewing a predetermined number of stitches without elastic are provided in an apparatus capable of subsequently inserting elastic without tension. Means for pretensioning the elastic are provided together with a knife assembly for shearing elastic in a relaxed state at a predetermined point near the completion of the sewing operation.

3,443,533

GARMENT HANDLING DEVICE FOR AUTOMATICALLY PERFORMING SPACED SUCCESSIVE SEWING OPERATIONS

Robert P. Posey, Greenville, and Price C. Faw, Piedmont, S.C., assignors to Stone Manufacturing Co. Inc., Greenville, S.C., a corporation of South Carolina

Filed July 5, 1966, Ser. No. 562,828
Int. Cl. D05b *23/00, 27/00*
U.S. Cl. 112—2 13 Claims



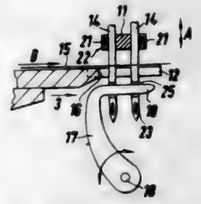
A garment handling device for automatically performing spaced successive sewing operations on a garment. Means are provided for setting the spacing between successive sewing operations, as well as the number of consecutive sewing operations so that once the garment is placed on the conveyor such is automatically shifted under the sewing machine for perfoming the sewing operations.

3,443,534

TUFTING MACHINES

Ernest K. Lund, Accrington, England, assignor to Singer-Cobble Limited, Blackburn, Lancashire, England

Filed Mar. 17, 1966, Ser. No. 535,113
Claims priority, application Great Britain, Mar. 19, 1965, 11,648/65
Int. Cl. G05c *15/10, 3/02, 17/02*
U.S. Cl. 112—79 3 Claims



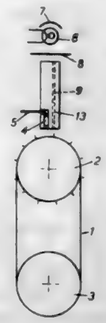
A tufting machine for efficiently producing pile on a backing fabric is disclosed. The machine is of the type having a plate across which the backing fabric is drawn so that it is perforated by a multitude of needles carried upon a reciprocating needle bar. The plate has apertures through which the needles protrude during a portion of the reciprocating motion of the needle bar. Beneath the plate a plurality of loopers are arranged to engage the yarns carried by the needles which protrude through the backing fabric and the apertures in the plate. Upon retraction of the needles the yarns form loops on one side of the backing fabric. The invention resides in disposing the needles in sets on the needle bar and providing a looper for each set of needles. The looper is mounted to reciprocate and each set of needles is positioned with respect to its looper so that the looper in one stroke engages the yarns carried by all the needles of the set and thereby causes a plurality of loops to be simultaneously formed upon retraction of the needles.

3,443,535

TUFTING MACHINE PATTERN MEANS USING INFRARED RADIATION DETECTORS

Ronald E. Ellison, Langho, and John Pritchard, Rishton, England, assignors to Ellison Tufting Machinery Limited, Blackburn, Lancashire, England

Filed Mar. 28, 1966, Ser. No. 538,019
Claims priority, application Great Britain, Mar. 30, 1965, 13,365/65
Int. Cl. D05c *15/26*
U.S. Cl. 112—79 3 Claims



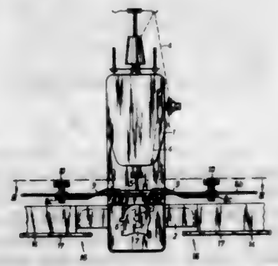
A device for controlling a supply of yarn to the needles of a pattern-producing tufting machine comprising a pattern moved synchronously with the material made by the machine, and having infrared reflecting and absorbing areas, a row of lamps located to supply said pattern with infrared radiation, light guides positioned between said lamps and said pattern, filters for passing only infrared radiation, positioned between said light guides and said lamps, a plurality of infrared sensitive cells and means mounting said infrared sensitive cells in said light guides adjacent said pattern, whereby infrared light passes through said light guides and is reflected from said infrared reflecting areas into said infrared sensitive cells.

3,443,536

EMBROIDERING MACHINE WITH A SPREADING AND CLAMPING DEVICE FOR HOSE-SHAPED MATERIAL TO BE EMBROIDERED

Hans Rolnufs, Krefeld, and Franz Hoever, Aldekerk, Germany, assignors to Maschinenfabrik Carl Zangs A.G., Krefeld, Germany

Filed Dec. 5, 1966, Ser. No. 599,079
Claims priority, application Germany, Dec. 7, 1965, M 53,501
Int. Cl. D05c *7/04, 9/04*
U.S. Cl. 112—103 3 Claims



Embroidering machine having a frame with an arm projecting therefrom supporting the machine bobbin underneath the embroidery needle. A table is provided in about the plane of the top of the arm and has a removeable section extending along the sides of the arm and across at the outer end of the arm so the section can be removed to expose the arm to receive a tubular device on which tubular material can be placed.

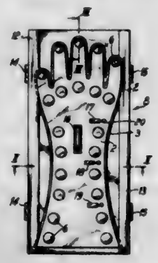
Support means for an embroidering frame used for flat work when the table section is in place, and the tubular frame when the table section is removed are provided above the plane of the table.

3,443,537

SEWING GOODS AND THE LIKE TENTERING FRAME AND ASSEMBLY DEVICE THEREFOR

Ernst Becker, Darmstadt, Germany, and Karl Notz, Kulmbach, Upper Franconia, Germany, assignors to Quick-Rotan Becker & Co., Darmstadt, Germany, a firm of Germany

Filed Dec. 20, 1966, Ser. No. 603,208
Claims priority, application Germany, Dec. 22, 1965, Q 877
Int. Cl. D05b *21/00*
U.S. Cl. 112—103 7 Claims



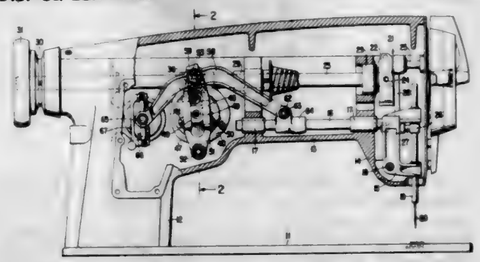
A workpiece tentering frame comprises a lower and upper clamping plate having contours conforming with the contour of a workpiece to be clamped therebetween by a plurality of permanent magnets attracting one plate against the other in the aligned position, with the workpiece having a constant edge zone projecting beyond the edges of the plates. The frame and workpiece are assembled by means of an assembly device comprising a base plate having secured thereto, in the order named, first and second assembly plates having recesses conforming, respectively to the contours of the lower clamping plate and the workpiece. A third assembly plate may be provided hingedly connected to the second plate and having a recess conforming to the contour of the upper clamping plate.

3,443,538

NEEDLE JOGGING MECHANISMS FOR SEWING MACHINES

Ernst Diekiele Wulbrede and Erich M. Willenbacher, Karlsruhe-Hagsfeld, and Dieter K. Gabler, Neudorf, Germany, assignors to The Singer Company, New York, N.Y., a corporation of New Jersey

Filed June 13, 1967, Ser. No. 645,803
Int. Cl. D05b *3/02*
U.S. Cl. 112—158 5 Claims



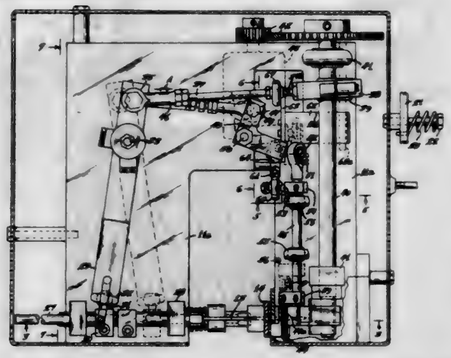
A bracket having a slideway which embraces a bearing concentric with a cam, and cam followers at each end of the bracket contacting a cam surface of the cam to impart lateral oscillation to a needle bar gate in a sewing machine without "floating away" of the cam followers from the cam surface of the cam.

3,443,539

SEWING MACHINE

Edward H. Scharmer, Jr., Pine City, Minn., assignor to Doughboy Industries, Inc., New Richmond, Wis., a corporation of Wisconsin

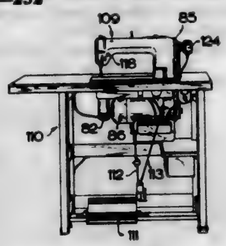
Filed July 20, 1967, Ser. No. 654,873
Int. Cl. D05b *1/00, 13/00, 1/06*
U.S. Cl. 112—169 6 Claims



A portable sewing machine with a reciprocating needle and oscillating looper driven in prefixed phase relationship from a single powered eccentric by sensing and apply-

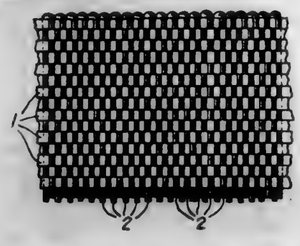
ing linear motion produced by the cam in one direction to the reciprocation of the needle and looper, and by sensing and applying linear motion produced by the cam in a transverse direction to the rocking of the looper; and a ring and handle over the center of gravity, the handle having an alternate position in front of the sewing machine.

3,443,540
THREAD TRIMMING DEVICE FOR LOCKSTITCH SEWING MACHINE
Franz Hasnemann, Pinkstheide, Günter Landwehr, Sennestadt, Wolfgang Sugland, Herford, and Günter Myska, Bielefeld, Germany, assignors to Kochs Adlernahmaschinen Werke A.G., Bielefeld, Germany
Filed Feb. 27, 1967, Ser. No. 621,394
Claims priority, application Germany, Feb. 25, 1966, K 58,546
Int. Cl. D05b *65/02*
U.S. Cl. 112—252 14 Claims



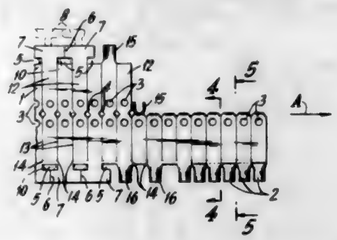
A device for the simultaneous trimming of the needle thread and the bobbin thread underneath a workpiece after the completion of the seam, for use with lockstitch sewing machines. An arcuate blade oscillates concentrically about the looper, and cooperates with a stationary blade controlled by the driving and stop means of the sewing machine by means of cam discs, electromagnets or fluid motors. This device can be additionally installed in existing sewing machines without any special provision, and can also be used in lockstitch sewing machines provided with a narrow work-supporting arm and which are further provided in the usual manner with, or are without, an own feed dog device, to be used in automatic sewing systems, whereby either the workpiece is directed past the sewing machine or the sewing machine is directed past the workpiece by means of a special feeding device.

3,443,541
SYNTHETIC CARPET BACKING
Sohinder Nath Chopra, Drummondville, Quebec, Canada, assignor to Chemcell (1963) Limited, Montreal, Quebec, Canada
Filed Oct. 20, 1965, Ser. No. 498,389
Claims priority, application Canada, Sept. 16, 1965, 940,768; Great Britain, Dec. 29, 1964, 52,691/64
Int. Cl. D05c *17/02*; D04h *11/00*; D03d *15/00*
U.S. Cl. 112—410 7 Claims



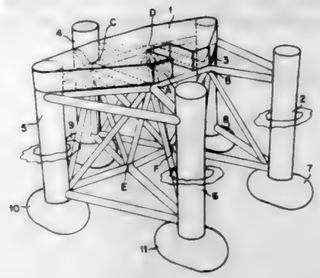
A backing or a fabric with a backing, which has uniform flat synthetic resin continuous monofilaments as warp ends, and bulky low-twist synthetic resin continuous multifilament crimped yarns, as filling ends. The warp ends are over-filled to eliminate spacing. The filling ends are regularly spaced apart. With this arrangement, the width-wise shrinkage is eliminated and, also the fabric has less tendency to slip or fray.

3,443,542
METHOD OF FORMING WIDE CRIMP BLADE
Ferdinand Klumpp, Jr., Union, and Louis Pfeifer, Springfield, N.J., assignors to Heyman Manufacturing Company, Kenilworth, N.J., a corporation of New Jersey
Original application Feb. 12, 1964, Ser. No. 344,473, now Patent No. 3,309,178, dated Mar. 14, 1967. Divided and this application Dec. 20, 1966, Ser. No. 632,836
Int. Cl. B21d *53/36*
U.S. Cl. 113—119 8 Claims



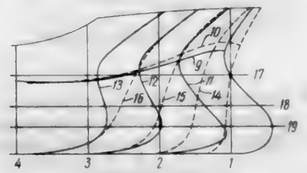
The present disclosure is drawn to a method of progressively forming a connected strip of electrical contact blades from a metal strip which generally comprises the steps of making a first crimp arm cut on one side of the strip, a second crimp arm cut on the other end of the strip, cutting consecutive juxtaposed blade widths joined on the same half of the strip, bending a first blade crimping arm at approximately a right angle, bending the succeeding blades' crimping arms at a right angle to the blade portion in a direction opposite from the first blades' crimping arms and folding the blade portions to from a line of attached blades and crimping arms in strip form.

3,443,543
SEMI-SUBMERSIBLE FLOATING STRUCTURE OF HIGH STABILITY
Pierre Willm, Rueil-Malmaison, Hauts-de-Seine, and René Delmas, Paris, France, assignors to Institut Francais du Petrole des Carburants et Lubrifiants, Rueil-Malmaison, Hauts-de-Seine, France
Filed Mar. 2, 1967, Ser. No. 619,985
Claims priority, application France, Mar. 3, 1966, 51,950
Int. Cl. B63b *35/44*
U.S. Cl. 114—.5 7 Claims



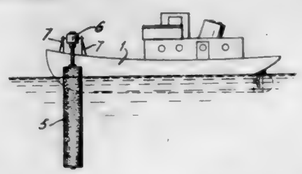
This structure, comprising at its upper part a working plaform supported by buoyancy elements each of which being constituted by a vertical column integral at its lower end with a caisson, the different columns being interconnected by a cross bracing system, is distinctive in that the buoyancy elements are located at the respective apices of a substantially regular pentagon and the caissons are all elongated in a direction parallel to a symmetry axis of the pentagon, with a length of these caissons smaller than the length of the side of the pentagon, and with a cross-bracing system adapted to limit a disengagement space between two adjacent columns of the structure which are symmetrical with respect to the vertical plane containing said symmetry axis.

3,443,544
SHAPE OF SHIP'S BOW
Vladimir Nikolaevich Begizov, Ul. Frunze 9, kv. 14, Leningrad, U.S.S.R.
Filed July 13, 1967, Ser. No. 653,186
Int. Cl. B63b *1/00*
U.S. Cl. 114—56 4 Claims



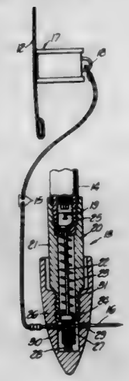
A bow of a ship having a curvature in transverse planes perpendicular to the center plane of the ship, which is concave inwardly above the load water line and convex outwardly below the ballast water line with a smooth curve reversal portion therebetween, the minimum ordinates of the concave portions being above the wave crest line of the bow, said bow having a curvature in planes parallel to the center plane of the ship which is concave rearwardly above the load water line and convex forwardly therebelow with a smooth curve reversal portion between the load water line and the ballast water line.

3,443,545
ARRANGEMENT FOR CLEANING OF A SHIP'S HULL OF MARINE GROWTH
Jan Vadseth, Kr. Marthas plass 1, Oslo 1, Norway
Filed Dec. 2, 1966, Ser. No. 598,726
Claims priority, application Norway, Dec. 3, 1965, 160,748
Int. Cl. B63b *59/00*
U.S. Cl. 114—222 2 Claims



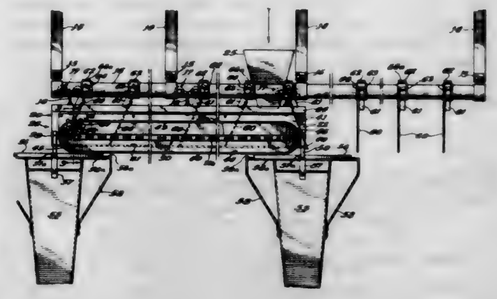
An arrangement for cleaning a ship's hull of marine growth which consists of a device mounted on an auxiliary craft and comprising an elongated, cylindrical brush supported in substantially vertical position and rotatable by means of a motor, characterized in that the brush is supported by a Cardan type suspension at its upper end for free pendulum movement, hanging down in the water from the auxiliary craft and arranged to be kept against the side of the ship to be cleaned by reduced static pressure caused by high velocity currents in the water between the ship's side and the brush induced by the rotation of the brush. Preferably the brush is suspended from the bow of the auxiliary craft, which craft is provided with anti-friction means for abutment against the ship's side to maintain the desired spacing. One or more further brushes may be attached at the lower end of the first brush, the further brush or brushes being angularly adjusted in relation to the axis of the first brush. The first brush may have a telescopic length adjustment to facilitate bringing the further brush or brushes into contact with the ship. A buoyancy container may be affixed at the lower end of the second brush.

3,443,546
CAR THEFT PREVENTION APPARATUS
Neal B. Couey, 7453 Victoria Ave., Highland, Calif. 92346
Filed Sept. 5, 1967, Ser. No. 665,630
Int. Cl. G08b *13/12*
U.S. Cl. 116—81 6 Claims



A valve control device is threaded onto the valve stem of one of the automobile tires. An actuating cord is connected between the valve control device and a connection post on the adjacent underside of the fender. Rotation of the wheel during theft of the auto actuates the valve control device to allow air to escape from the tire.

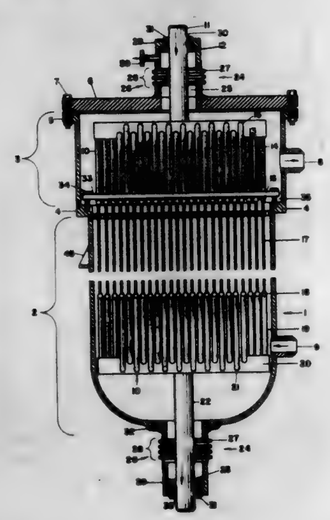
3,443,547
SHUTTLE TYPE ANIMAL FEEDER
Robert G. Ferris, Harvard, and Allen K. Gillette, Belvidere, Ill., assignors to Starline, Inc., a corporation of Delaware
Filed Nov. 4, 1966, Ser. No. 592,044
Int. Cl. A01k *5/00*; B65g *25/10*
U.S. Cl. 119—52 3 Claims



A shuttle type animal feeding apparatus including a trough that receives material thereon from a central

supply source, and which is reciprocable back and forth over a plurality of animal feeding stations and beneath first and second sets of pivoted sweep members at opposite sides of the supply source which discharge material from opposite ends of the trough to the feeding stations, there being a novel drive means for reciprocating the trough.

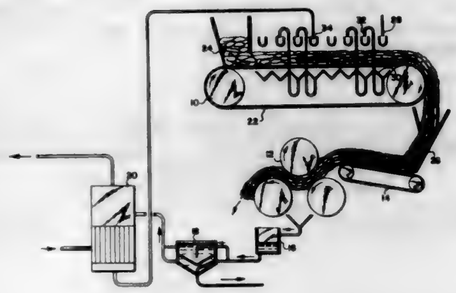
3,443,548
HIGH TEMPERATURE AND HIGH PRESSURE STEAM GENERATOR
Joseph G. Rich and Robert S. Rich, Louisville, Ky., assignors to Henry Vogt Machine Company, Inc., Louisville, Ky., a corporation of Kentucky
Filed Jan. 23, 1968, Ser. No. 699,963
Int. Cl. F22b *1/08*; F28f *7/00*; F28d *7/10*
U.S. Cl. 122—32 8 Claims



Discloses an unfired, high pressure and high temperature fire tube steam generator including a removable tube bundle assembly fixedly attached at either end in an upright high pressure cylindrical shell. The tube bundle assembly consists of a series of layers of tubes in which each layer communicates at both ends with transverse tubular headers, which in turn, are connected to a high pressure manifold in communication with a tubular high pressure inlet and outlet, respectively. The high pressure cylindrical shell has tubular extensions of smaller diameter relative to the diamter of the shell, which contain a metallic packless expansion joint as an integral part of the wall, to compensate for thermal expansion and contraction of the tube bundle assembly relative to the shell.

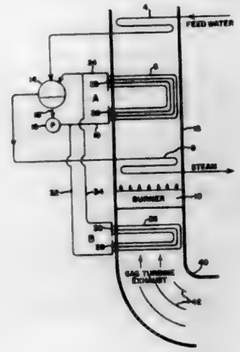
3,443,549
JUICE-EXTRACTING METHOD AND APPARATUS
Francis Dambrine, Lille, Nord, France, assignor to Societe Fives Lille-Cail, Paris, France
Filed July 28, 1966, Ser. No. 568,583
Claims priority, application France, Aug. 3, 1965, 27,003
Int. Cl. C13d *1/02*; B01d *12/00*
U.S. Cl. 127—5 10 Claims

Apparatus and method in which the sugar-containing material is extracted by passing it under liquid distribution points with the liquid distributed at the successive points being progressively more dilute as the material is further extracted. The exhausted material at the end of the extraction path is then pressed, the press water collected, defecated and concentrated before being returned to one of the intermediate distribution points. The point



at which the concentrated liquid is returned is chosen to correspond approximately to the concentration of the liquid in the apparatus near the point of distribution.

3,443,550
TWO-SECTION HEAT RECOVERY STEAM GENERATOR
Howard F. May, Scotia, and John M. Kovacik, Burnt Hills, N.Y., assignors to General Electric Company, a corporation of New York
Filed May 5, 1967, Ser. No. 636,529
Int. Cl. F22d *1/02*
U.S. Cl. 122—7 5 Claims

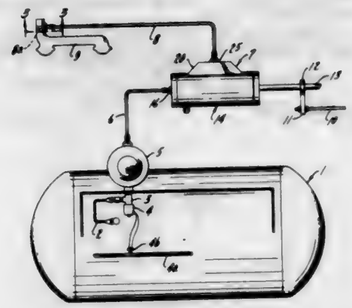


Exhaust fired heat recovery steam generator having parallel flow paths, one path disposed on the hot downstream side of an exhaust firing burner and one path disposed on the cooler upstream side thereof.

3,443,551
DIESEL ENGINE PROPANE ACCESSORY
Marvin T. Laubach, Henke's Trailer Court, Milford, Ill. 60953
Filed Dec. 7, 1966, Ser. No. 599,861
Int. Cl. F02b *43/10*
U.S. Cl. 123—27 4 Claims

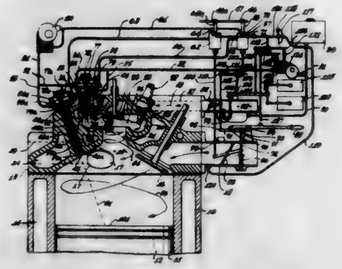
A means and method of operating a diesel engine including a metering valve linked to the throttle and delivering propane at low pressure to the engine intake manifold in response to throttle position, and the method

of delivering propane vapor at 100 p.s.i. to a regulator delivering said propane vapor from the regulator to the metering valve at 6 ounces per square inch, varying the



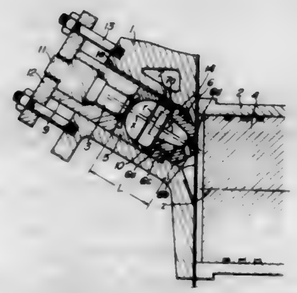
volume of said propane vapor delivered from the metering valve to the engine air intake manifold in direct response to the position of the engine throttle.

3,443,552
INTERNAL COMBUSTION ENGINE, FUEL SUPPLY SYSTEM AND PROCESS
Ernest A. von Seggern, 1051 E. Angeleno, Burbank, Calif. 91501, and Henry E. von Seggern, Rte. 2, Box 1910, Escondido, Calif. 92025
Continuation-in-part of applications Ser. No. 369,091, May 21, 1964, Ser. No. 398,219, Sept. 22, 1964, Ser. No. 451,720, Apr. 29, 1965, Ser. No. 466,352, June 23, 1965, Ser. No. 494,653, Oct. 11, 1965, and Ser. No. 553,425, May 27, 1966. This application Dec. 13, 1966, Ser. No. 601,481
Int. Cl. F02b *19/08, 23/10, 15/00*
U.S. Cl. 123—32 14 Claims



An engine of the spark ignition type, with fuel injection and throttled air supply, is provided in which heated auxiliary air is added to the combustion substantially during the time of maximum temperature and pressure in the engine cycle. The fuel, which is delivered to the engine in a liquid, unatomized state during any time between the beginning of the intake cycle to the end of the compression cycle (depending on operating conditions) is heated, while in the liquid state in the presence of air prior to the initiation of combustion and is subsequently burned in a flame induced, progressive surface combustion reaction in conjunction with heated auxiliary air in which the combustion takes place in a localized manner and progresses from an initial reaction with an excess of fuel to a final reaction with an excess of air. Means for establishing the surface type combustion include an ignition chamber of toroidal design, combined with an organized circulation of working fluid in the cylinder, and a non-atomizing fuel supply system which delivers liquid fuel to the top of the piston in variable quantity and at variable time prior to ignition. A dual fuel injection and a single fuel injection system are shown, combined with means for providing a pre-mixed fuel-air mixture for starting the engine. The engine is designed primarily to operate with white (unleaded) fuel such as gasoline, at high compression and power is controlled by varying both the quantity of fuel injected and the air supplied thereto.

3,443,553
PRECOMBUSTION CHAMBER OF DIESEL ENGINE
Tadashi Yamada, Saita-shi, and Shinichi Tsujimoto, Takatsuki-shi, Japan, assignors to Tadao Yamaoka, Yamatocho, Ashiya-shi, Japan
Filed Dec. 4, 1967, Ser. No. 687,568
Int. Cl. F02b *19/08*
U.S. Cl. 123—32 2 Claims

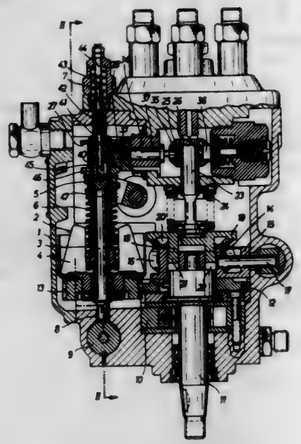


A precombustion chamber for a diesel engine, consisting of a front chamber section and a rear chamber section in communication with each other with the center line of the former being offset from the center line of the latter in parallel relation thereto and with an annular flat shoulder defined therebetween, said front chamber section being in communication with the main combustion chamber in the cylinder of the engine through a main passage, said rear chamber section having that end remote from said main passage shaped in a semispherical configuration with a fuel injection nozzle open therein, the center line of said rear chamber section being substantially in alignment with the center line of said fuel injection nozzle and inclined at a suitable angle with respect to the center line of the cylinder, the opening of said main passage in said front chamber section being located in the proximity of the center line of said fuel injection nozzle, and in the wall of said front chamber section there being formed a communication channel having one end open in said rear chamber section at a point on said annular flat shoulder and the other end open in said front chamber section or said main combustion chamber in the cylinder.

3,443,554
FUEL INJECTION PUMP
Rudolf Kleeberger, Munich, Germany, assignor to Kugelfischer Georg Schafer & Co., Schweinfurt, Germany
Filed Apr. 6, 1967, Ser. No. 628,951
Int. Cl. F02d *1/04*
U.S. Cl. 123—140 10 Claims

A fuel injection pump for internal combustion engines in which the position of a delivery regulating member is

controlled by two simultaneously acting speed responsive devices. One of the devices being a centrifugal governor



and the other being a hydraulic adjusting piston, the axial position of which is determined by the speed-dependent delivery pressure of an engine driven fuel feed pump.

3,443,555

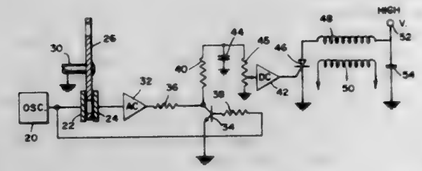
IGNITION SYSTEM

Donald C. Gove, Manchester, Mass., assignor to Ikor Incorporated, a corporation of Massachusetts

Filed May 22, 1967, Ser. No. 640,284

Int. Cl. F02p *3/00*

U.S. Cl. 123—148 **7 Claims**



An ignition system for internal combustion engine, in which system current flow through an ignition coil is controlled by a silicon controlled rectifier. The rectifier is triggered by pulses derived by a circuit including an oscillator connected to one electrode of a capacitor, the other capacitor electrode being coupled to the rectifier. A perforated electrostatic shield, rotatable in synchronism with the engine, is disposed between the capacitor electrodes to couple and decouple the output of the oscillator across the electrodes depending on sequential movement of the solid and perforate portions of the shield between the electrodes. To enhance operation, a synchronous detector matches the signals directly from the oscillator with the signals coupled across the capacitor electrodes, and the matched signals are then rectified to provide corresponding DC pulses for triggering the controlled rectifier.

3,443,556

ELECTRONIC CONDENSER DISCHARGE IGNITION CIRCUIT WITH AUTOMATIC INPUT RECOVERY PROTECTION DEVICE, IN PARTICULAR, FOR VEHICLES

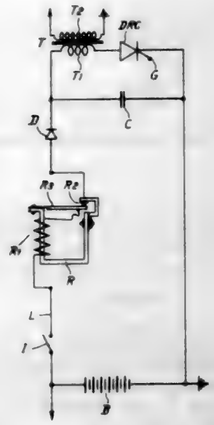
Teodoro Vadala, Monza, Italy, assignor to Fabbrica Italiana Magneti Marelli S.p.A., Milan, Italy, a corporation of Italy

Filed May 23, 1967, Ser. No. 640,545

Claims priority, application Italy, June 1, 1966, 18,556/66

Int. Cl. F02p *11/00*

U.S. Cl. 123—148 **1 Claim**



A circuit breaker responsive to abnormal current in an ignition circuit opens to protect elements in that circuit from overload.

3,443,557

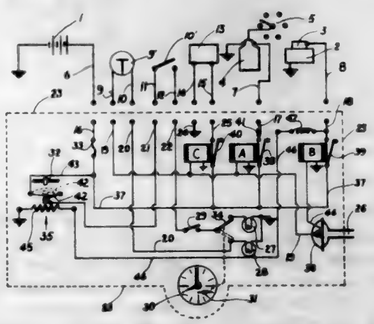
AUTOMATIC STARTING DEVICE FOR INTERNAL COMBUSTION ENGINES

René Hébert, 2583 Duquesne St., Montreal, Quebec, Canada

Filed Mar. 8, 1967, Ser. No. 621,519

Int. Cl. F02n *11/08*

U.S. Cl. 123—179 **1 Claim**



An automatic starting system for an internal combustion engine comprising a starter relay under the control for a vacuum switch opened by the rotating motor engine, and a time delay manual reset thermal switch including a heating element connected to the starter circuit, and operable to open the switching part of the thermal switch after a few seconds of operation of the starter, said thermal switch once opened, cutting off all the circuits of the starting system until it is manually reset, thereby avoiding any drain on the automobile battery and any damage to the starter which might result from repeated attempts at starting the engine.

3,443,558

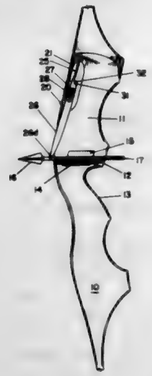
ARROW ACTUATED CLICKER FOR ARCHERY BOW

Maynard W. Peck, 326 N. Washington St., Janesville, Wis. 53545

Filed Feb. 15, 1967, Ser. No. 616,367

Int. Cl. F41b *5/00*

U.S. Cl. 124—24 **3 Claims**



A device secured in the shooting window in a hunting bow and having a spring tensioned, depending trigger arm maintained in a lower cocked position while a broadhead hunting arrow is being drawn in the bow, said trigger arm being tripped by the head of the hunting arrow as the arrow reaches full draw whereby the movement of the trigger arm produces an audible "click" indicating that the arrow has reached full draw for release.

3,443,559

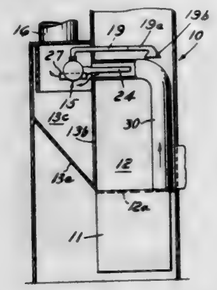
FURNACE HUMIDIFIER

Stanley J. Pollick, 5268 Botsford, Warren, Mich. 48092

Continuation-in-part of application Ser. No. 604,675, Dec. 27, 1966. This application Apr. 2, 1968, Ser. No. 724,672

Int. Cl. F24h *9/00*; **F23d** *13/24*

U.S. Cl. 126—113 **15 Claims**



A humidifier comprising a closed casing having a water inlet and a steam outlet which is positioned in the path of the hot exhaust gases of the furnace. A plurality of tubes extend horizontally from the casing and have closed outer ends, the tubes being substantially at the level of the water in the casing. In addition, a plurality of open ended tubes extend generally horizontally to the casing and are surrounded by water within the casing. The hot gases flowing over the two sets of tubes produce steam which passes into the hot air flue of the furnace.

3,443,560

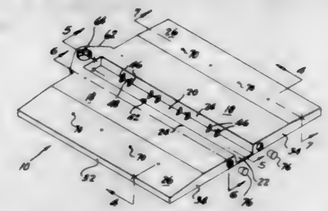
HYDRO-MASSAGE APPLIANCE

Clarence R. Munroe, Oregon City, and Homer K. Williams, Jr., Roseburg, Oreg., assignors to Stim-O-Lator, Inc., Roseburg, Oreg., a corporation of Oregon

Filed Jan. 20, 1967, Ser. No. 610,514

Int. Cl. A61h *9/00, 33/02*; **A47k** *3/00*

U.S. Cl. 128—66 **6 Claims**



A hydro-massage device for submergence in a conventional bathtub, said device comprising a bather's supporting member having a central, spine clearing channel in its upper surface, closed passages on its underside adjacent said channel, open bottom passages on each side of said closed passages, and perforations providing communication between said closed passages, said channel and said open bottom passages.

3,443,561

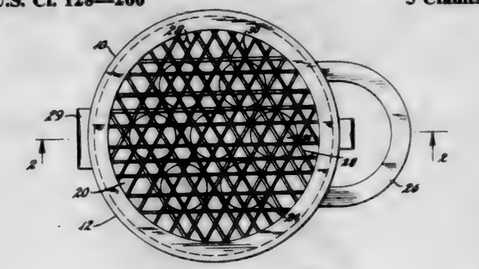
SUBCUTANEOUS IMPLANT DEVICE

Jack Owen Reed, Englewood, N.J., assignor to Phytogen Products, Inc., Mamaroneck, N.Y., a corporation of Delaware

Filed Aug. 23, 1966, Ser. No. 574,444

Int. Cl. A61m *31/00, 37/00*

U.S. Cl. 128—260 **5 Claims**



A depot pellet encasement adapted for subcutaneous implantation with foraminous top and bottom surfaces to permit the enclosed depot pellet to dissolve away in the body fluids yet retain solid fragments of the pellet inside the encasement. An eye member on the encasement permits ready removal from the implantation site.

3,443,562

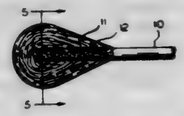
SWAB TYPE APPLICATOR

Harry C. Gustafson, Milwaukee, Wis., assignor to Fuller Laboratories, Inc., Eden Prairie, Minn., a corporation of Minnesota

Filed Mar. 8, 1967, Ser. No. 633,327

Int. Cl. A61m *35/00*

U.S. Cl. 128—269 **10 Claims**



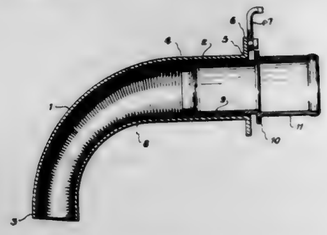
A swab or medical type with swab fibres imbedded in the swab carrying sticks. They are imbedded by using a solvent for the plastic sticks. The swabs are moistened during contouring to improve the strength of the sticks.

3,443,563
VAGINAL SUPPOSITORY
Atsumi Ishikawa, 6-30 Kagano 3-chome, Morioka-shi, Japan; Yuichi Ishida, 36 Tsukagoshi-Suehirocho, Warabi-shi Japan, and Nobuharu Nakanishi, 1015 Maeda, Hatogayacho, Kitaadachi-gun, Saitama-ken, Japan
Filed Aug. 29, 1966, Ser. No. 575,611
Int. Cl. A61k 3/08; A61f 5/46; A61m 31/00
U.S. Cl. 128—271 13 Claims



A novel thin walled polyvinyl alcohol vaginal suppository mounts on the penis and is dissolved by fluids secreted by the vagina upon insertion and releasing a drug contained therein upon contact with said fluids.

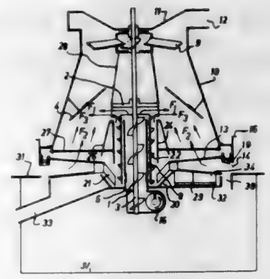
3,443,564
TRACHEAL TUBE
Heinz Oehmig, Marburg an der Lahn, Germany, assignor to Otto H. Drager, Lubeck, Germany
Filed June 2, 1966, Ser. No. 554,880
Claims priority, application Germany, June 22, 1965, D 47,560
Int. Cl. A61m 25/00
U.S. Cl. 128—351 2 Claims



A tracheal tube is composed of an outer rigid curved tapered tube having a straight outer end piece, and an inner flexible tube joined to a sleeve which extends into the end piece of the outer tube. This permits the placing of the tube in a windpipe without discomfort.

3,443,565
GRAIN THRESHING, CLEANING AND SEPARATING DEVICE
Roger Charles Jouvenceaux, Mouvaux, France, assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Feb. 2, 1967, Ser. No. 613,488
Claims priority, application France, Feb. 9, 1966, 49,822
Int. Cl. A01f 7/00, 12/20
U.S. Cl. 130—27 7 Claims

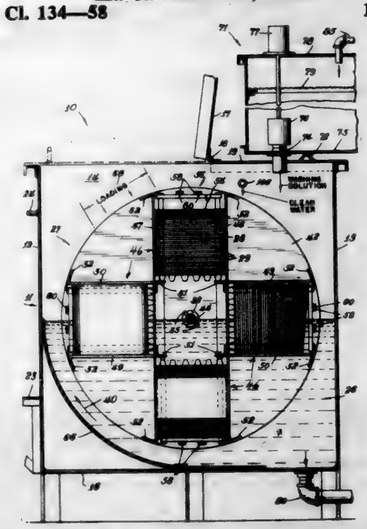
A grain cleaner awner and tailings recleaner having a pair of concentric auger conveyors that process the uncleaned grain and tailings and centrifugally discharge the processed material into an air current that carries away the chaff and dust. The pair of augers and the fan producing the air current are all driven from a single rotary drive.



3,443,566
CIGARETTE FILTERS EMPLOYING SUGAR ESTERS
Yoshifumi Yasuda, Saijo, Japan, assignor to Kurashiki Rayon Co., Ltd., Sakazu, Kurashiki, Japan
No Drawing. Filed July 29, 1965, Ser. No. 475,894
Claims priority, application Japan, Aug. 3, 1964, 39/43,496; Sept. 2, 1964, 39/49,866
Int. Cl. A24f 7/04
U.S. Cl. 131—267 7 Claims

A cigarette filter manufactured by adhering sugar esters on filter consisting of cellulose material selected from viscose rayon fiber and paper in an amount of 0.05 to 10% by weight based on the weight of said filter by spraying or dipping and molding the resulting filter into a cylindrical shape.

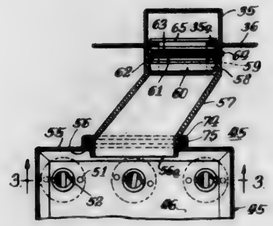
3,443,567
AUTOMATIC EGG FLAT WASHER
Howard L. Moore, 1801 Taylor, Springdale, Ark. 72764
Filed Nov. 1, 1967, Ser. No. 679,693
Int. Cl. B08b 3/04, 13/00
U.S. Cl. 134—58 11 Claims



Stacks of egg flats are loosely mounted on a reel which is rotated through a washing solution for a predetermined time after which the solution is drained and the egg flats are dried by further rotation of the reel.

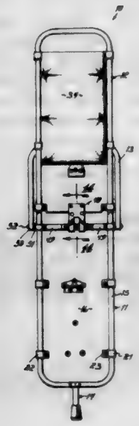
ERRATUM
For Class 134—123 see:
Patent No. 3,443,993

3,443,568
DISHWASHING MACHINE SPRAY BOX MOUNTING MEANS
Casimer Janiszewski, Chicago, Ill., assignor to G. S. Blakeslee & Co., Chicago, Ill., a corporation of Delaware
Filed Nov. 16, 1966, Ser. No. 594,783
Int. Cl. B08b 3/02
U.S. Cl. 134—199 5 Claims



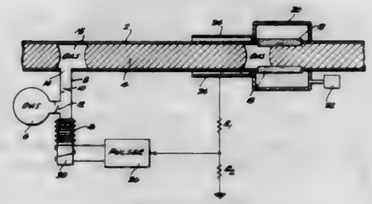
A dishwashing machine comprising a housing, upper and lower spray boxes in the housing, a riser at the outer face of the housing, and adaptors respectively connecting the spray boxes to the riser.

3,443,569
COMBINED CANE AND LEG REST DEVICE
Hans Ernst, 1021 Eldorado Ave., Clearwater, Fla. 33515
Filed May 24, 1967, Ser. No. 640,934
Int. Cl. A45b 3/00; A61h 3/02
U.S. Cl. 135—47 10 Claims



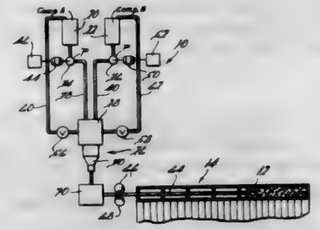
A combined cane and leg rest device having three operative positions; a folded "carrying" position, an extended "cane" position, and a "footrest" position. The device includes two pivotally interconnected panel sections which are folded to overlap one another in the "carry" position, are extended parallel to one another in the "cane" position and are secured perpendicular to one another in the "rest" position. A single reciprocable rod functions both as a cane tip and as a releasable latch to hold the device in each of its positions.

3,443,570
HIGH VOLTAGE ISOLATOR FOR LIQUID FEEDLINE
Harry J. King, Canoga Park, Jerome H. Molitor, Woodland Hills, and James W. Ward, Santa Monica, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Jan. 3, 1967, Ser. No. 606,611
Int. Cl. F17d 3/00, 3/04
U.S. Cl. 137—1 6 Claims



High voltage isolation between the ends of the liquid feedline is provided by injecting a bubble of insulative material into the feedline. The method preferably includes sensing the existence of a previously injected bubble at a downstream point and using the signal to inject another bubble. It also includes removing the insulating bubble from the feedline. The apparatus includes a bubble injector, a downstream bubble sensor connected to drive the bubble injector and a bubble remover downstream from the bubble sensor.

3,443,571
FOAMING APPARATUS AND METHOD
Richard T. Fujioka, 1848 Lakeview Drive, Oxford, Mich. 48051, and Gerald A. Wooldridge, 23161 Greencrest, St. Clair Shores, Mich. 48080
Filed Oct. 24, 1966, Ser. No. 588,861
Int. Cl. E04g 21/00; B29b 1/04
U.S. Cl. 137—7 19 Claims

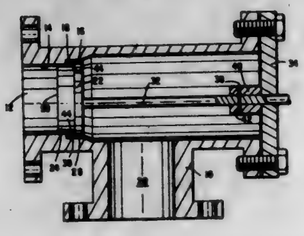


A method and apparatus for foaming a cavity with a product formed of constituent elements by inserting a tube into the cavity, withdrawing the tube during the process, and varying the control of the pump driving the constituent elements in response to the sensed instantaneous line pressure.

3,443,572
PRESSURE RELIEF DEVICE
William J. Lavigne, Jr., Fayetteville, William T. Osborne, East Syracuse, and Carl M. Anderson, Syracuse, N.Y., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed June 26, 1967, Ser. No. 648,699
Int. Cl. F16k 17/14
U.S. Cl. 137—70 1 Claim

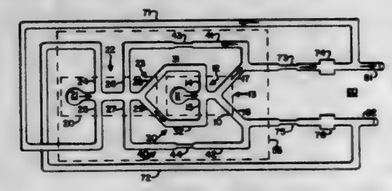
A pressure relief device for use in place of rupture discs or conventional relief valves incorporating a piston slidable in a passageway subject to high pressure fluid. A

seal between the piston and the wall of the passageway is provided by inserting an O-ring in a space between a shoulder formed in the passageway and a shoulder formed in the piston. This arrangement reduces the force in-



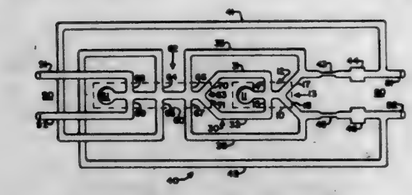
volved in overcoming the friction represented by the seal by providing space enabling the piston and seal to roll relative one to the other when excessive pressure is encountered.

3,443,573
FLUID APPARATUS
Walter M. Posingies, Minneapolis, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Feb. 21, 1966, Ser. No. 528,927
Int. Cl. F15c *1/12*; G06m *1/12*
U.S. Cl. 137—81.5 10 Claims



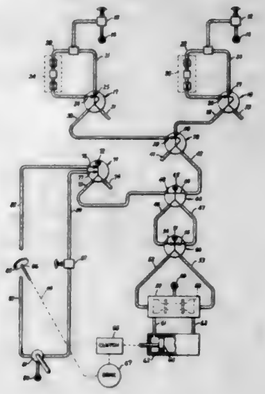
Bistable fluid apparatus having substantially nonvariant dynamic switching threshold requirements comprising a proportional fluid amplifier cascaded with a bistable fluid amplifier and feedback circuits connecting the output of the bistable amplifier to the control passages of the proportional amplifier.

3,443,574
FLUID APPARATUS
Walter M. Posingies, Minneapolis, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Apr. 4, 1966, Ser. No. 539,869
Int. Cl. F15c *1/12*; G06m *1/12*
U.S. Cl. 137—81.5 9 Claims



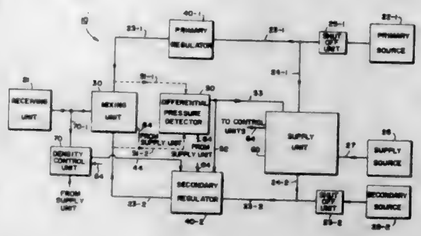
A pure fluid feedback modulator which produces a pressure pulse train output signal in which both the pulse duration and repetition rate vary in response to an analog input signal. The modulator comprises a first bistable amplifier cascaded with a second bistable or proportional amplifier and negative feedback paths connecting the output of the first amplifier to the input of the second amplifier.

3,443,575
FLUIDIC CONTROL SYSTEM
John M. Hughes, Champaign, Ill., assignor to General Electric Company, a corporation of New York
Filed Aug. 30, 1966, Ser. No. 576,134
Int. Cl. F16c *1/08, 1/14*
U.S. Cl. 137—81.5 10 Claims



A fluidic control system for effecting a controlling function includes a pair of actuable control means each controlling the supply of fluid from a pressure fluid source to a separate pair of fluid conducting paths. Each pair of paths is connected in parallel between its associated control means and a pair of input passages of an associated AND fluid device having also a pair of output passages. One path of each pair of paths includes fluid time delay means such that a first input passage of each of the associated AND devices receives fluid prior to arrival of fluid at the second input passage to provide fluid at a first output passage of each AND device in response to substantially simultaneous actuation of the associated control means. A third AND fluid device has its two input passages connected respectively to the first output passages of the first and second AND devices. When the two control means are actuated substantially simultaneously, fluid appears at both input passages of the third AND device and is directed to a selected one of its output passages. Additional control means is connected to such selected output passage responsive to the output fluid for effecting a controlling function.

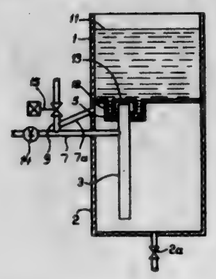
3,443,576
FLOW REGULATING SYSTEM
Willis D. Kervin, 1306 Sunset Drive, Johnson City, Tenn. 37601
Filed Nov. 29, 1966, Ser. No. 597,725
Int. Cl. G05d *11/00*
U.S. Cl. 137—88 21 Claims



Apparatus for regulating the mixing of fluids where a differential pressure detector is used to monitor the pressure differences between a primary and secondary fluid.

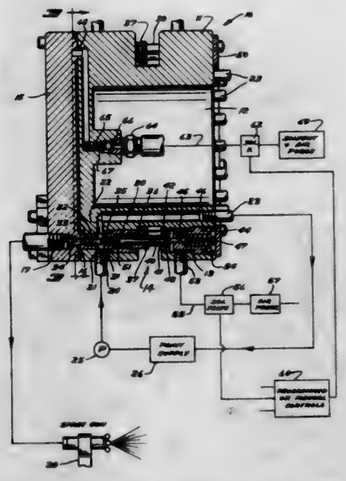
A secondary regulator is controlled by the differential pressure detector. The fluids are mixed in a mixing unit, the density of the mixture at the output of the mixing unit being monitored.

3,443,577
APPARATUS FOR CONTROLLING GRAVITY FLOW
Vilgot Raymond Nilsson, Hatersten, Sweden, assignor to Alfa-Laval AB, Tumba, Sweden, a corporation of Sweden
Filed Oct. 19, 1966, Ser. No. 587,866
Claims priority, application Sweden, Oct. 21, 1965, 13,633/65
Int. Cl. F16k *9/00, 13/00*
U.S. Cl. 137—209 5 Claims



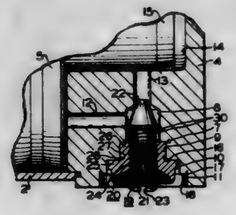
A tapping pipe has an orifice opening into an upper container and is arranged for delivering liquid therefrom to a lower container, and means are provided for connecting this pipe to a pressure source to create in the pipe a pressure independent of the liquid levels in the container and at least as great as the hydrostatic pressure prevailing at the orifice, thereby blocking gravity flow through the pipe. A device is operatively connected to the pipe for releasing the internal pressure to unblock the flow.

3,443,578
COLOR SELECT VALVE FOR SPRAY GUNS
Robert S. Hedin, Minneapolis, Minn., assignor to Programmed & Remote Systems Corporation, St. Paul, Minn., a corporation of Minnesota
Filed Oct. 12, 1966, Ser. No. 586,102
Int. Cl. F16k *25/02, 5/22, 5/12*
U.S. Cl. 137—240 3 Claims



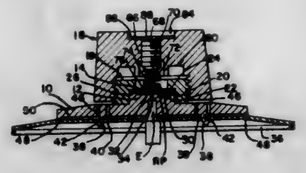
A remotely operable valve assembly used to direct one of a plurality of colors of paint to a spray gun. Valves controlling the flow of paint to a collector chamber are provided and they are arranged annularly around a central axis to conserve space. When the valves are operated, a separate color of paint will be supplied to a common collector chamber and then to a spray gun. Means to supply a solvent to purge the collector chamber are provided in the central area within the annular ring of valves controlling the paint flow.

3,443,579
NEEDLE VALVE DEVICE FOR ADJUSTING CUSHIONING IN POWER CYLINDERS AND METHOD OF INSTALLING
Charles Doolittle, Lexington, Ky., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania
Filed May 19, 1966, Ser. No. 551,290
Int. Cl. F16k *43/00, 51/00*; F16l *55/18*
U.S. Cl. 137—315 4 Claims



A valve assembly for installation in a fluid pressure system and with particular means for installing the assembly. The assembly includes a nut with a threaded bore therethrough, a shaft having threads thereon and a valve member on one end and the threads on the shaft adjacent the valve being distorted to prevent removal of the shaft from the nut. Sealing means for surrounding the shaft and further sealing means between the nut and the housing into which the valve assembly is mounted.

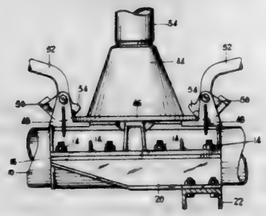
3,443,580
DIAPHRAGM VALVE MOUNTED IN A CONTROL KNOB
Kenneth G. Kreuter, Goshen, Ind., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Jan. 20, 1967, Ser. No. 610,618
Int. Cl. F16k *31/145*
U.S. Cl. 137—315 3 Claims



A pressure regulator contained wholly within a calibrated control knob is provided including a rotatable calibrated knob, a base plate and a mounting plate for the control knob assembly which forms a pressure exhaust or

vent chamber with the base plate. The knob and base plate assembly are attached to the mounting plate by a snap coupling arrangement in which spring detents on the base plate cooperate with slots in the mounting plate, and the base plate includes pressure ports connecting the pressure exhaust chamber to atmosphere. The control knob is externally threaded on an upstanding sleeve on the base plate, which sleeve maintains a flexible diaphragm on the base plate over a bleed port and defines, with the base plate, a pressure input chamber which is selectively vented through the bleed port to the exhaust chamber by the diaphragm. A bias spring is maintained between the control knob and the diaphragm such that rotation of the control knob, within predetermined limits of displacement, selectively effects a linear, adjustable, range of regulated pressures in the pressure input chamber.

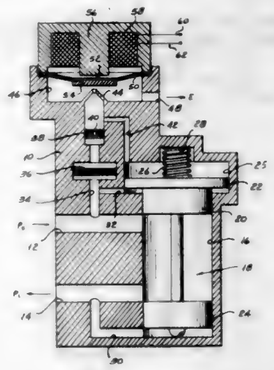
3,443,581
MEANS FOR SECURING STANDPIPES TO IRRIGATION PIPELINES
Hugh R. Lyell, Nelspruit, Transvaal, Republic of South Africa, assignor to Dowson & Dobson Limited, Selby, Johannesburg, Republic of South Africa
Filed Oct. 24, 1966, Ser. No. 589,007
Claims priority, application Republic of South Africa, Oct. 29, 1965, 5,838/65
Int. Cl. F16l *37/28, 37/18;* **F16k** *43/00*
U.S. Cl. 137—322 **10 Claims**



A device for mounting a standpipe on an irrigation pipeline has a stub pipe projecting upwardly from the pipe, adapted sealably to receive the lower end of the standpipe, a frustoconical skirt on the standpipe which surrounds the stub pipe and is spaced from it, a base plate on which the hem of the skirt comes to rest, and pivoted cams which detachably secure the hem to the platform to stabilize the standpipe.

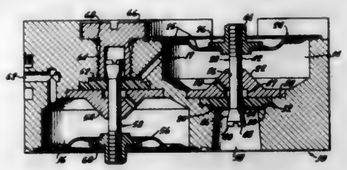
3,443,582
PRESSURE CONTROL VALVE
Bramwell R. Linden, Port Chester, N.Y., assignor to Ozone Metal Products Corporation, Ozone Park, N.Y., a corporation of New York
Continuation of application Ser. No. 367,041, May 13, 1964. This application Mar. 30, 1966, Ser. No. 538,868
Int. Cl. B60t *11/34;* **G05d** *7/06, 16/20*
U.S. Cl. 137—495 **4 Claims**

1. A system for governing the pressure difference between two variable pressures including in combination, a fluid passage having an inlet port and an outlet port and a positionable element movably mounted in said passage for controlling the coupling between said ports, said element being provided with first and second and control areas to which pressures may be applied to position said element, a source of a first variable pressure, means connecting said source to said inlet port to produce a second variable pressure at said outlet port, means for applying said first and second pressures respectively to said first and second areas to urge said element in a direction to reduce the coupling between said ports, a pressure reduction orifice having an inlet and an outlet, means for applying said first pressure to said orifice inlet, an actuatable auxiliary valve, means connecting said auxiliary valve between said orifice outlet and a pressure less than said second pressure, means for actuating said auxiliary valve to



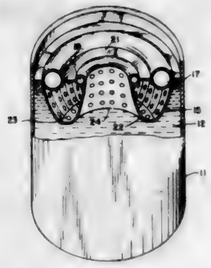
provide a control pressure at said orifice outlet and means for applying said control pressure to said control area to urge said element in a direction to increase the coupling between said ports, said first and second areas aggregating less than said control area.

3,443,583
HIGH IMPACT PRESSURE REGULATOR
James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Albert Topits, Jr., Altadena, Elmer L. Floyd, La Crescenta, and John E. Biles, Jr., Sierra Madre, Calif.
Filed Nov. 27, 1967, Ser. No. 685,787
Int. Cl. F16k *31/165, 41/00;* **F01b** *19/02*
U.S. Cl. 137—505.12 **2 Claims**



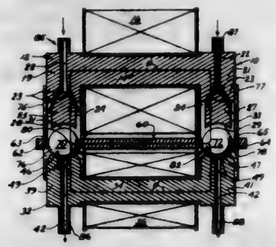
An impact resistant pressure regulator having a minimum number of lightweight movable elements. The movable elements of the regulator are integrally connected to each other and to the regulator housing for reducing misalignment and damage to the regulator upon impact. The regulator contains two pressure chambers in fluid communication with each other. The entrance to each pressure chamber is valved and one wall of each pressure chamber comprises a thin metallic diaphragm. Each diaphragm is connected to the valved entrance and has a predetermined inherent biasing force so that when the pressure in each chamber overcomes the biasing force of the diaphragm the valved entrance to the respective chamber is closed. The diaphragms are the only biasing elements in the regulator.

3,443,584
BUOYANT ANTI-SLOSH SYSTEM
David A. Evensen and John P. Raney, Newport News, Va., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Feb. 24, 1967, Ser. No. 619,519
Int. Cl. B64g *9/00;* **B65d** *87/12*
U.S. Cl. 137—582 **2 Claims**



A buoyant anti-slosh system using submerged baffles to inhibit liquid sloshing in a container as the container is subjected to forces normally inducing liquid movement relative to the container.

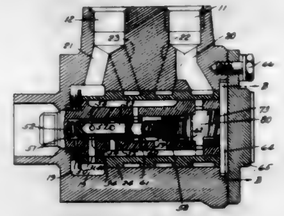
3,443,585
MAGNETICALLY OPERATED MULTI-VALVE ASSEMBLY
Robert H. Reinicke, Thousand Oaks, Calif., assignor to North American Rockwell Corporation, a corporation of Delaware
Filed July 3, 1967, Ser. No. 650,693
Int. Cl. F16k *31/02*
U.S. Cl. 137—595 **14 Claims**



A multi-valve assembly having at least two ball shaped valves made of magnetizable material that act as armatures. The valves are included in a magnetic circuit which operates, without the aid of mechanical guides, dynamic seals or the like, to substantially simultaneously move the balls along substantially straight paths between their valve-closed and valve-opened positions. Valve-opened and valve-closed positions are maintained solely by magnetic forces, thereby eliminating the need for mechanical springs, detents or the like.

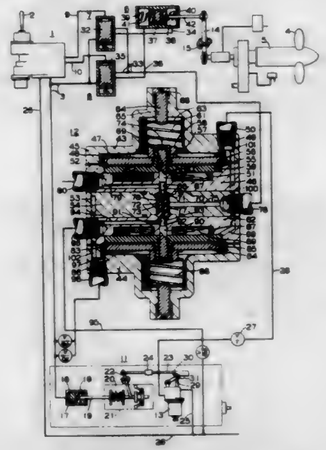
3,443,586
FOUR-WAY CHANGE-OVER DEVICE FOR HYDRAULIC INSTALLATIONS
Helge K. Christensen, Svenstrup (Als), Denmark, assignor to Danfoss A/S, Nordborg, Denmark, a company of Denmark
Filed June 7, 1967, Ser. No. 644,402
Claims priority, application Germany, June 7, 1966, D 50,258
Int. Cl. F16k *11/02;* **F01c** *21/14*
U.S. Cl. 137—596.12 **14 Claims**

The invention is a control for a hydraulically operated motor which in general facilitates changing the direction of operation of the motor and provides a neutral position. In addition, the control has a manual and an automatic



throttling function for controlling the speed of the motor and for controlling the volume and pressure of the pressurized fluid delivered to the motor.

3,443,587
AUTOMATIC CONTROL APPARATUS FOR VARIABLE PITCH PROPELLERS
Ralph C. Brooks, Ahoskie, N.C., and Paul E. Olson, Lexington, Ky., assignors to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania
Original application June 11, 1965, Ser. No. 463,161. Divided and this application Oct. 20, 1966, Ser. No. 600,308
Int. Cl. E03b; E03c; F17d
U.S. Cl. 137—596.18 **4 Claims**

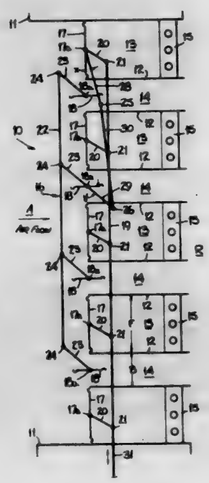


This invention is directed to a valve device which includes two halves, each operated by adjustable spring biased diaphragm operators wherein the motor chambers of the two diaphragm operators are interconnected so that pressures on each side of one diaphragm operator are also present on the other diaphragm operator.

3,443,588
DAMPER MEANS IN AIR SUPPLY UNITS OR THE LIKE
Edward J. Banko, Colonia, N.J., assignor to Aero-Flow Dynamics, Inc. (The Wing Company Division), Linden, N.J., a corporation of New York
Filed Oct. 24, 1965, Ser. No. 504,433
Int. Cl. F17d *1/10;* **F28f** *27/02;* **F24f** *13/04*
U.S. Cl. 137—601 **10 Claims**

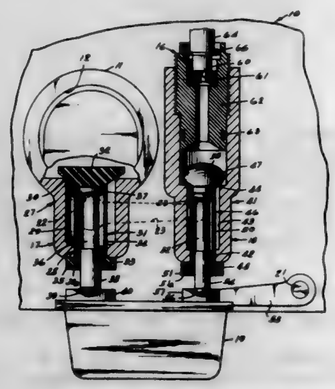
Control arrangements for flat damper system in a face and by-pass type air heater unit, providing concurrent differential movement as between the face passage, dampers and the dampers on the smaller width by-pass passages

when moved to positions between their respective full open and full closed positions with linkage means for effecting a variable rate of movement of one of said dampers so that, at all damper settings, the air pressure drop across the unit is substantially the same. See disclosure



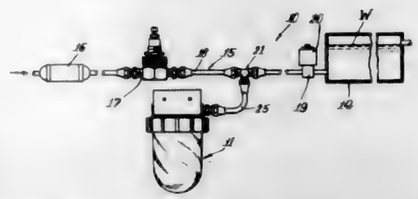
for particular arrangements, including four-bar linkage control for both face and by-pass dampers and having particular lengths and angular relationships of its component linkage rods for economical achievement of the stated results.

3,443,589
GRAVITY VALVE
Nello L. Benedetti, Mount Prospect, Ill., assignor to The Dole Valve Company, Morton Grove, Ill., a corporation of Illinois
Filed Sept. 16, 1966, Ser. No. 580,031
Int. Cl. F16k *21/04, 15/14*
U.S. Cl. 137—604 **11 Claims**



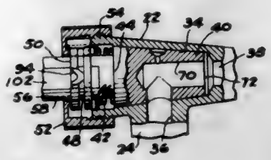
A dispensing valve assembly having dual inlets communicating through dual valve seats to a single dispensing orifice. Elastic increased diameter valve stoppers are adapted to close the valve seat and are retained against the seat by the tension of a stretched elastomer body portion. The rods extending into the elastic body portion are adapted to stretch body portion and lift the increased diameter stopper away from the valve seat.

3,443,590
FLUID SUPPLY APPARATUS
Herbert E. Wagner, Tinley Park, and Harvey R. Karlen, Chicago, Ill., assignors to Cory Corporation, a corporation of Delaware
Filed Oct. 31, 1966, Ser. No. 590,967
Int. Cl. B67d *5/58*
U.S. Cl. 137—604 **9 Claims**



A fluid supply apparatus for use with an intermittent fluid delivery means. The apparatus is arranged to have fluid delivered into a treating material storage chamber when the flow is interrupted and pass outwardly from the chamber into the fluid flow stream when the flow is reinitiated. The storage space means is defined by a resilient wall. The resilient wall may comprise a resilient plastic cover on a storage tank.

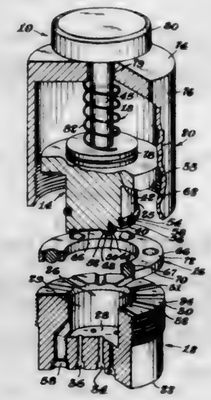
3,443,591
GAS VALVE STRUCTURE
Eugene J. Blanzy and Everett W. Carlson, Detroit, Mich., assignors to Lincoln Brass Works, Detroit, Mich., a corporation of Michigan
Filed Mar. 23, 1967, Ser. No. 625,407
Int. Cl. F16k *5/12*
U.S. Cl. 137—625.3 **7 Claims**



Clicking washer device which indicates rotary positions of a valve plug by audible clicks or resistance to turning. Indicated positions are determined by location of milled shoulders on valve body which are engaged by washer projections. Valve porting provides uniform gas flow rate over a span of rotation of valve plug adequate to encompass incidental variations of position at which position indicator functions.

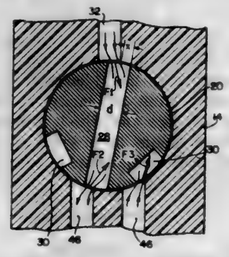
3,443,592
ROTARY MULTIPORT SAMPLING VALVE
William J. Felmlee, Bay City, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Apr. 6, 1967, Ser. No. 628,986
Int. Cl. F16k *11/02*
U.S. Cl. 137—625.11 **10 Claims**

A rotary multiport sampling valve which selects and segregates an inflowing fluid or gas stream from a number of such streams and routes the sampled stream to a



sampling port while merging the remaining inflowing streams and directing them out a common purging port.

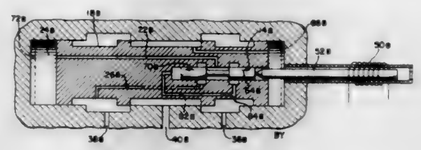
3,443,593
HYDRODYNAMICALLY BALANCED ROTARY VALVE
Paul V. Colombo, Taunton, Mass., assignor to Mount Hope Machinery Company, Taunton, Mass., a corporation of Massachusetts
Filed July 24, 1967, Ser. No. 655,530
Int. Cl. E03b; E03c; F17d
U.S. Cl. 137—625.24 **18 Claims**



A rotary valve which is hydrodynamically balanced comprises a cylindrical spool received rotatably in a cylindrical chamber. An inlet passage and at least one outlet passage communicating with the chamber, and a distributing passage in the spool, are arranged so that angular displacement of the spool from a neutral position changes the area of communication between the inlet and distributing passage in one algebraic sense, and simultaneously changes the area of communication between the distributing passage and the outlet passage in the opposite algebraic sense. Balance is achieved by opposing the hydrodynamic forces. Transfer passages can be provided in the spool for exhausting either outlet passage, and these may aid in balancing the valve.

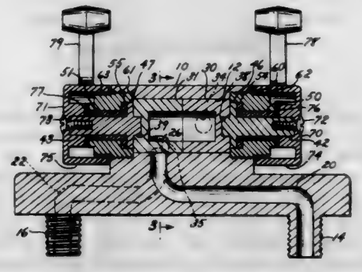
3,443,594
PROPORTIONAL PRESSURE VALVE
Theodore Frayer, North Canton, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Nov. 21, 1966, Ser. No. 595,660
Int. Cl. E03b; E03c; F17d
U.S. Cl. 137—625.64 **2 Claims**

A proportional pressure valve wherein the supply of a large hydraulic pressure to a brake may be controlled by a very small actuating force in a regenerative or degenerative manner depending upon the specific application requirements. Specifically, the valve incorporates a pilot piston and a slave piston wherein the pilot piston slides within the slave piston with appropriate passages interconnecting respective ports of the pilot piston through the



slave piston and to the respective ports of the slave piston. The pistons slide together during actuation thereof, and actually have a relative sliding relationship to each other which provides either a regenerative or degenerative actuating action, depending on whether the sliding relationship is in the same or opposite directions.

3,443,595
FAUCET VALVE WITH CO-AXIAL STEM SEPARATE CORRELATED ACTUATORS
Daniel L. Baldwin, 663 S. Pasadena Ave., Glendora, Calif. 91740
Filed Oct. 4, 1966, Ser. No. 584,203
Int. Cl. F16k *5/12*; E03c *1/04*
U.S. Cl. 137—637.3 **8 Claims**

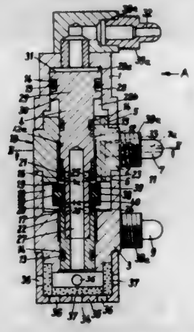


A faucet valve is disclosed which comprises a hollow body member having nested therein a pair of rotatable polymerized polyfluorinated hydrocarbon hollow cylindrical plugs, which plugs are closed at their remote ends, butted together at their open ends, and pierced by a radial bore in the side wall of each such that water can enter the common chamber formed within the opposed plugs through one bore and be discharged therefrom through the other bore through passageways in the body as the plugs are rotated to align the radial bores therein with said passageways.

3,443,596
SEQUENTIALLY CLOSING AND OPENING ALTERNATELY SEATING FLOW CONTROL VALVE
Anatol Klenk, Bogenstr. 17, Ludwigsburg, Germany
Filed Feb. 9, 1966, Ser. No. 526,264
Claims priority, application Germany, Feb. 12, 1965, K 55,260
Int. Cl. F16k *21/00*
U.S. Cl. 137—627.5 **11 Claims**

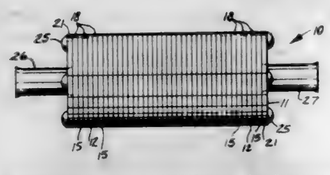
A valve having a body of axial sections of synthetic material cemented together with a piston driven spindle

reciprocable in the valve bore. A valve disc with a lost motion connection to the spindle is disposed between spaced valve seats and controls the connection of a



pressure line with two service lines and the connection of the two service lines with an exhaust passage which preferably extends through the spindle.

3,443,597
AUXILIARY CARBURETION DEVICE
Robert E. Lessy, P.O. Box 472, Trenton, Mo. 64683
Filed Feb. 16, 1966, Ser. No. 527,894
Int. Cl. F15d *1/02*
U.S. Cl. 138—42 1 Claim



An auxiliary carburetion device to be interposed in the fuel line of an internal combustion engine whereby the fuel flows therethrough to the carburetor, the device having an intake end plate and intake tube for admitting fuel to the device and an outlet end plate and outlet tube permitting fuel to pass from the device to the carburetor, there being a plurality of variously perforated plates between said end plates, the perforated plates including a first plate with a central hole, a second plate with a plurality of miniature holes in a circular pattern and a third plate with a plurality of miniature holes in a circular pattern, the diameter of the circular pattern in the third plate being greater than the diameter of the circular pattern in the second plate, the perforated plates being held together in aligned, patterned relationship between the intake end plate and the outlet end plate whereby the fuel is thoroughly agitated as it passes through the device.

3,443,598
FLUID DUCTS
Donald Pierce, Aldershot, England, assignor to Minister of Technology in Her Britannic Majesty's government of the United Kingdom of Great Britain and Northern Ireland, London, England
Filed Dec. 3, 1965, Ser. No. 511,534
Claims priority, application Great Britain, Dec. 4, 1964, 49,443/64
Int. Cl. F15d *1/02*; F16l *11/00*; F02b *27/00*
U.S. Cl. 138—45 4 Claims

A variable area duct for fluid, having a flexible wall pivotally connected to a fixed base by means of a plurality of swing links so that when a load is applied generally in the plane of the wall, its profile is varied.

This invention relates to fluid ducts. The invention is particularly concerned with intake and exhaust ducts for



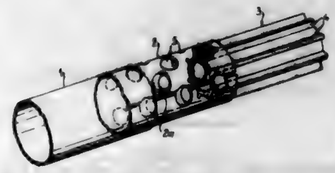
aircraft, and, fluid flow test apparatus generally known as wind tunnels.

3,443,599
VAPOR BARRIER JACKETING FOR PIPE STRUCTURES
Robert S. Klein, Levittown, Pa., assignor to Birma Products Corporation, Sayreville, N.J., a corporation of New York
Filed May 23, 1967, Ser. No. 640,747
Int. Cl. F16l *59/14*
U.S. Cl. 138—140 12 Claims



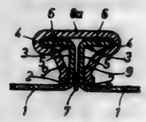
This invention teaches a vapor barrier pipe jacketing comprised of a laminated assembly preformed for application to pipe, circular ducts and the like wherein joint means are provided for easily and readily joining the end sections of the jacketing about a pipe and wherein resilient means are angularly arranged transverse to the pipe length and along the jacketing interior for providing a good seal between the jacketing and the pipe and for providing a good seal between adjoining sections of jacketing. Each section of jacketing is provided with a raised bead projecting outwardly from the jacketing section when positioned around the pipe and which is designed to cooperate with the resilient means to provide an improved seal between adjacent sections in order to provide a moisture and galvanic barrier for the pipe.

3,443,600
MEANS FOR REINFORCING THIN WALLED TUBES
Lionel Forrester Sherwood, London, England, assignor to Murex Limited, Rainham, England, a corporation of the United Kingdom
Filed May 4, 1967, Ser. No. 636,157
Claims priority, application Great Britain, May 4, 1966, 19,703/66
Int. Cl. F16l *9/04*, *9/18*
U.S. Cl. 138—153 8 Claims



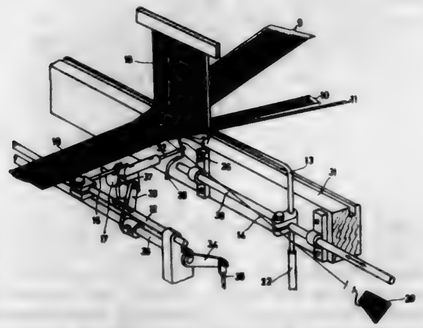
Means for reinforcing thin walled tubes comprising a resilient split sleeve applied either to the inside or outside of the tube. Additional strengthening is provided by a close fitting finned tube or rod inserted to the tube. The reinforcing means are especially suited to reinforce the thin walls of bayonet heaters, made of tantalum, for heating acids.

3,443,601
SHEET METAL JOINT
Emil Siegwart, Michael-Blatter-Strasse 6, Salzbach-Neuweiler, Saar, Germany
Filed June 7, 1967, Ser. No. 644,281
Claims priority, application Germany, Mar. 23, 1967, S 109,010
Int. Cl. B65d *7/34*, *7/42*
U.S. Cl. 138—156 8 Claims



Means for joining marginal portions of adjacent portions of sheet metal members, including bends in the marginal portions and a generally hollow member surrounding such bent portions and slidably engaging same in a manner to press selected areas thereof towards one another.

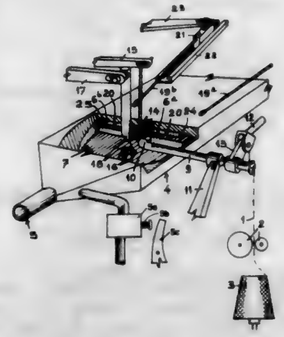
3,443,602
DEVICE AND METHOD FOR PRODUCING A SELVEDGE
Heinrich Schaffer, Werther, near Bielefeld, Germany, assignor to Ruti Machinery Work, Ltd., Ruti, Zurich, Switzerland, a corporation of Switzerland
Filed Apr. 10, 1967, Ser. No. 629,718
Claims priority, application Switzerland, Apr. 15, 1966, 5,522/66
Int. Cl. D03d *47/00*, *47/40*; D03j *5/06*
U.S. Cl. 139—122 9 Claims



A device for producing a selvedge on a weaving machine, which comprises a movable gripper means provided with a suction tube having a suction orifice at its forward end by which the end portions of weft threads projecting from the shed are successively seized by a sucking action, the tube being moved between the outer warp threads and through the interior of the opened shed towards the projecting end portions and back again to thereby draw the seized end portions, successively, into the shed substantially without fouling or tearing the adjacent warp threads. A method for producing selvedge is also disclosed.

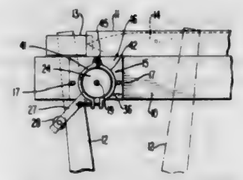
3,443,603
DEVICE FOR PREPARING A WEFT
Hubert P. van Mullekom, Deurne, Noord-Brabant, Netherlands, assignor to N. V. Machinenfabriek L. Te Strake, Deurne, Netherlands, a Dutch company
Filed July 24, 1967, Ser. No. 655,403
Claims priority, application Netherlands, July 27, 1966, 6610605
Int. Cl. D03d *47/00*
U.S. Cl. 139—127 5 Claims

This device is used in conjunction with a loom to prepare a weft. It comprises apparatus for drawing a thread from a thread package, including a shaft for temporarily storing a measured length of the thread which comprises a plurality of compartments each adapted to receive a portion of the thread. The compartments have adjacent



entrances through which the thread is received, and a thread-guide is movably mounted in front of the entrances of the compartments for presenting the thread successively to the compartments.

3,443,604
PICKER STICK CHECK
William A. Roberts, Paterson, N.J., assignor to Roberts Unique Loom Parts Inc., Paterson, N.J., a corporation of New Jersey
Filed Feb. 23, 1968, Ser. No. 707,797
Int. Cl. D03d *49/40*
U.S. Cl. 139—162 10 Claims

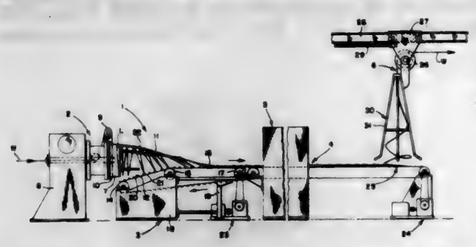


A check which is embodied in a highly compact self-contained unit which mounts bodily on the end portion of the lay through a single mounting plate. A pivoted checking arm carries one way active clutching means which frictionally drive a cylindrical drum in one direction when the picker stick causes pivoting of the arm. The turning of the drum is resisted frictionally by an external adjustable brakeband having rigid components. The checking arm is spring-biased to an adjustable inactive position upon completion of the checking operation.

3,443,605
WIRE OR ROD HANDLING METHOD AND APPARATUS
Jess C. Bittman, Cuyahoga Falls, and John H. Miles, Ravenna, Ohio, assignors to The Vaughn Machinery Company, Cuyahoga Falls, Ohio, a corporation of Ohio
Filed June 28, 1967, Ser. No. 649,643
Int. Cl. B21f *3/00*
U.S. Cl. 140—2 14 Claims

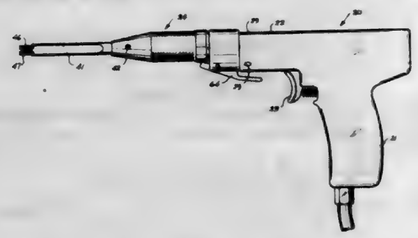
A method and apparatus for depositing successive loops of rod-like material onto a conveyor with the foremost loops overlying the succeeding loops to permit continuous withdrawal of the loop material at the discharge end of the conveyor in a general upward direction. The loops are deposited in such relation by positively advancing the lower portions of the loops relative to the upper portions

thereof while lifting the lower loop portions to cause the following loops to swing into approximately horizontal



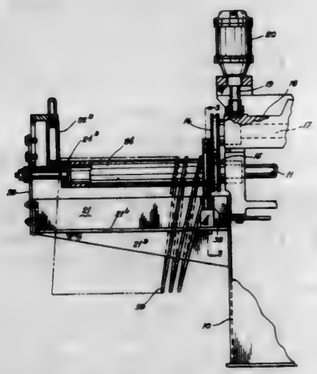
position in underlying relation with the preceding loops in the series.

3,443,606
TWIN BIT WIRE WRAPPING TOOL
William Henry Atkinson, Mabane, N.C., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Nov. 29, 1966, Ser. No. 597,790
Int. Cl. B21f *3/00*; B65h *81/06*
U.S. Cl. 140—124 **9 Claims**



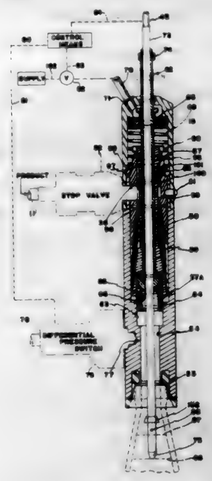
A wire wrapping tool having twin wire wrapping devices for simultaneously wrapping two wires about a pair of electrical terminals and having adjustable facilities for spacing the wire wrapping devices to correspond to the spacing of the terminals.

3,443,607
WIRE STRAIGHTENER
Gunter N. Dittrich, Dusseldorf-Eller, Germany, assignor to Malmedie & Co. Maschinenfabrik GmbH, Dusseldorf, Germany
Filed Jan. 4, 1967, Ser. No. 607,294
Int. Cl. B21f *1/02*; B21d *3/02*
U.S. Cl. 140—147 **6 Claims**



There is provided an apparatus for straightening wire from a coil and which resiliently resists bending in the opposite direction to straighten the wire, a plurality of bending rolls and a support for the coil in parellel relationship to the axis of one roll, and a wire guide comprising at least one roller extending cross the wire path forwardly of the entry side of the bending rolls in chord-like relation to the coil, to prevent interference of the coil with the operation of the bending rolls, and guide the wire as it passes to the bending rolls.

3,443,608
APPARATUS FOR FILLING CONTAINERS WITH BEVERAGES
Bruce G. Copping and Kenneth F. Friendship, Akron, Ohio, assignors to Geo. J. Meyer Manufacturing Co., Cudahy, Wis.
Filed Oct. 22, 1965, Ser. No. 500,863
Int. Cl. B65b *31/00*, *57/14*, *3/04*
U.S. Cl. 141—46 **13 Claims**

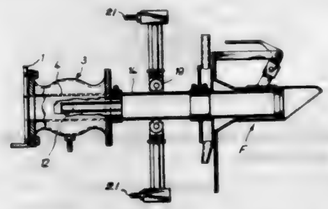


A filling head for carbonated beverage container filling machines is provided and includes a cylindrical hollow frame for engaging a container by a container engaging seat at its lower end. A valve seat is provided within the frame bore and a tubular valve means is slidably positioned within the frame. Means engage the valve means to move it to open and close position and capillary passage flow restricting means for flow of beverage therethrough to reduce the pressure on the beverage with a minimum of foaming is provided while a counter pressure supply tube extends axially through the frame and extends into any container engaged by the frame seat. Control means are provided in the apparatus to regulate action of the valve means for control of beverage flow only when predetermined operating conditions exist.

3,443,609
APPARATUS FOR FILLING VALVE BAGS WITH PULVEROUS MATERIAL
Peter H. A. Wehren, Krefeld, Germany, assignor to Erwin Behn Verpackungsbedarf G.m.b.H., Krefeld, Germany
Filed Sept. 21, 1966, Ser. No. 581,055
Claims priority, application Germany, Sept. 28, 1965, B 83,916
Int. Cl. B65b *1/04*
U.S. Cl. 141—68 **4 Claims**

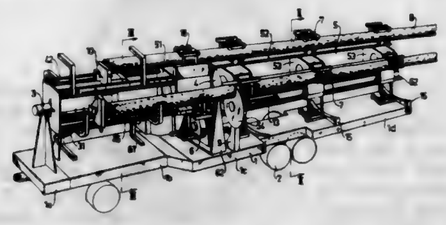
A device for filling bags with pulverous or granular material having a feeding line for filling connection with a bag, in which the feeding line is subdivided into a larger

cross-sectional branch and a smaller cross-sectional branch each of which has associated therewith control means for individually controlling said branches, the arrangement



being such that both branches are effective during the major portion of the filling operation while the smaller cross-sectional branch only is effective during the last phase of the filling operation.

3,443,610
SAWING APPARATUS
Erik Helmer Eriksson, Bjorna, and Olof Edvin Frisk and Lars-Gunnar Högberg, Ornskoldsvik, Sweden, assignors to Mo och Domsjo Aktiebolag, Ornskoldsvik, Sweden, a limited company of Sweden
Filed July 5, 1966, Ser. No. 562,628
Claims priority, application Sweden, July 7, 1965, 8,998/65
Int. Cl. B27b *5/18*
U.S. Cl. 143—57 **21 Claims**



An apparatus for sawing long objects, such as logs, of varying diameter into selected lengths is provided. The apparatus is composed of a rotatable support frame having a plurality of jaw-like gripping assemblies mounted on the frame. The jaw-like gripping assemblies face crosswise of the axis of rotation of the frame to receive and adjustably grip, according to size, opposite sides of an object positioned along the axis of rotation of the frame. Each of the jaws has means, such as a roller, which retains the object against radial displacement but permits the object to be moved axially during rotation of the frame at any rotational position. The rollers can be driven and thus provide the motive force for moving the object along the frame. A saw is fixed in relation to the frame in a position to cut off a selected length of the long objects retained on the frame upon rotation of the frame.

3,443,611
TREE-TRIMMING MACHINE
Karl-Gunnar Jorgensen, Solna, Sweden, assignor, by mesne assignments, to Logma Aktiebolag, Solna, Sweden, a Swedish company
Filed June 2, 1966, Ser. No. 554,780
Claims priority, application Sweden, June 10, 1965, 7,615/65; Mar. 15, 1966, 3,442/66
Int. Cl. B27c *9/00*
U.S. Cl. 144—2 **13 Claims**

A tree-trimming machine comprises a forest type tractor which mounts a loading crane having a rotatably mounted crane post to which is hingedly connected a horizontally extending three-section telescopic jib. The outer end of the outermost jib section mounts a fixed combined trimmer and gripper. The outer end of the innermost jib section mounts a fixed gripper. The combined gripper and trimmer grips the top of a felled tree and pulls it up to where it is held by the gripper on the inner jib section, and then as the outer jib section is extended, the combined tool trims the branches.

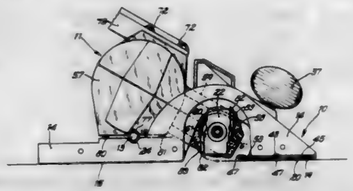


According to one modification of the gripper on the innermost jib section is mounted for slidable movement, and the outer end mounts a fixed trimmer. In this modification the outermost jib section also carries a topping saw. According to a second modification, the movable tool on the innermost jib section is a combined gripper and trimmer. In the modifications, the movable tool pulls the top of the trunk toward the crane post thereby increasing the trimming length.

3,443,612
METHOD FOR PRODUCING STUDS FROM CORDWOOD AND VENEER CORES
Peter Koch, Alexandria, La., assignor to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed Aug. 29, 1967, Ser. No. 664,209
Int. Cl. B27l *1/00*; B27m *1/00*
U.S. Cl. 144—316 **3 Claims**

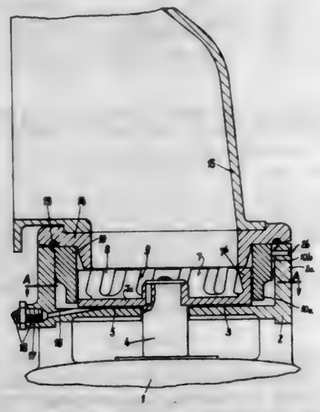
The method of this invention contemplates the production of straight, kiln-dried, stud grade SPIB (Southern Pine Inspection Bureau specification) 8 foot, 2 x 4 inch studs from selected pin cordwood of 4-foot and of 8-foot length and from selected pine veneer cores. The method which has as its primary aim the upgrading of raw material normally destined for wood chips in the pulp industry is characterized by firm control of the warping normally associated with lumber produced from young trees and consists of center ripping the green cordwood or the veneer core, blanking the half cores oversize on a surfacer-edger or like mill machine to remove excess wood in the form of pulp chips, kiln-drying the oversize stud blanks, face-jointing and thicknessing the dried blanks to remove distortion caused by the drying process, straight-line ripping to approximate width and finally planing and end trimming to size.

3,443,613
POWER PLANER
John F. Roods, Jefferson City, Mo., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Apr. 13, 1967, Ser. No. 630,663
Int. Cl. B27c *1/10*
U.S. Cl. 145—4 **7 Claims**



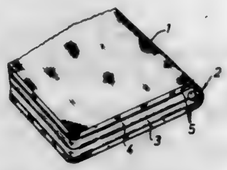
Structure for varying the cutter axis portion with respect to the fixed work engaging surface and changing the depth of cut by varying the position of the work engaging gauge shoe.

3,443,614
COMMINUTING APPARATUS
Fritz Otto, Hameln, Germany, assignor, by mesne assignments, to Belder Trust, Reg., Vaduz, Liechtenstein
Filed Nov. 3, 1966, Ser. No. 591,883
Claims priority, application Germany, Nov. 25, 1965, St 24,688
Int. Cl. A47g 43/04; B02c 18/08, 19/00
U.S. Cl. 146—192 10 Claims



A comminuting apparatus has a housing including a peripheral side wall and a bottom wall, the latter being provided with an upper surface. A rotary cutting member located in the housing and has a lower surface adjacent to but slightly spaced from the upper surface of the bottom wall so that the two surfaces define with each other a gap extending radially of the axis of rotation of the cutting member. A discharge passage is provided in the housing and communicates with the gap, and means is provided for admitting a washing fluid into the passage and from there into the gap.

3,443,615
ETUI
Georg Lang, Schwaig, near Nuremberg, Germany, assignor to Progresswerk Wornlein & Zellhofer, Nuremberg, Germany, a firm of Germany
Filed Apr. 19, 1967, Ser. No. 632,062
Claims priority, application Germany, Apr. 23, 1966, P 39,266
Int. Cl. A45c 13/04
U.S. Cl. 150—29 9 Claims



An etui having two frames hingedly connected together with the hinge members of one frame slidable relative to the shanks of said frame to avoid bulging of the cover material when the case is open.

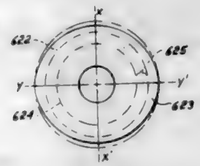
3,443,616
CASTELLATED NUT
Ervin J. Dey, Santa Fe Springs, Calif., assignor to Standard Pressed Steel Co., Jenkintown, Pa., a corporation of Pennsylvania
Filed July 26, 1967, Ser. No. 656,256
Int. Cl. F16b 39/28, 39/02, 39/00
U.S. Cl. 151—21 2 Claims

A castellated nut having an inner tapped barrel surrounded by a concentric sleeve. The sleeve has radial slots adapted to receive a pin or other security device.



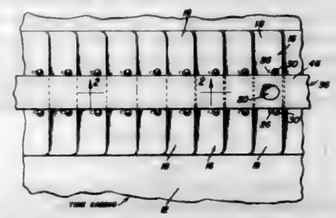
The tapped barrel may be elliptically deformed to render the nut self-locking.

3,443,617
PRESS INSERT
Roger B. Whiteside, Cinnaminson, N.J., and Kenneth M. Kulju, Southampton, Pa., assignors to Standard Pressed Steel Co., Jenkintown, Pa., a corporation of Pennsylvania
Continuation-in-part of application Ser. No. 555,522, June 6, 1966. This application Nov. 2, 1967, Ser. No. 681,311
Int. Cl. F16b 39/00, 13/06, 33/04
U.S. Cl. 151—41.73 12 Claims



A press insert and a panel member having an opening into which the insert is forced. The shape and dimensions of the insert relative to the panel opening are such that as the insert is forced into the opening, panel material cold flows against the surfaces of the insert to tightly secure the insert in the panel. The surfaces of the insert that contact cold flowed panel material are free of re-entrant points or edges that can create stress concentrations.

3,443,618
PUNCTURE-PROOF TIRE LINER
Amos M. Kelley, Rte. 1, Box 121A, Refugio, Tex. 78377
Filed Jan. 24, 1967, Ser. No. 611,298
Int. Cl. B60c 9/00, 5/02
U.S. Cl. 152—206 5 Claims

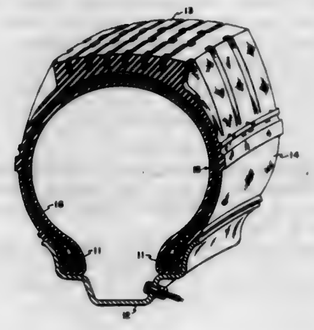


A tire armoring interliner sandwiched between the interior of a tire casing and tube and characterized by an endless annulus. This annulus is made up of companion flexible and resilient rectangular metal cleat-like plates with lengthwise edges overlapping in fish-scale-fashion. In one form the plates are (A) riveted together and in second form the plates are (B) plastic-coated overlapped and confined in a snug-fitting but elastic jacket.

3,443,619
PNEUMATIC TIRE COMPOSITIONS COMPRISING ETHYLENE / PROPYLENE / DICYCLOPENTADIENE TERPOLYMER RUBBER
Robert W. Kindle, Cheshire, Conn., assignor to Uniroyal, Inc., a corporation of New Jersey
Filed Mar. 4, 1966, Ser. No. 531,726
Int. Cl. C08c 9/14; C08d 9/08
U.S. Cl. 152—330 2 Claims

White sidewalls for pneumatic tires that are highly resistant to cracking are made from a blend of EPDM in which the diene is dicyclopentadiene, and another elastomer (natural rubber or butadiene-styrene copolymer). Polychloroprene and chlorosulfonated polyethylene may also be included in the composition. The compositions are also useful as coverstrips or black sidewalls.

3,443,620
REINFORCEMENT OF RUBBERY POLYMERS
Byron M. Vanderbilt, and Robert E. Clayton, Westfield, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed Sept. 3, 1965, Ser. No. 485,029
The portion of the term of the patent subsequent to Mar. 7, 1984, has been disclaimed
Int. Cl. B32b 17/06, 13/12; B60c 5/00
U.S. Cl. 152—330 24 Claims



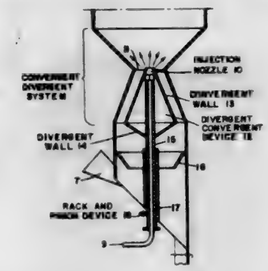
The process and the product of treating siliceous reinforcement for tires with the compound having the formula



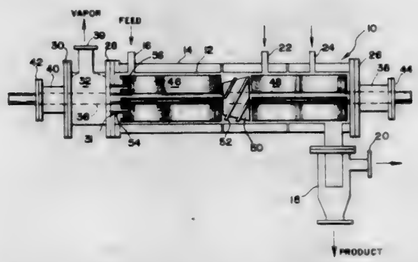
wherein R_1 is a vinyl group, R_2 and R_3 are selected from hydroxyl, methyl, halogen, alkoxy, acryloxy and R_1 and X is selected from halogen, hydroxyl, alkoxy, acryloxy and R_1, and X is selected from halogen, hydroxyl, alkoxy and acyloxy; further treating with a multi-unsaturated crosslinking agent containing at least 50% of its olefinic unsaturation of the 1,2-type ethylenic unsaturation and having a molecular weight of up to 15,000; and curing a free radical curable rubber while in contact with said reinforcement.

3,443,621
APPARATUS FOR THE GRANULATION OF FLUID PRODUCTS
Claude Dubreuil, Pont-de-Claix, France, assignor to Progil, Paris, France, a corporation of France
Filed Feb. 24, 1967, Ser. No. 618,376
Claims priority, application France, Jan. 26, 1967, 47,005
Int. Cl. B01d 1/16; F26b 17/10
U.S. Cl 159—4 4 Claims

Apparatus for granulating fluid products by the fluidised technique including a cylindrical granulator having a truncated cone-shaped base which forms a convergent-divergent system with the funnel for blowing in the stream of gas-provided with a convergent-divergent type of device mounted at the lower part of the granulator at the center of the convergent portion to guide the gas stream before it arrives at fluidised bed of granules, and means for raising and lowering this device with respect to the granulator, A zig-zag type baffle is placed at the upper portion of the granulator to retain the fine particles from passing out of the granulator. An inclined wall baffle is placed below the convergent-divergent type of device for dynamic equilibration of the gas stream before it reaches the device.



3,443,622
MULTI-ZONE PROCESSING APPARATUS
Leo J. Monty, Reading, Mass., assignor to Artisan Industries, Inc., Waltham, Mass., a corporation of Massachusetts
Continuation-in-part of application Ser. No. 573,981, Aug. 22, 1966. This application Apr. 2, 1968, Ser. No. 718,084
Int. Cl. B01d 1/22, 3/08
U.S. Cl. 159—6 8 Claims

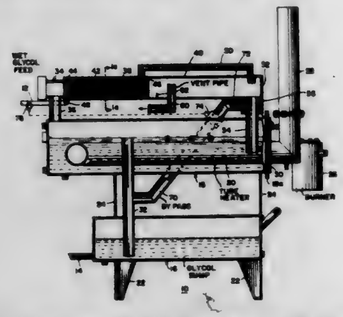


A horizontally axised thin-film evaporator for countercurrent operation which includes a vapor chamber adjacent to and upstream of the processing chamber. The wall between the vapor chamber and the processing chamber has a vapor stream passage. Secured about the passage is a flanged sleeve which extends outwardly from the wall into the processing chamber. The sleeve has a ring at the downstream end and prevents liquid material from being entrained in the vapor stream.

3,443,623
APPARATUS FOR RECONCENTRATING LIQUID DESICCANT
Gene O. Sinex, Farmington, N. Mex., assignor to American Tank and Steel Corporation, Farmington, N. Mex.
Filed Oct. 12, 1966, Ser. No. 586,097
Int. Cl. B01d 1/04
U.S. Cl. 159—31 16 Claims

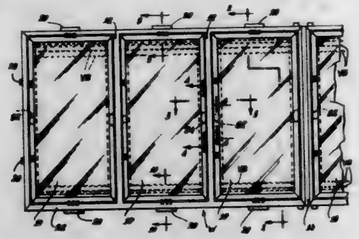
An apparatus for reconcentrating liquid dehydrating agents and the like by the removal of moisture therefrom comprising boiler means for holding a quantity of said

dehydrating agent, means for heating the boiler means to vaporize the moisture in the dehydrating agent, and sump means in communication with the boiler for collecting reconcentrated dehydrating agent having the moisture removed therefrom. Supply conduit means are provided for directing an incoming flow of wet or rich dehydrating agent



into the boiler means for reconcentration therein, and bypass conduit means is provided between the supply conduit means and the sump for diverting the incoming flow of dehydrating agent directly into the sump and, when the temperature of the dehydrating agent reaches a selected value, to avoid overheating and excessive loss of the dehydrating agent.

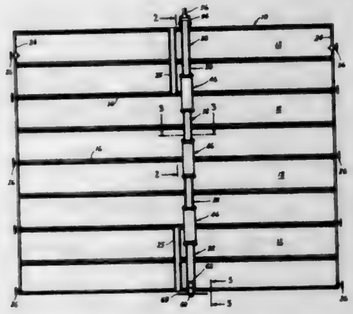
3,443,624
VENETIAN BLIND WINDOW
Louis Toth, Easton, Conn., assignor to Anchor Enterprises Corporation, Bridgeport, Conn., a corporation of Connecticut
Filed Aug. 10, 1967, Ser. No. 659,653
Int. Cl. E06b *3/40, 3/66, 9/303*
U.S. Cl. 160—107 17 Claims



A pivotal double pane window mounted upon locking pivot means and having a Venetian blind positioned between the panes which may be actuated by the single control knob for raising, lowering and tilting the blind blades and a control mechanism which allows the blades to be raised and lowered only when the blades are horizontal or open.

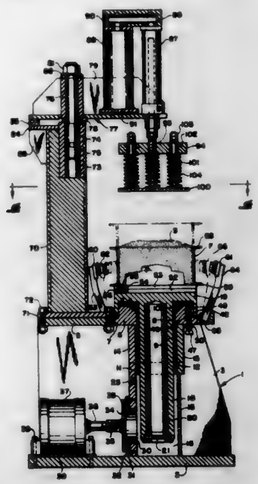
3,443,625
REINFORCED COLLAPSIBLE DOOR
Lester W. Moser, Royal Oak, and Aldo Romanelli, Warren, Mich., assignors to The Stanley Works, New Britain, Conn., a corporation of Connecticut
Filed Dec. 26, 1967, Ser. No. 693,196
Int. Cl. E05d *15/00, 15/08*
U.S. Cl. 160—181 15 Claims

There is disclosed a post assembly for reinforcing a door of the type having a plurality of transversely extending panels which are hingedly connected at their top and bottom edges such as conventional garage doors of the overhead type. The post assembly includes a plurality of reinforcing members which are mounted on the several door panels and cap members overlying the adjacent ends of the reinforcing members which prevent movement of the reinforcing members in the direction of the cap members or inwardly of the structure. The cap members are pivotally connected to the reinforcing members so as to permit relative pivotal movement between or pivoting of the panels as the door is moved into open position. Header locking means provides engagement between the upper



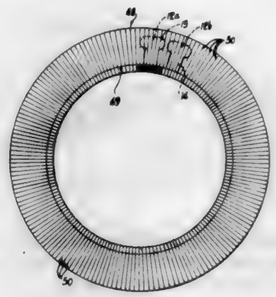
end portion of the post assembly and the header above the door opening, and bottom locking means provides engagement between the lower end portion of the post assembly and the floor of the structure about the door opening. Both locking means are engageable when the door is moved into closed position but readily disengage when the door is moved upwardly into open position.

3,443,626
FOUNDRY MOLDING METHOD
Leon F. Miller, Rocky River, Ohio, assignor, by mesne assignments, to The Sherwin-Williams Company, a corporation of Ohio
Original application Jan. 24, 1966, Ser. No. 522,643, now Patent No. 3,385,347, dated May 28, 1968. Divided and this application Jan. 17, 1968, Ser. No. 698,602
Int. Cl. B22c *15/10, 15/02*
U.S. Cl. 164—39 15 Claims



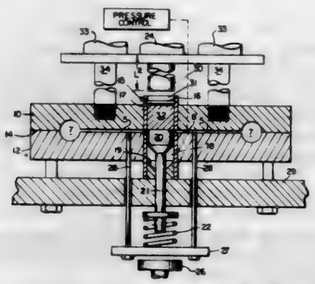
A foundry molding method which includes the step of filling a mold box with sand, accelerating the filled mold box toward a firm abutment at substantial speed, and then stopping the box with extremely rapid deceleration at a point slightly spaced from the abutment to cause the sand to be firmly packed within the box.

3,443,627
METHOD OF MAKING A PATTERN SET-UP FOR USE IN INVESTMENT CASTING
Claude H. Watts, Lyndhurst, Ohio, assignor to Precision Metalsmiths, Inc.
Filed Feb. 28, 1966, Ser. No. 530,488
Int. Cl. B22c *7/00, 7/04*
U.S. Cl. 164—45 15 Claims



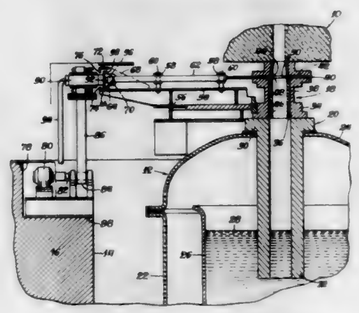
In the art of investment casting, a method of assembling a pattern set-up including the steps of positioning a pattern or patterns on one or more scales having spaced graduations which sub-divide a sprue member so that the desired distance between the gates of the patterns when attached to the sprue member can be determined, and thereafter attaching the patterns to the sprue member so that the gates of the patterns are spaced apart by the distance determined from the scale or scales; and a sprue member with visible markings for use in locating the patterns to be attached thereto. A sprue member comprising a tube and a corrugated sleeve surrounding the tube.

3,443,628
PRESSURE DIECASTING APPARATUS AND METHOD
Irving A. Carr, 60 Gardner St., Hingham, Mass. 01440
Filed Aug. 31, 1966, Ser. No. 576,288
Int. Cl. B22d *27/12, 17/32, 17/00*
U.S. Cl. 164—313 7 Claims



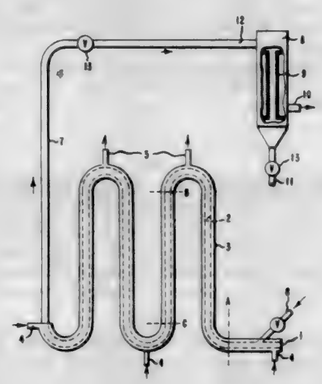
A diecasting apparatus which comprises upper and lower mold elements which define a casting cavity when in the closed position. Within the upper mold element is an injection chamber and an injection piston is contained therein in a close slideable fit and similarly the lower mold element contains an ejection chamber with an ejection piston contained therein in a close slideable fit. The upper mold element is adapted to reciprocate between a first opened and a second closed position and the injection piston also moves between a first and a second position. The circumferential walls of the injection piston are at all times in close contact with the internal walls of the chamber whereby the piston is continuously wiped in both directions by the action of the chamber walls when the upper mold element moves from the closed to the open position and thereafter the piston moves from the first to the second position.

3,443,629
APPARATUS FOR CASTING METAL ARTICLES
Arthur W. Ebeling, Elmhurst, Ill., assignor to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey
Filed July 18, 1966, Ser. No. 566,020
Int. Cl. B22d *35/04, 37/00*
U.S. Cl. 164—339 5 Claims



An apparatus for casting metal articles includes a foundation, a sealable tank supported by the foundation, a ladle in the tank, a mold assembly above the ladle having a gate, and a pouring tube between the ladle and the gate. A slide cut-off member is provided in the gate for terminating the flow of molten metal. A power cylinder is mounted on the foundation and is swingable from a remote position into a second position for operative engagement with the slide cut-off.

3,443,630
MAGNESIUM SURFACE FOR COOLING TiO_2
Joseph Robert Auld, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed June 19, 1967, Ser. No. 647,014
Int. Cl. F28f *19/06*; C01g *23/04*
U.S. Cl. 165—1 4 Claims

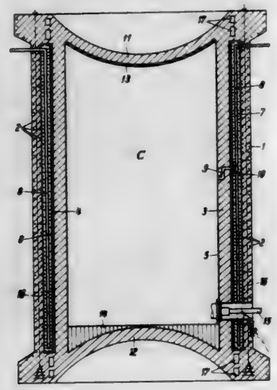


The hot effluent gases and solids from the oxidation of titanium tetrachloride are cooled by flowing contact with a magnesium wall which separates the effluent from the cooling medium.

3,443,631
HIGH-PRESSURE CONTAINER

Ferdinand Bremer, Essen-Bredeney, and Joachim Meyer, Essen, Germany, assignors to Beteiligungs- und Patentverwaltungsgesellschaft mit beschrankter Haftung, Essen, Germany

Filed Aug. 27, 1964, Ser. No. 392,517
Claims priority, application Germany, Sept. 19, 1963, B 73,573
Int. Cl. F24h *3/00*
U.S. Cl. 165—47 9 Claims

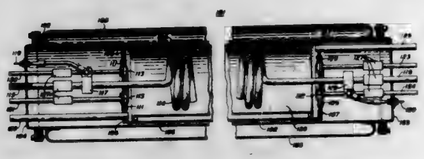


1. A high pressure container, which includes: an outer shell of prestressed concrete, an inner heat insulating shell arranged in radially spaced relationship to and within said outer shell so as to define therewith a chamber closed in itself, said chamber being filled with a liquid, cooling means extending into said liquid filled chamber for cooling the liquid therein, the inside wall of said inner shell defining a main chamber, and means communicating with both said inner chamber and said liquid filled chamber for equalizing the pressure in both of said chambers, whereby said inner shell does not have to absorb the pressure prevailing in said main chamber and said inner shell need not be of prestressed concrete.

3,443,632
UNITARY DUAL FUNCTION HEAT EXCHANGER FOR GASEOUS HEAT CARRIERS

Harold A. Sauer, Hatboro, Pa., assignor to Bell Telephone Laboratories, Incorporated, Berkeley Heights, N.J., a corporation of New York

Filed Apr. 14, 1967, Ser. No. 630,990
Int. Cl. F25d *29/00*
U.S. Cl. 165—58 10 Claims

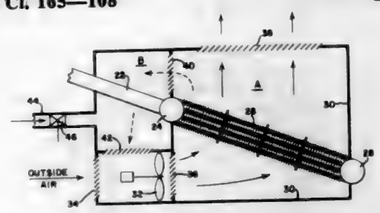


A unitary dual function heat exchanger for a gaseous medium utilizes a mantle with inner and outer evacuated chambers for insulating a heat exchanger cavity. A spiral electrically conductive tube passes through the cavity. In the heating mode, the temperature of the gaseous medium passing through the tube is raised by applying an electric heating current to the tube. In the cooling mode the temperature of the gaseous medium is lowered by a liquid coolant passed through the cavity surrounding the tube.

3,443,633
TEMPERATURE COMPENSATED AIR-COOLED STEAM CONDENSER

Theodore C. Carnavos, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed Mar. 30, 1967, Ser. No. 627,157
Int. Cl. F28f *13/08*
U.S. Cl. 165—108 2 Claims

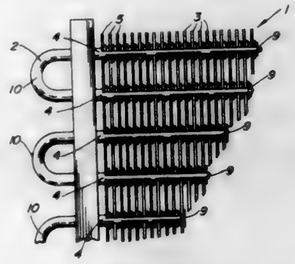


A freeze-preventive air-cooled steam condenser having and air recirculation conduit, dampers to control same, and a heat admission conduit thereto.

3,443,634
HEAT EXCHANGERS

Stephen F. Pasternak, Park Ridge, Ill., assignor to Peerless of America, Incorporated, Chicago, Ill., a corporation of Illinois

Continuation-in-part of application Ser. No. 576,599, Sept. 1, 1966. This application Apr. 6, 1967, Ser. No. 628,960
Int. Cl. F28f *1/32*
U.S. Cl. 165—182 7 Claims



A heat exchanger embodying cross fins having openings therethrough, with tubular members extending through the openings. The cross fins having flanges extending around the openings with the flanges interlocked to reinforce the marginal edges of the openings and space adjacent cross fins from each other.

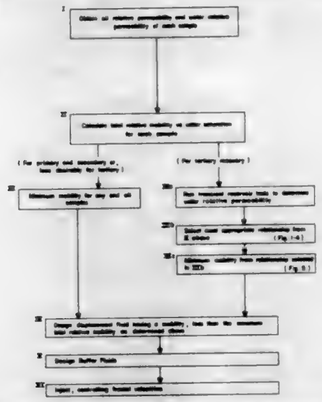
3,443,635
PROCESSES FOR THE SIMULTANEOUS DISPLACEMENT OF PETROLEUM AND WATER IN FORMATIONS

William B. Gogarty, Littleton, Colo., and Harold P. Meabon, Houston, Tex., assignors to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio

Filed Sept. 6, 1967, Ser. No. 665,763
Int. Cl. E21b *43/00, 47/00, 43/16*
U.S. Cl. 166—252 26 Claims

Petroleum and water can be simultaneously displaced in formation by determining the oil relative permeability and the water relative permeability both in relation to water saturation of representative rock samples, then calculating the total relative mobility and determining the minimum total relative mobility reasonably likely to be encountered in the formation. A displacing fluid having a mobility not greater than the minimum total relative mobility can then be injected into the formation to simultaneously displace, at controlled rate, water and petroleum

present in the formation. In tertiary operations transient testing may be utilized in the determination of the mini-

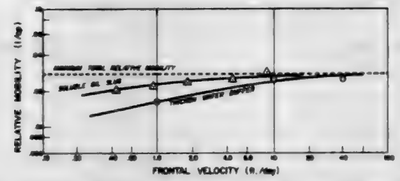


mum total relative mobility. Petroleum is obviously used for lubricating oils, gasolines, coke, etc.

3,443,636
PROCESSES FOR THE SIMULTANEOUS DISPLACEMENT OF PETROLEUM AND WATER IN FORMATIONS

William B. Gogarty, Littleton, Colo., assignor to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio

Filed Sept. 6, 1967, Ser. No. 665,845
Int. Cl. E21b *43/20*
U.S. Cl. 166—250 12 Claims



The present invention comprises a process for the simultaneous displacement of petroleum and water in a formation by injecting thereinto a displacing fluid having a relative mobility not greater than the mnimum total relative mobility of the oil and water phases reasonably likely to be encountered in the formation under prevailing formation conditions. The total relative mobility corresponding to the water saturation caused by an appropriate slug of displacement fluid flowing in at least one rock sample reasonably representative of said formation is determined by flowing a representative slug of the actual displacement fluid to be used through said rock sample for a distance sufficient to achieve an equilibrium water saturation representative of the water saturation which will be caused by the slug flowing through the actual reservoir.

3,443,637
METHOD FOR PLACING GRAVEL PACKS

Derry D. Sparlin, Ponca City, Okla., and William C. Bond, Casper, Wyo., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

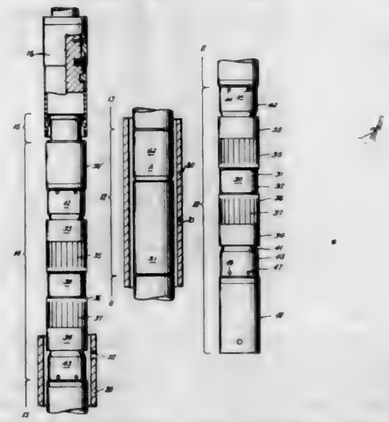
No Drawing. Filed June 21, 1967, Ser. No. 647,597
Int. Cl. E21b *33/13, 43/22*
U.S. Cl. 166—295 17 Claims

Discloses a method of gravel packing wells using a slurry of gravel in a carrier fluid and including a tackifier or tackifying agent insoluble in the carrier fluid. Tackifiers include thermosetting resins, thermoplastic polymers, rubbers, gums, natural resins, waxes, greases, heavy oils and simple syrup.

3,443,638
PACK-OFF ASSEMBLY AND METHOD OF RUNNING PIPE

Henry C. Haynie, 8164 Glenview Drive, Houston, Tex. 77017

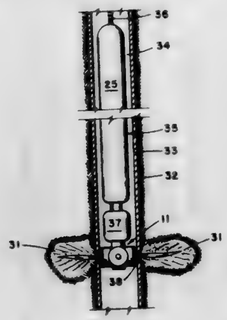
Continuation-in-part of application Ser. No. 587,934, Oct. 19, 1966. This application June 9, 1967, Ser. No. 645,039
Int. Cl. E21b *31/00, 23/00;* F16l *17/02*
U.S. Cl. 166—277 16 Claims



A fluid conduit is to be run into a well pipe, e.g. to pack off a hole in the tubing, or to provide an additional fluid conductor extending to the top of the well. The well is under pressure and a lubricator is connected to the top of the tree. A slip type stop or a collar stop is lowered on a wire line from the lubricator into the well pipe and set at a desired level, e.g. below the hole in the tubing in the case of a pack off assembly, or between production zones in case the conduit to be run is the central conduit of a concentric multiple completion well. A first subassembly including a length of conduit having at its upper end the socket part of an extension joint and at its lower end being adapted to rest on the stop and having an overall length receivable in the lubricator is then run in from the lubricator on a wire line and set on the stop. If a hole in the well pipe is to be packed off, or if for other reason upper and lower zones of the well pipe are to be separated a sealing means is included near the lower part of the subassembly. Additional subassemblies, each including a length of conduit and having at the lower end the pin part of an extension joint and at the upper end the socket part of an extension joint are similarly run in on a wire line from the lubricator. When the desired level is reached, e.g. above the hole in the well pipe in the case of a pack-off assembly, or the christmas tree in the case of a production tubing, gas string, or a kill pipe, a final subassembly is similarly run on a wire line from the lubricator. The final subassembly includes a length of conduit having at its lower end the pin part of an extension joint and at its upper end a slip type hold-down anchor and just below the anchor a sealing means to seal between the conduit and the well pipe, well head, or tree element. If the conduit is to be removed the subassemblies are pulled out on a wire line into the lubricator in the reverse order to that in which they were run in. Each subassembly includes at its upper end a connection means such as an inside or outside fishing neck to releasably engage the wire line running or retrieving tool. The extension joints each include a pin

having a seal means therearound and a socket having an inside fishing neck thereabove.

3,443,639
METHOD FOR CONSOLIDATING AN UNCONSOLIDATED SAND WITH A PLASMA JET STREAM
Maurice M. Patterson and Michael Prats, Houston, Tex., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Nov. 24, 1967, Ser. No. 685,471
Int. Cl. E21b *33/13, 43/11*
U.S. Cl. 166—288 6 Claims



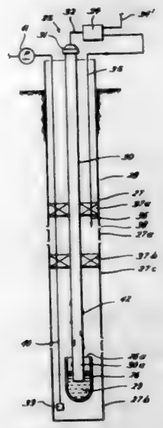
A method for consolidating unconsolidated sand disposed in earth formations adjacent the cased portion of a cased subterranean well. An ionized gas device is positioned in the cased portion of the well at a depth adjacent to an unconsolidated sand within the earth formations. A jet stream of ionized gas is directed from the device through the cased portion and into the unconsolidated sand until sand melting along the intergranular contacts converts the adjacent portion of the sand to a porous consolidated formation.

3,443,640
METHOD OF REDUCING THE PERMEABILITY OF A SUBSURFACE STRATUM
Frederick A. Klein, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed June 5, 1967, Ser. No. 643,354
Int. Cl. E21b *33/138, 43/25*
U.S. Cl. 166—294 4 Claims

Selective plugging of a subsurface formation wherein an aqueous slug comprising minute solid particles in suspension and a dispersing surfactant in solution, the slug having a predetermined degree of stability, is injected and driven into the formation, desorbing the surfactant to the extent that the minute solids are precipitated from the suspension and deposit in the formation.

3,443,641
METHOD AND APPARATUS FOR RECOVERY OF LIQUIDS FROM A WELL BORE
William P. McComb, late of Box 1291, Conroe, Tex. 77301; Austin B. McComb, administrator of said W. P. McComb, deceased
Filed Feb. 27, 1967, Ser. No. 618,939
Int. Cl. E21b *43/16*
U.S. Cl. 166—302 5 Claims

A method and apparatus for recovery of liquids and vapors from a well bore including positioning a compressor means and a condensor means adjacent the well bore and positioning an evaporation means in the well bore to cool and condense a portion of the vapors in the well bore into liquids. The compressor means, condensor means, and evaporator means are connected together to form a refrigeration cycle which causes a portion of the vapors in the well bore to condense as well as causing the higher temperature vapors and liquids in the surrounding higher pressure formation to move toward the cooled well bore for removal of the liquids and vapors by suitable means.

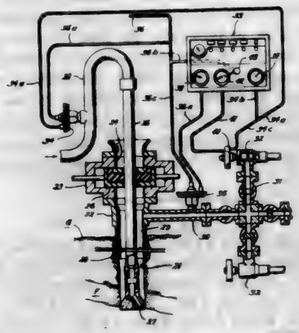


3,443,642
METHOD OF INVESTIGATING SUBSURFACE BORES AND APPARATUS THEREFOR
Wolfgang Jäger, Zwenkau, Bezirk, Leipzig, and Alfred Kössling, Taucha, Bezirk, Leipzig, Germany, assignors to VEB Geophysik, Leipzig, Germany, a corporation of Germany
Filed Jan. 10, 1967, Ser. No. 608,353
Int. Cl. E21b *23/00*
U.S. Cl. 166—315 10 Claims



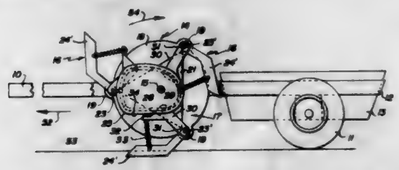
A system for anchoring a flexible element in a subsurface well whereby geological-investigation instruments can be guided into the well along the flexible element and wherein the anchor has a blade receivable in a retrieval sleeve while pawls are spring-biased outwardly on the blade so as to be cammed inwardly when the blade is inserted into the sleeve. When it is desired to retract the anchor, the blade engages the sleeve via the pawls. One or more spacer rods serve to maintain the sleeve and anchor in spaced relationship for advance of the anchor system into the bore whereby the pawls engage the wall of the bore for normal cable anchoring prior to retrieval.

3,443,643
APPARATUS FOR CONTROLLING THE PRESSURE IN A WELL
Marvin R. Jones, Houston, Tex., assignor to Cameron Iron Works, Inc., Houston, Tex.
Filed Dec. 30, 1966, Ser. No. 606,286
Int. Cl. E21b *21/00, 47/06*; F15d *1/00*
U.S. Cl. 175—25 18 Claims



A choke is connected to an outlet from the upper end of the annulus between a well bore penetrating an earth formation containing fluid under pressure and a drill string extending into the well bore. When a kick is encountered during drilling of the well, a blowout preventer at the wellhead about the outlet may be closed to divert drilling fluid circulating through the drill string and annulus through the choke. The choke is responsive to a bias and a control signal so as to regulate the pressure of the drilling fluid in order to maintain the differential between the bottom hole pressure of such drilling fluid and the pressure of the formation fluid at a predetermined value. Means are provided for producing a control signal and a bias which cooperate to cause the choke to respectively increase or decrease the formation fluid pressure within the outlet automatically in response to a deviation, negative or positive, from said predetermined pressure differential, whereby the outlet pressure approaches a value at which such deviation is zero. The bias is a signal representing the pressure of the drilling fluid within a standpipe connected to the upper end of the drill string and the control signal represents the sum of the circulating pressure loss within the drill string, the static pressure of the drilling fluid in such standpipe, and the predetermined pressure differential.

3,443,644
STONE PICKING MACHINES
John C. Schisdelka, Box 178, Raymore, Saskatchewan, Canada
Filed May 23, 1966, Ser. No. 552,311
Int. Cl. A01b *43/00*
U.S. Cl. 171—63 2 Claims

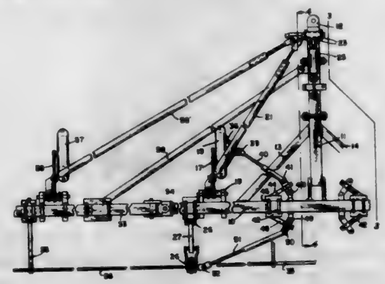


A wheeled chassis carrying a stone receptacle and an intermittently rotatable stone picker assembly which includes at least three stone picker units arranged so that when one unit occupies a ground engaging position, another unit is in a stone carrying position, and still another unit is in a stone dumping position adjacent the receptacle. A fluid operator intermittently rotates the picker assembly to move each picker unit from one position to the next. The picker units are pivotally mounted on the assembly for projecting and retracting movement and guide means are provided for retracting the units as they pass the stone receptacle.

ERRATUM

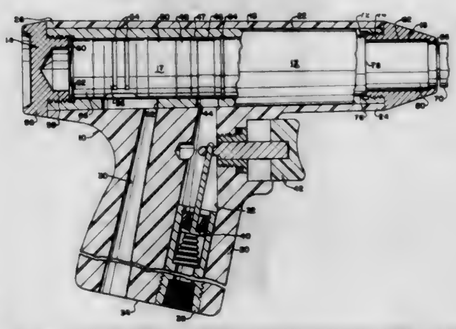
For Class 175—25 see:
Patent No. 3,443,643

3,443,645
ROTARY ROD WEEDER DRIVE
Lawrence H. Edwards, P.O. Box 995, Lethbridge, Alberta, Canada
Filed Nov. 3, 1966, Ser. No. 591,829
Int. Cl. A01b *39/19*; F16d *3/02, 3/72*
U.S. Cl. 172—44 1 Claim



A rotary rod weeder drive, wherein a wheel supported frame carries the working weeder rod which passes through the lower end of a frame-supported standard; a rotor linkage is formed from universals which connect spaced stub axles, each axle being rotatable in one of a semi-circular series of bearings which are carried by a plate; said plate adjustably secured to the frame for positions therealong; one end of said linkage driven by a ground wheel of the weeder and the other end passing into the upper end of the standard to drive said weeder rod through an endless belt therein.

3,443,646
HOUSING FOR TOOL MECHANISM
William J. Baker, Reed City, and Joseph F. Carter, Grand Haven, Mich., assignors to Gardner-Denver Company, a corporation of Delaware
Filed Mar. 16, 1967, Ser. No. 623,582
Int. Cl. B23b *45/04*; B27c *3/08*
U.S. Cl. 173—169 7 Claims



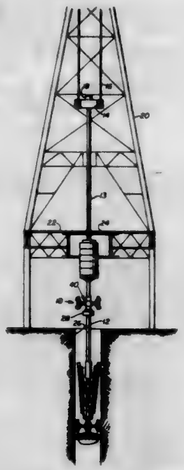
A tool housing having a molded nonmetallic pistol-grip handle and a barrel with a metal sleeve pressed into the bore of the barrel for receiving a motor and motor-driven tool components.

3,443,647
SLANT HOLE WELL DRILLING APPARATUS
Cecil Jenkins and Joseph R. Woolslayer, Tulsa, Okla., assignors to Lee C. Moore Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 1, 1968, Ser. No. 741,612
Int. Cl. E21b *19/00, 7/04*
U.S. Cl. 175—85 13 Claims



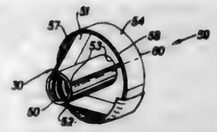
Mounted on a well drilling platform is a pipe setback tower that supports a pipe rack. Also mounted on the platform beside the tower is a drilling mast that has an open side facing the pipe rack. The mast may be inclined upwardly and away from the tower but is connected with it by means of a walkway. At the lower end of the mast there is a rotary table support for holding an inclined rotary table for slant drilling.

3,443,648
EARTH FORMATION UNDERREAMER
Clarence E. Howard, Cocoa Beach, Fla., assignor to Fenix & Scisson, Inc., Tulsa, Okla., a corporation of Oklahoma
Filed Sept. 13, 1967, Ser. No. 667,580
Int. Cl. E21b *1/06, 3/08, 5/00*
U.S. Cl. 175—103 9 Claims



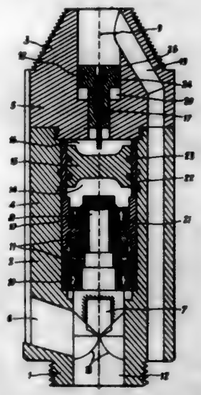
An underreamer is lowered down a bore hole in an inoperative condition, and upon reaching the desired depth, the apparatus is directed by means of surface controls to begin the operation of enlarging the bore hole. The cutting components may be suspended in the bore hole on a conventional drill pipe with all operating components, except an electric control circuit, positioned at the end of the drill pipe. The cutting components include one or more extensible cutting arms which are arranged to extend angularly outward from the drill pipe and to be operated rotatably by means of a hydraulic power system. Each cutting arm includes at least one self-powered cutter which is driven by a hydraulic motor which receives power from the central hydraulic system, and each cutting arm also includes a plurality of free wheeling cutters which cut by reason of the weight of the drilling system. The drill pipe section upon which the cutting arms are mounted in held in position by stabilizers above and below the cutters. Cuttings fall to a crusher and collector positioned below the cutters and are circulated up through the drill pipe by fluid being pumped into the bore hole.

3,443,649
APPARATUS FOR EARTH CORING
Stanley G. Atkins, 804 Stewart St., and Stanley R. Bailie, 824 Muriel St., both of Winnipeg 22, Manitoba, Canada
Filed Feb. 23, 1967, Ser. No. 617,895
Int. Cl. E01g *3/04;* E21c *13/00, 19/00*
U.S. Cl. 175—401 7 Claims



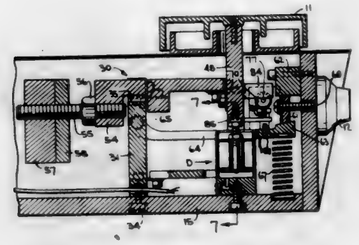
The invention relates to a cutter assembly for coring through earth formations consisting of an annular cutter ring with segmenting fins secured thereto and extending inwardly, with the trailing edge of the cutter ring being inturned.

3,443,650
DEVICE FOR BREAKING UP THE CORES FORMED BY CORE DRILLS
Serge Gstalder, Jean Raynal, and Bruno Renard, Pau, France, assignors to Societe Nationale des Petroles d'Aquitaine, Courbevoie, France, a corporation of France
Filed Mar. 16, 1967, Ser. No. 623,645
Claims priority, application France, Mar. 17, 1966, 53,801
Int. Cl. E21b *9/16;* E21c *13/02*
U.S. Cl. 175—404 5 Claims



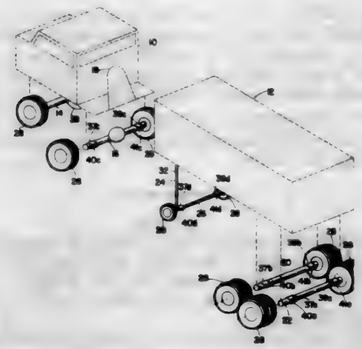
A core drill comprising means for breaking up the core as it is formed which comprises a system for applying hydraulic pressure to the core-breaking member and regulating the pressure thus applied by controlling the drop in drilling fluid pressure across the tool.

3,443,651
ENERGY SENSING WEIGHER FOR PACKAGING MACHINERY
Homer S. White, Atlanta, Ga., assignor to The Woodman Company, Inc., Decatur, Ga., a corporation of Georgia
Filed Aug. 17, 1966, Ser. No. 573,063
Int. Cl. G01g *23/18, 3/14*
U.S. Cl. 177—116 17 Claims



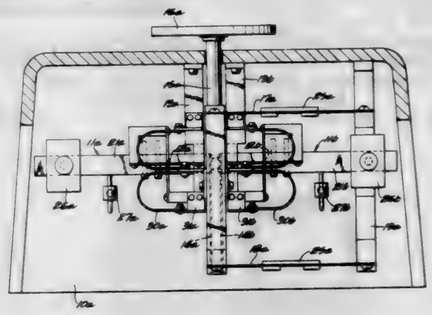
A weighing scale including an elongated scale beam having a weighing pan at one end and a preload weight at the other end is provided with upper and lower limit stops for the scale beam which are adjustable together so that the weight represented by the energy sensing means of the scale can be varied to a fine degree. The energy sensing means is also mounted for adjustable movement with the stop means so that the momentum of the scale pan at the actuation point is the same in each adjusted position. The platform upon which the stop means and energy sensing means are preferably mounted also serves to stabilize the support tower for the scale beam and said platform is moved by a cam acting against an inclined ramp. The energy sensing means is preferably in the form of a photoelectric cell and an additional photoelectric cell is provided to look across the entrance to the weighing hopper on the scale pan in order to modify said actuation point to anticipate making weight by said scale.

3,443,652
VEHICLE WEIGHING DEVICE
John A. Videon, 1415 NE. 9th St., Gainesville, Fla. 32601
Filed Aug. 23, 1965, Ser. No. 481,704
Int. Cl. G01g *19/08, 3/14*
U.S. Cl. 177—136 9 Claims



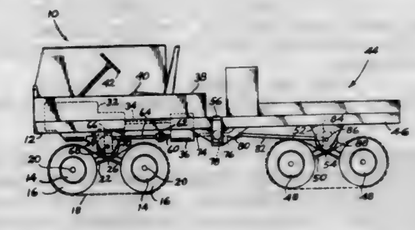
Vehicle weighing device comprising four strain gauges positioned on the upper and lower portions of the axle to measure both tension and compression and connected into a Wheatstone bridge such that the changes in tension and compression are additive to give increased sensitivity and to obviate the use of extra strain gauges for temperature compensation.

3,443,653
WEIGHING SCALE
Donald G. Marshall, Columbus, Ohio, assignor to Exact Weight Scale Corporation, Columbus, Ohio, a corporation of Ohio
Filed June 21, 1967, Ser. No. 647,786
Int. Cl. G01g *3/08*
U.S. Cl. 177—225 6 Claims



A weighing scale comprising a weighing lever supported for weighing movement by fulcrum means including crossed resilient flexures connected between the lever and a support, to permit movement of the lever relative to the support in response to weight applied to the lever, in combination with a resilient flex loop arrangement for resisting movement of said lever. The resilient flex loop arrangement comprises resilient flexes bent into U-form and arranged in pairs with the loop of each pair opposing and balancing each other, each loop having one end connected to a fixed support and the other end operatively connected to the lever.

3,443,654
TRACK-LAYING VEHICLE AND SELF-ENERGIZING TRACK TORQUE CONTROL THEREFOR
Richard H. A. Schoonover, Albany, Oreg., assignor to Katrak Vehicle Company, Albany, Oreg., a corporation of Oregon
Filed Aug. 15, 1967, Ser. No. 660,825
Int. Cl. B62d *55/06*
U.S. Cl. 180—9.62 4 Claims



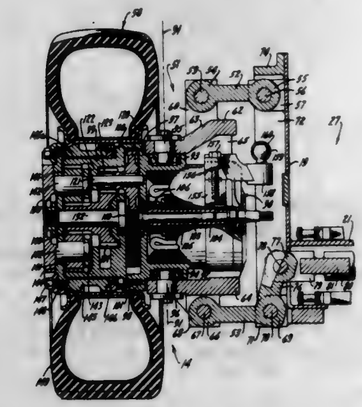
A pair of longitudinally spaced track mounting driving wheels are journaled on a walking beam secured to a vehicle frame for pivotal movement on a transverse axis against the resistance of a pair of longitudinally spaced

springs seated at one end on the walking beam and at the opposite end on a support member secured to a longitudinally movable differential and driven shaft housing. The support member is secured to the vehicle frame for pivotal movement selectively about each of three longitudinally spaced transverse pivot pins, whereby to permit longitudinal movement of a track drive sprocket on the driven shaft automatically to impose greater downward pressure on the front driving wheel progressively as the driving force of the vehicle increases.

3,443,655
MOTORIZED WHEEL ASSEMBLY

William R. Beck, Palos Heights, and John S. Newton, Glen Ellyn, Ill., assignors, by mesne assignments, to Westinghouse Air Brake Company, Pittsburgh, Pa., a corporation of Pennsylvania

Original application Nov. 19, 1963, Ser. No. 324,732, now Patent No. 3,302,739, dated Feb. 7, 1967. Divided and this application Aug. 8, 1966, Ser. No. 571,007
Int. Cl. B60k *1/00*; B62d *7/00*
U.S. Cl. 180—65 6 Claims



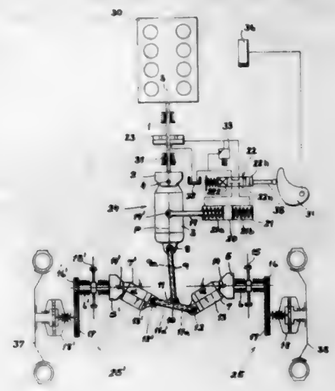
A standardized motorized wheel assembly for a vehicle such as a mine shuttle car which can be used with only minor attachment variations as either a steering wheel or a fixed wheel whereby a single wheel assembly may function as a spare wheel assembly for a 6 wheel car, the wheel assembly being relatively light weight due to use of the motor housing as a load transferral member, and easily disassembled for repair and maintenance.

3,443,656
HYDROSTATIC TRANSMISSION WITH MECHANICALLY LINKED PUMP AND MOTORS

Karl Stolz, Strassbessenbach, Germany, assignor to Linde Aktiengesellschaft, Wiesbaden, Germany, a corporation of Germany

Filed Mar. 5, 1968, Ser. No. 710,508
Claims priority, application Germany, Mar. 6, 1967, L 55,919
Int. Cl. B60k *3/02*, *17/10*; F16d *33/02*
U.S. Cl. 180—66 10 Claims

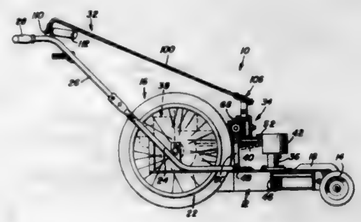
A hydrostatic power transmission in which a variable-displacement hydraulic pump (3, 103, 203) has its input shaft (1, 101, 201) driven and is hydraulically connected with at least one but preferably two hydrostatic motors (7, 7'; 107, 107'; 207) with tiltable control portions whose angle of tilt determines the displacement of pump and motors; a link (9, 109, 209) is articulated to the pump and to a double-arm lever (11, 111, 211) which is hinged at 12, 112 and 12', 112' to the tiltable portions of the motors (7, 7') on opposite sides of the respective axis (13, 13'), the motors being rotated with respect to one another through 180°.



3,443,657
POWER MOWER DRIVE MECHANISM

Anthony Sario, 2315 Anderson Ave., Fort Myers, Fla. 33901

Filed Oct. 9, 1967, Ser. No. 673,909
Int. Cl. A01d *35/26*; B62d *51/04*
U.S. Cl. 180—74 14 Claims



A propelling mechanism for engine powered mowers with relatively large, pneumatic tired wheels. The wheel tires are engageable by toothed drive elements rotated through a gear assembly extending transversely between the wheels and pivotally mounted on the frame assembly of the mower between the wheels and the power operated rotor hub to which the gear assembly is connected through an endless belt drive.

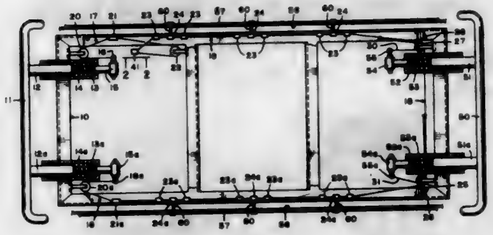
3,443,658
COLLISION-ACTUATED CIRCUIT BREAKER

John F. Culp, Rte. 1, Box 163, Bell City, Mo. 63737

Filed Sept. 12, 1966, Ser. No. 578,774
Int. Cl. B60k *27/08*; B60r *19/06*
U.S. Cl. 180—96 4 Claims

The collision-actuated circuit breaker includes movably mounted front and rear bumpers having plungers attached thereto. The plungers are connected to a flexible cable which is operatively connected to a switch. Guide means guide the flexible cable so that movement of the plunger means exerts a pull on the cable to operate the switch upon impact of the bumper with an obstacle. The switch

electrically disconnects the power source from the electrical circuit of the vehicle. Side sensing strips, constituting side bumpers and including plunger means, likewise

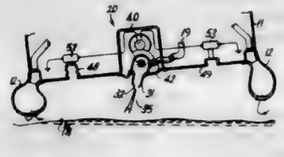


are connected by a flexible cable to the switch and operate to disconnect the power source when the vehicle suffers side impact.

3,443,659
GAS CUSHION VEHICLE WITH ATTITUDE STABILIZING MEANS

Robert Granville Moore, Hythe, Southampton, England, assignor to Hovercraft Development Limited, London, England, a British company

Filed Mar. 3, 1967, Ser. No. 620,403
Claims priority, application Great Britain, Mar. 8, 1966, 10,119/66
Int. Cl. B60v *1/02*, *1/12*, *1/16*
U.S. Cl. 180—118 7 Claims

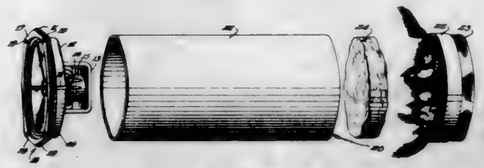


When a gas cushion vehicle tilts from its normal operating attitude, gas in the gas cushion tends to flow from the lowered side of the vehicle to the raised side of the vehicle and to escape from under the raised side of the vehicle so that the attitude-stability of the vehicle is adversely affected.

3,443,660
MID-RANGE SPEAKER AND ENCLOSURE COMBINATION

John Virva, Chicago, and Thor F. Olson, Villa Park, Ill., assignors to Admiral Corporation, Chicago, Ill., a corporation of Delaware

Filed Dec. 14, 1967, Ser. No. 690,512
Int. Cl. G10k *13/00*; H04r *7/16*
U.S. Cl. 181—31 10 Claims

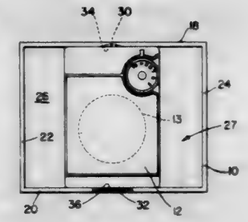


A mid-range loudspeaker having a rigid framework which contains a drum portion such that a cylindrical enclosure may be frictionally attached to the speaker by forcing it over the drum portion. The cylindrical enclosure, being fabricated from material impervious to acoustic energy, provides substantial tuning such that the loudspeaker-enclosure combination operates relatively efficiently over a relatively broad range of frequencies, without interference with other speakers operating nearby.

3,443,661
PACKAGE FOR RADIO

Herbert D. Van Sciver, Merion, Pa., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania

Continuation of application Ser. No. 606,335, Dec. 30, 1966. This application June 28, 1968, Ser. No. 752,424
Int. Cl. H04r *7/16*
U.S. Cl. 181—31 1 Claim

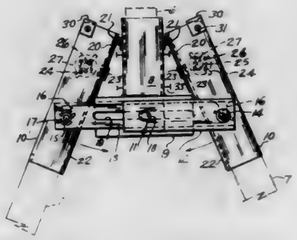


A packing box for a small transistor radio is provided. The box is dimensioned to hold the radio after it is unpacked. The box acts as a baffle and resonator to improve the reproduction of sound from the radio.

3,443,662
COLLAPSIBLE SAWHORSE BRACKET

John A. Thompson, 1355 Griffin Ave., Mahtomedi, Minn. 55115

Filed Nov. 7, 1967, Ser. No. 681,135
Int. Cl. E04g *1/34*, *1/32*
U.S. Cl. 182—155 5 Claims



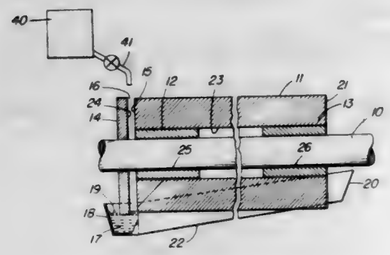
A pair of collapsible brackets providing connection between the horizontal work supporting bar and diverging legs of a sawhorse, each bracket comprising a pair of opposing leg channels, a body channel interposed between the leg channels, a laterally extending support for the body channel, a pair of longitudinally adjustable braces detachably connecting the leg channels and means movable to open and close the leg channels at their upper ends, the leg channels being mounted to swing in a

vertical plane to operative position and 90° about a horizontal axis to a folded position.

3,443,663
LUBRICATION SYSTEM EMPLOYING A VISCOELASTIC LIQUID

David B. Cox, Sewell, N.J., assignor to Mobil Oil Corporation, a corporation of New York

Filed Aug. 24, 1966, Ser. No. 574,710
Int. Cl. F01m 1/00; F16n 17/06, 29/00
U.S. Cl. 184—6 5 Claims

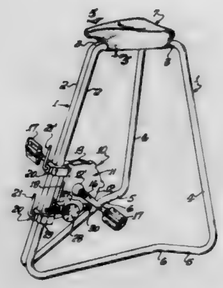


A pumping device is provided for continuously flowing a lubricant over a rotatable shaft, or other structure, to be lubricated. Pumping force for the lubricant is the normal force effect provided by a parallel plate arrangement on the shaft, employing a viscoelastic liquid as the lubricant. The lubricant is connected as it leaves the shaft and is returned by gravity to the parallel plates.

3,443,664
MANUALLY OPERATED MOTOR MEANS

John R. Frassanito, 8521 Appian Way, Los Angeles, Calif. 90028, Hugh V. Jorgensen, 1921 Beloit Ave., Los Angeles, Calif. 90025, and Robert Benedicte Brout, 4125 Toluca Lake Ave., Burbank, Calif. 91505

Filed May 17, 1967, Ser. No. 639,097
Int. Cl. F03g 5/06; F01k 23/00
U.S. Cl. 185—15 8 Claims

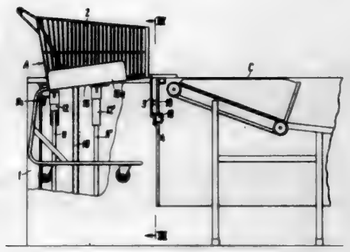


A bicycle pedal type of power conversion unit including a seat for the operator and a bicycle pedal type actuated power means effective to convert the manual effort of the operator into a rotating power output. The frame is foldable for transport and storing and the seat forms a portion of the means for securing the frame structure in its folded and unfolded position and the unfolded frame, in turn, affords support for the seat.

3,443,665
CHECK-OUT APPARATUS FOR SELF-SERVICE RETAIL STORES

Herbert Karl Zschaeck, Wehlingweg, Oberflockenbach l., Odenwald, Germany

Filed Aug. 24, 1967, Ser. No. 663,077
Claims priority, application Germany, Aug. 27, 1966, Z 12,399
Int. Cl. A47f 9/02; B62b 3/02
U.S. Cl. 186—1 28 Claims

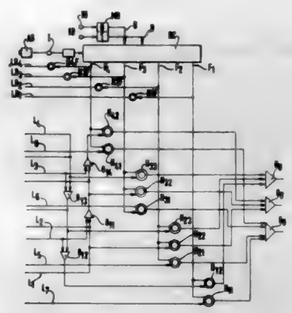


Check-out apparatus for self-service retail stores includes a plurality of shopping baskets having a normally closed side openable to provide access for removing from a respective basket merchandise previously deposited in said basket, a check-out counter having a merchandise-depositing location for receiving thereon merchandise removable from said basket, means located at said merchandise-depositing location for opening the normally closed side of a shopping basket brought into the proximity of said location, and lifting means at said location actuable for elevating said shopping basket to a level at which the bottom of said basket is located in substantially the same horizontal plane as the check-out counter top.

3,443,666
ELEVATOR CONTROL SYSTEM WITH AN UP-DOWN COUNTER TO DETERMINE CAR POSITION

Akira Abe, Takatsuki-shi, and Jukichi Takahashi, Kyoto, Japan, assignors to Tateisi Electronics Co., Kyoto, Japan, a corporation of Japan

Filed Dec. 30, 1964, Ser. No. 422,158
Claims priority, application Japan, Nov. 21, 1964, 39/66,108
Int. Cl. B66b 1/18
U.S. Cl. 187—29 1 Claim

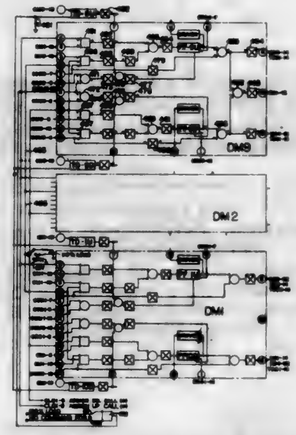


This invention relates generally to elevator control systems and more particularly to a system employing a reversible counter comprising static components for generating elevator car position signals. Push buttons for controlling a resettable memory unit and circuit details of the interconnections of the push buttons and the counter for providing the needed control signals are disclosed.

3,443,667
ELEVATOR DEMAND MEMORY

Donivan L. Hall, Toledo, and William C. Susor, Oregon, Ohio, assignors, by mesne assignments, to The Reliance Electric and Engineering Company, Cleveland, Ohio, a corporation of Ohio

Original application Oct. 8, 1965, Ser. No. 493,973. Divided and this application Feb. 29, 1968, Ser. No. 709,254
Int. Cl. B66b 1/22
U.S. Cl. 187—29 11 Claims

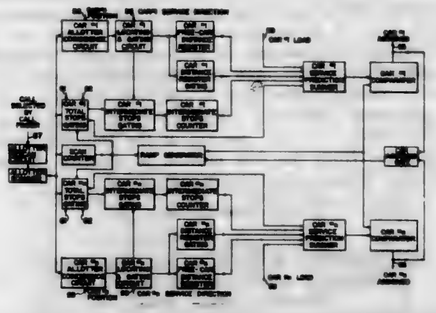


An elevator landing call storage element individual to a car for utiliaztion in plural car elevator systems having means to assign registered landing calls to individual cars independently of the proximity of the cars to the landings.

3,443,668
PLURAL CAR ELEVATOR SYSTEM FOR DEVELOPING HALL CALL ASSIGNMENTS BETWEEN INDIVIDUAL CARS AND REGISTERED HALL CALLS

Donivan L. Hall, Toledo, and William C. Susor, Oregon, Ohio, assignors, by mesne assignments, to The Reliance Electric and Engineering Company, Cleveland, Ohio, a corporation of Ohio

Filed Oct. 8, 1965, Ser. No. 493,973
Int. Cl. B66b 1/18
U.S. Cl. 187—29 47 Claims

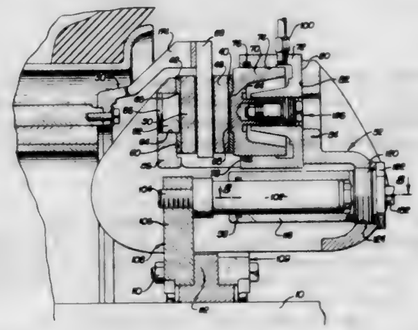


An elevator control assigns hall calls to individual cars of a group on the basis of the service capability relationship between each call and the several cars. Each hall call is entered into a hall call memory and maintained until the call is served. A call finder selects individual hall calls and presets an allotter which assigns the selected hall call to a car having an acceptable service capability with respect to the call. The allotter considers the number, nature and location of other calls assigned the car, the load on the car, the spatial relationship of the car to the call to be assigned and the state of operation of the car. The car closest to the call and within acceptable service capability limits receives the call assignment. Limits are relaxed if no car of the group is within the set limits. A change in service capability in the system other than service by a car releases the assignment of a call to a car so that the call can be reassigned based upon the new conditions. Assignment of hall calls can be made directly to a car already required to serve the floor of the call in the service direction of the call as by a car call, thereby avoiding processing through the allotter.

3,443,669
COMPENSATING DISK BRAKE WITH ACTIVE AND PASSIVE CALIPER CONFIGURATION HAVING INBOARD CALIPER RETRIEVER AND INDEPENDENT TORQUE RESOLVING MEMBERS

Dan W. Jeffries, Los Angeles, Calif., assignor of one-half to Harold W. Nash, Los Angeles, Calif.

Filed Jan. 8, 1968, Ser. No. 696,410
Int. Cl. F16d 63/00, 65/14; B60t 11/10
U.S. Cl. 188—70 21 Claims



The brake drum **20** (FIG. 1) is cooperable in a conventional manner with shoes **22**. In addition, it carries a brake disk **28**. The caliper **26** has ends extending on opposite sides of the disk **28**. A first brake shoes **42–50** is carried by one end of the caliper. A second brake shoe **40–48** is carried on a piston **70** that works in a cylinder **72**, in turn carried by the caliper. The disk **28** is clamped between the shoes upon application of fluid pressure. A compensator or retractor **136** is provided between the piston **70** and the cylinder **72**. The caliper is mounted upon a post **102**, in turn attached to the axle **10**. The caliper is moved to cause the shoe **42–50** to engage the disk **28** upon application of fluid pressure. For this purpose, the cylinder **118** and the compensator **146** operate in conjunction with the post **102** (FIG. 8). The compensator **146** achieves the appropriate retracting movement of the caliper on brake release.

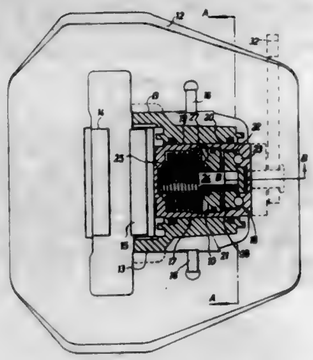
3,443,670
HYDRAULIC AND MECHANICAL BRAKE ACTUATOR

Hugh G. Margetts, Leamington Spa, England, assignor to Girling Limited, Tyseley, Birmingham, England

Filed Sept. 25, 1967, Ser. No. 670,234
Claims priority, application Great Britain, Oct. 1, 1966, 43,948/66
Int. Cl. F16d 65/14, 55/00, 19/00
U.S. Cl. 188—106 15 Claims

A brake actuator comprises hydraulic and mechanical actuators. The hydraulic actuator includes opposed hydraulic pistons in a through bore in a body member. A yoke slidably guided on the body member is abutted by one piston and supports an indirectly operated pad.

The other piston abuts a directly operated pad. The mechanical actuator includes a face cam housed within the one piston and a second cam journalled in the one piston about an axis offset from the piston axis. The second cam has a lever at one side of the yoke and serves to turn the rotatable member of the face cam, which rotatable member acts upon a strut forming part of an automatic adjuster associated with said other piston. A bowden cable acts between the lever and the yoke.



The invention is applicable to drum brakes as well as disc brakes and also includes brakes in which the automatic adjuster is associated with a cylinder body in which the first-mentioned piston is slidable.

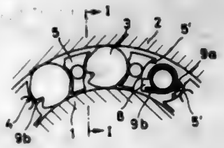
3,443,671
EXPANSIBLE CARRYING CASE
Herbert Gordon Dyke, Box 14, Dover, Del. 19901
Continuation-in-part of application Ser. No. 500,942, Oct. 22, 1965. This application Aug. 24, 1967, Ser. No. 663,079
Int. Cl. A45c *7/00, 3/02*; A63b *55/00*
U.S. Cl. 190—43 45 Claims



An expansible suitcase or the like, capable of being enlarged throughout an entire cross-section. A transversely extensible collar runs around the periphery. A slide fastener has its tracks spaced and running along the edges of that collar, with the tracks converging near one end, being there permanently coupled together and secured to the collar. A slider engages the slide fastener tracks where they are coupled together. The suitcase can be enlarged and contracted throughout an entire cross-section at will. The slide fastener is actuated by merely grasping the slider, where it is on the already-engaged slide fastener tracks, and moving it along its peripheral path.

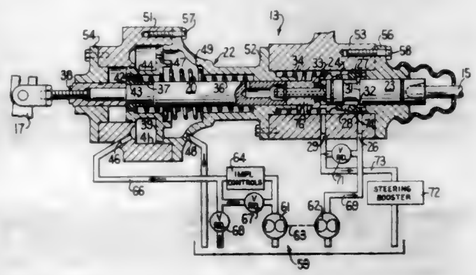
3,443,672
SPRAG-TYPE FREEWHEEL CLUTCH
Emil Giese, Bad Homburg vor der Hohe, Germany, assignor to Ringspann Albrecht Maurer, KG., Bad Homburg vor der Hohe, Germany
Filed Apr. 6, 1967, Ser. No. 628,876
Claims priority, application Germany, Apr. 22, 1966, R 43,155
Int. Cl. F16d *15/00, 41/06, 43/00*
U.S. Cl. 192—45.1 4 Claims

A freewheel clutch in which tiltable sprags, which are located between and adapted to act upon outer and inner clutch members, are guided by a common cage consisting of a cage ring and a cover ring which guide the opposite ends of the sprags and are secured to each other by projections on the cage ring which are provided with cylin-



drical bearing surfaces for guiding the corresponding lateral cylindrical surfaces of adjacent sprags, and wherein each sprag is acted upon by a separate spring which is mounted in the cage ring between the adjacent guide projections.

3,443,673
HYDRAULIC AND SPRING CLUTCH RELEASE BOOSTER
Paul C. Rosenberger, Decatur, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Sept. 6, 1967, Ser. No. 665,921
Int. Cl. F16d *25/08*
U.S. Cl. 192—91 8 Claims

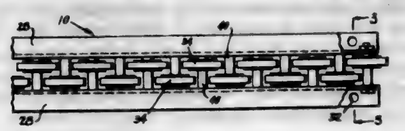


A hydraulic clutch booster including a spring to reduce clutch operating effort in the event of a hydraulic pressure failure. The booster has a control rod through which force is transmitted to operate the clutch and the spring is disposed to act upon the rod. Hydraulic fluid exerts pressure against a piston which is disposed in biasing relation to the spring to prevent action of the spring upon the control rod. To permit operation of the control rod in the event of a hydrostatic lock in the booster actuating hydraulic fluid, a two-piece actuating piston is associated with the booster control rod. A first actuating piston portion transmits hydraulic actuating force to the control rod while a second portion of the actuating piston is separable from the first portion to directly transmit mechanical force to the booster control rod.

3,443,674
ROLLERWAY AND ROLLER THEREFOR
Andrew T. Kornylak, 400 Heaton St., Hamilton, Ohio 45011
Continuation-in-part of application Ser. No. 550,746, May 17, 1966, which in turn is a continuation-in-part of application Ser. No. 392,222, Aug. 26, 1964. This application Nov. 8, 1967, Ser. No. 686,367
Int. Cl. B65g *13/00*
U.S. Cl. 193—37 14 Claims

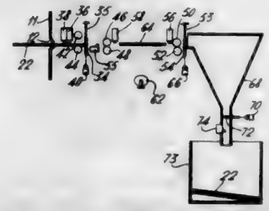
A rollerway comprising channels firmly secured together by spacing bolts lying in spaced parallel planes. The bolts in the upper plane support rollers having elastomeric tires

thereon to compensate for unevenness of the surfaces traveling thereon. The tires are molded on the rollers



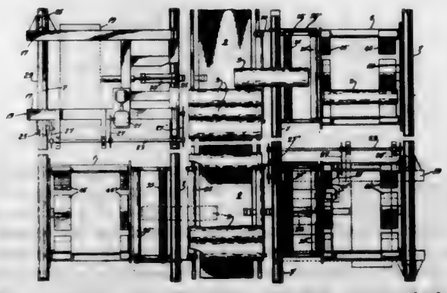
and have a flange fitted in a congruent groove in the roller to provide a firm fastening.

3,443,675
AUTOMATIC CREDIT LOAN MACHINE
Mititaka Yamamoto, Yukio Mizuta, Toshio Tanaka, and Takeo Asada, Kyoto, Japan, assignors to Omron Tateisi Electronics Co. (Tateisi Denki Kabushikikaisha), Kyoto, Japan, a company of Japan
Filed June 28, 1967, Ser. No. 649,666
Claims priority, application Japan, July 1, 1966, 41/42,799
Int. Cl. G07f *1/06*
U.S. Cl. 194—4 6 Claims



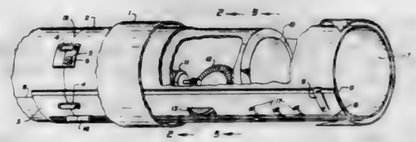
This invention provides an automatic credit loan machine operable in response to a credit card introduced thereinto to dispense a predetermined loan of cash, which comprises: means for testing the genuineness of a credit card introduced; means operable in response to the testing means for reading the identification number of the credit card and testing its validity; means for recording the identification number when it is valid; means for storing genuine cards that have been introduced into the machine so as not to be returned; and means for dispensing a predetermined loan of cash when the identification number of the credit card introduced is valid.

3,443,676
SYSTEM FOR MECHANICALLY FEEDING WOOD LOGS INTO SHAFTS
Georges A. Bilocq, Plessisville, Quebec, Canada, assignor to Forano Limitee, Plessisville, Quebec, Canada
Filed June 22, 1967, Ser. No. 648,016
Int. Cl. B65g *47/82, 57/18*
U.S. Cl. 198—24 5 Claims



The system comprises a travelling conveyor displaceable along the shafts and a vehicle mounted for displacement along the conveyor. A discarding piston is mounted on the vehicle for striking the logs on the conveyor to drive them into the shafts, selectively. A hopper is provided at the mouth of each shaft to ensure straightening and aligning of the logs, along an axis which is generally normal to the longitudinal axis of displacement of the conveyor and before they drop into the shafts.

3,443,677
CONVEYOR SYSTEM FOR MOVING SOLIDS OVER LONG DISTANCES
Norman G. Tribe, 5203 109A Ave., Edmonton, Alberta, Canada
Continuation-in-part of application Ser. No. 529,571, Feb. 23, 1966. This application Oct. 30, 1967, Ser. No. 679,096
Int. Cl. B65g *15/00*; H02k *41/00*
U.S. Cl. 198—184 11 Claims



A conveyor system comprising a rigid carrier pipe with a movable conveyor within it adapted for opening to receive a load and closing to protect the load during transit, drive means, such as an electric motor operating a driving wheel or a system of mutually repelling electromagnetic coils on the pipe and conveyor, being supplied from a succession of electrical supply locations spaced along the pipe.

3,443,678
VARIABLE TROUGH SUPPORT
Donald C. Reilly, Downers Grove, Ill., assignor to Westinghouse Air Brake Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 27, 1966, Ser. No. 604,712
Int. Cl. B65g *15/08*
U.S. Cl. 198—191 5 Claims

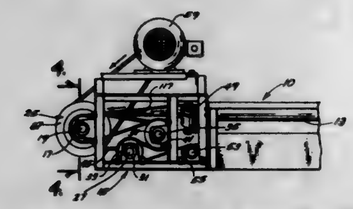


A low clearance conveyor belt supporting apparatus having a number of parallel leaf springs respectively, pivotally and slidably attached at each end to side frame supporting structures to enable flexing of the springs upon application of a force to the overlying conveyor belt.

3,443,679
TANDEM PULLEY DRIVE MEANS
Bernhard E. Jacobson, Cedar Falls, Iowa, assignor to Universal, Inc., Hudson, Iowa, a corporation of Iowa
Filed Sept. 2, 1966, Ser. No. 576,889
Int. Cl. B65g *23/04, 23/22*; F16h *7/02*
U.S. Cl. 198—203 5 Claims

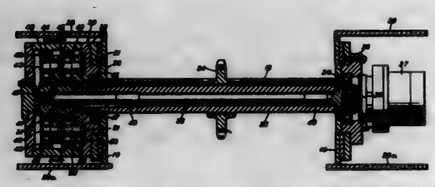
A tandem pulley drive means for a conveyor means wherein first and second drive pulleys are operatively rotatably secured to the conveyor frame means, a con-

veyor belt is mounted on the frame means and is in operative engagement with the first and second drive pulleys. A power source drives a differential means on the frame means and the differential means is connected to



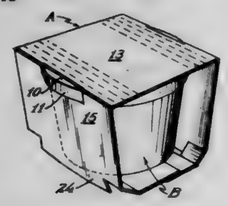
the first and second drive pulleys whereby the differential means permits the direction and rates of rotation of said first and second pulleys to be varied with respect to each other.

3,443,680
BORING-TYPE MINER CONVEYOR DRIVE
Edward F. Brill, Oconomowoc, Wis., assignor to Westinghouse Air Brake Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 24, 1967, Ser. No. 625,800
Int. Cl. B65g 23/08
U.S. Cl. 198—203 1 Claim



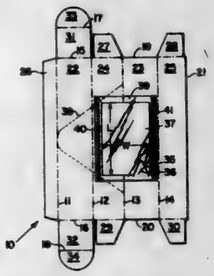
Compact drive unit for conveyor for continuous mining machine in which lateral maneuverability of the conveyor is increased by increasing the clearance between the sides of the conveyor and the ribs of the working place without reducing the capacity of the conveyor. This is attained by driving the conveyor by a fluid pressure operated motor mounted on one side of the conveyor and driving the conveyor from the motor through a planetary geared reduction device mounted on the opposite side of the conveyor. The drive to the conveyor from the planetary is through a hollow shaft, and the drive from the motor to the planetary is through a torsion shaft coaxial with the hollow shaft.

3,443,681
WRAPAROUND PACKAGING SLEEVE
Lawrence S. Wysocki, Chicago, Ill., assignor to Hoerner Waldorf Corporation, St. Paul, Minn., a corporation of Delaware
Filed May 20, 1968, Ser. No. 730,473
Int. Cl. B65d 85/00, 21/00
U.S. Cl. 206—46 9 Claims



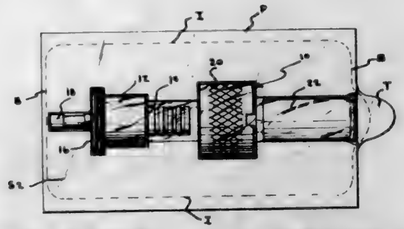
The invention comprises a wraparound sleeve for enclosing a bowl-shaped tub of product. The sleeve includes a top panel overlying the bowl cover, side wall panels extending downwardly and inwardly along the sides of the tub, and bottom flaps hinged to the lower ends of the side walls and secured in overlapping relation. U-shaped cut lines terminating at their upper ends at the lower edges of the side wall panels define legs or fenders substantially in the planes of the side wall panels and extending downwardly to support the bottom panels above a supporting surface.

3,443,682
CARTON HAVING AN INTERNAL, ARTICLE-RETAINING POCKET AND METHOD OF MAKING SAME
Robert A. Niemeyer, Colerain Township, Hamilton County, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed May 20, 1968, Ser. No. 730,228
Int. Cl. B65d 79/00
U.S. Cl. 206—47 10 Claims



A carton structure and method of making it wherein the carton is of tubular form and has an interiorly positioned pocket that extends across at least two abutting panels. The pocket is formed from a flexible material which is adhered along at least two marginal areas to the inner surface of the carton. The pocket thus formed receives and holds printed matter having a width and length greater than the width of either of the panels of the carton.

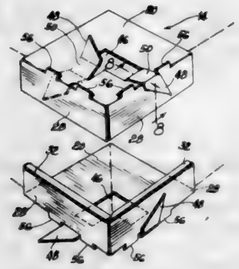
3,443,683
PACKAGE FACILITATING ASSEMBLY OF CONNECTOR ELEMENTS ONTO CABLE
Paul John Felty, Jr., Hershey, Pa., and Herbert Rosengren, Woodcliff Lake, N.J., assignors to AMP Incorporated, Harrisburg, Pa.
Filed Apr. 17, 1968, Ser. No. 721,997
Int. Cl. B65d 83/00
U.S. Cl. 206—56 20 Claims



A package for coaxial connectors is disclosed which features a thin, transparent covering encapsulating a series of coaxial connectors, each comprised of a number of elements properly arranged in the package for installation onto coaxial cable. Sheets comprising the covering are formed to extend over the connectors in a manner to facilitate cable insertion into connector elements. The sheets are arranged to permit reeling and the sheet material is indented to facilitate removal of one or a number

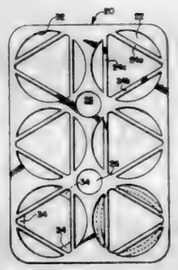
of connectors from the package. The sheets are sealed to protect each connector and each package portion containing a connector assembly includes indentations facilitating removal of a portion of the package to insert a coaxial cable within a connector in proper position within the package. The arrangement of elements within a package is made to facilitate crimping of the connector onto a cable without having to physically handle any of the elements of the connector.

3,443,684
CORNER PROTECTORS
Robert E. Taylor, Chicago, Ill., assignor to Redi Container Corporation, Chicago, Ill., a corporation of Illinois
Filed Sept. 5, 1967, Ser. No. 665,624
Int. Cl. B65d 85/46, 5/56
U.S. Cl. 206—60 9 Claims



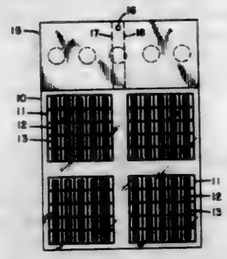
Protectors for fitting around the corners of objects to prevent damage during shipping and handling. The protectors are formed from a one-piece blank which includes a main panel and side panels attached along the edges of the main panel. The side panels fold into a plurality of thicknesses and are disposed at right angles to the main panel whereby all areas adjacent the corners of an object will be protected. Projections are formed in the side panels for interlocking relationship with the main panel to securely hold the protector in the proper configuration.

3,443,685
CONTAINER CARRIER AND PACKAGE
Herbert Jourdan Wanderer, Elmhurst, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed May 26, 1967, Ser. No. 641,537
Int. Cl. B65d 85/62
U.S. Cl. 206—65 8 Claims



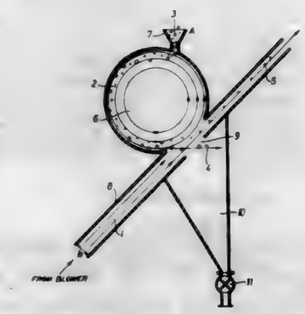
A carrier device for articles consisting of a flap of perforated material having apertures of a predetermined size, which apertures are associated with a plurality of resilient webs or straps associated with the flap and traversing the aperture opening so that upon association of an article into mounted position within the aperture the web portions grippingly engage the article and prevent its retraction back through the aperture through which the article was first passed.

3,443,686
HOLDING AND DISPLAY DEVICE FOR BOTTLE CAPS AND THE LIKE
Lester O. Raymond, 3436 45th Ave. S., Minneapolis, Minn. 55406
Filed Sept. 14, 1967, Ser. No. 667,783
Int. Cl. B65d 73/00; A44b 7/00; G09f 1/10
U.S. Cl. 206—78 5 Claims



A transparent foldable sheet of material contains a group of printed blocks arranged in a uniform pattern of rows and columns with each block defining a location for mounting an article such as a bottle cap or the like. A strip of clear adhesive runs down each row or column on the back of the sheet and is covered over with a backing strip which is removed when an article is to be attached. The top of the sheet is attached to a stiff header which, for example, may be made out of cardboard. The unit is constructed so that when it is filled with mounted articles it can be folded into a neat compact package.

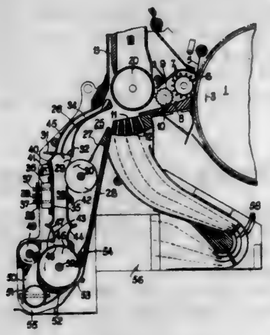
3,443,687
APPARATUS FOR CLASSIFYING PARTICULATE MATERIAL
Herbert Deussner, Cologne-Dellbruck, and Hugo Schmitz, Beckum, Germany, assignors to Klockner-Humboldt-Deutz Aktiengesellschaft, Cologne-Deutz, Germany, a corporation of Germany
Filed Sept. 14, 1966, Ser. No. 579,362
Claims priority, application Germany, Sept. 21, 1965, K 57,185
Int. Cl. B03b 1/00
U.S. Cl. 209—3 10 Claims



1. In an apparatus for classifying particulate material according to particle size and/or weight, whirl chamber means having an outer wall and an inner space at least partly surrounded by said outer wall, feeding means communicating with said whirl chamber means for feed-

ing thereto particulate material which is to be classified, and passage means extending tangentially to said whirl chamber means at a part of said outer wall thereof and communicating with said inner space of said whirl chamber means for directing a primary fluid stream tangentially with respect to and in engagement with a whirling fluid stream located in said inner space of said whirl chamber means, said passage means having an upstream portion directing the primary stream of said whirl chamber means and a downstream portion directing the primary stream away from said whirl chamber means, and said passage means including an outer wall formed in alignment with the location where said passage means communicates with said whirl chamber means with an opening through which heavier or larger particles will flow to be separated from finer or lighter particles carried along with the primary stream in the downstream portion of said passage means.

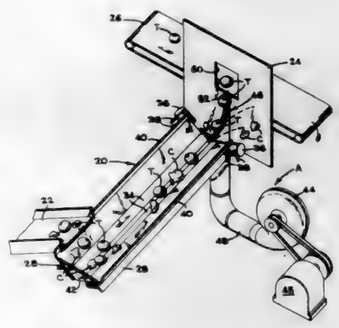
3,443,688
MACHINES FOR MANIPULATING CUT TOBACCO
Desmond Walter Molins, Deptford, London, England, assignor to The Molins Organisation Limited, London, England, a corporation of Great Britain
Continuation-in-part of application Ser. No. 292,604, July 3, 1963. This application Aug. 19, 1966, Ser. No. 573,517
Claims priority, application Great Britain, July 18, 1962, 27,576/62
Int. Cl. B07b *4/02*
U.S. Cl. 209—12 **5 Claims**



A separator for cut tobacco has an elutriating passage for a primary separation of light from heavy particles. At the lower end of the passage a roller having small recesses in its periphery receives the heavies fraction for secondary separation thereof. Small usable tobacco particles enter the recesses and the larger unusable tobacco remains on the surface of the roller. The small particles from said recesses is pneumatically combined with the primary lights fraction.

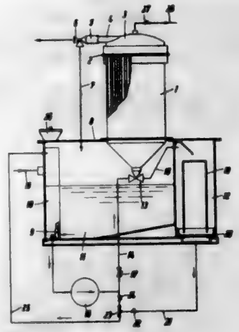
3,443,689
AERODYNAMIC SEPARATION OF SMOOTH, ROUND FROM ROUGH, IRREGULAR OBJECTS
James Carl Elliott, Palo Alto, and John Boyce, San Jose, Calif., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed May 29, 1968, Ser. No. 732,933
Int. Cl. B07b *4/00*
U.S. Cl. 209—139 **15 Claims**

Tomatoes are separated from clods of dirt by directing them, in single file, into and along a vertical sheet of air formed by a long and narrow nozzle. The tomatoes, due to their round, smooth shape, are lifted and centered in the air stream and move along the center line of the nozzle as the result of their initial momentum and, if desired, additional forward momentum obtained by declining the forward end of the nozzle slightly below the horizontal. As



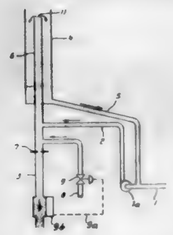
the tomatoes reach the end of the nozzle, they exit from the airstream due to their momentum and a forwardly inclined stream of air induced by a deflector and are deposited on a discharge conveyor. The clods of dirt are ejected obliquely from the airstream as the result of unbalanced forces due to their irregular shape.

3,443,690
FILTERING APPARATUS
Josef Triesch, Dusseldorf-Rath, Germany, assignor to Maschinenfabrik Sack G.m.b.H., Dusseldorf-Rath, Germany
Filed Aug 8, 1968, Ser. No. 751,301
Claims priority, application Germany, Aug. 12, 1967, M 59,698
Int. Cl. B01d *35/16, 35/00*
U.S. Cl. 210—95 **5 Claims**



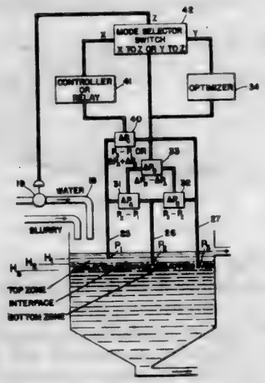
Filtering apparatus has a filter chamber with a filter element through which oil is pumped from an input chamber to remove entrained solids. A three-way valve at an input end of the filter chamber enables caked solids, dislodged from the filter element by a reverse flow of compressed air, together with oil from the filter chamber to pass to a sedimentation chamber in which a sieve retains the caked solids and from which the oil is drawn by an injector mounted in a bypass line leading from the pump to the input chamber.

3,443,691
APPARATUS FOR CONTINUOUS CONTROL OF THE CONCENTRATION OF A SUBSTANCE IN A FLOWING LIQUID
Vilgot Raymond Nilsson, Hagersten, Sweden, assignor to Alfa-Laval AB, Tumba, Sweden, a corporation of Sweden
Filed Nov. 22, 1966, Ser. No. 596,310
Claims priority, application Sweden, Nov. 23, 1965, 15,096/65
Int. Cl. B01d *33/38, 23/20*
U.S. Cl. 210—96 **4 Claims**



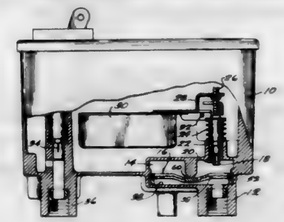
For continuously controlling the concentration of a substance in a liquid flowing through piping, an apparatus having means for limiting the liquid flow to a predetermined rate and to which a pipe is connected for supplying a further liquid to the flow limiting means, the supply of this further liquid being regulated by a valve controlled by an impulse means which in influenced by the concentration of the aforesaid substance in the resultant liquid mixture.

3,443,692
MAXIMIZING CONTROL SYSTEM
Homer P. Halsey, Poland, Ohio, assignor to Reserve Mining Company, Silver Bay, Minn., a corporation of Minnesota
Filed Apr. 14, 1966, Ser. No. 542,665
Int. Cl. B01d *33/38, 21/24*
U.S. Cl. 210—97 **5 Claims**



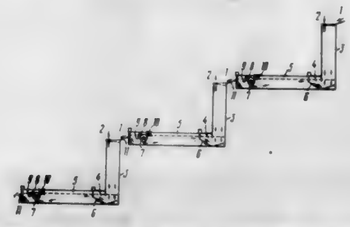
A settling tank is disclosed that contains two liquids of differing specific gravities, located in two zones separated by an interface. Three pneumatic bubbler tubes extend into the tank to measure the pressure across each zone. Optimizer control means are provided to sense these two pressures and to maintain a maximum difference between them by controlling the amount of water entering the tank, to thereby hold the interface at a preferred level. The optimizer control means may lose control if the interface should shift radically as a result of one of the liquids occupying both zones, since the difference in pressures will then approach zero. To overcome this problem, means are provided to sum the two pressures to resolve the ambiguity as the difference approaches zero, and to override the optimizer control means and take control of the water supply until the interface returns to a controllable level.

3,443,693
OIL CONTROL VALVE STRAINER ARRANGEMENT
William A. Biermann, Brookfield, Wis., assignor to Controls Company of America, Melrose Park, Ill., a corporation of Delaware
Filed Feb. 23, 1967, Ser. No. 618,074
Int. Cl. B01d *29/04, 39/12*
U.S. Cl. 210—123 **4 Claims**



The flat strainer at the inlet to the oil control valve can be removed from either side of the valve body. The internal rib holds the strainer frame flat against the flat floor of the cavity and during removal of the frame accumulated sediment will be scraped out of the cavity.

3,443,694
PURIFICATION OF LIQUIDS
Vsevolod Alexandrovich Malinovsky, Ljubertsy, pos. I.G.D. 16, kv. 35, Moscovskaya Oblast, U.S.S.R.
Filed June 20, 1966, Ser. No. 558,716
Int. Cl. C02b *9/02;* **C02c** *1/28*
U.S. Cl. 210—201 **4 Claims**

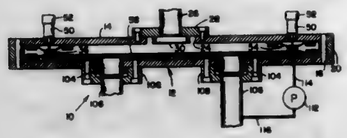


Apparatus for purifying liquid containing hydrophobic substance comprising a settling tank or plural tanks, having a vertically arranged chamber at one end in which the liquid is saturated with air and an adhesion drum cooperating with an impeller near the other end. A rotatable shield controls the depth of the stream.

3,443,695
FILTER ASSEMBLY HAVING TRAVELING SHEET FILTER
Raymond J. O'Neill, Berkeley, Calif., assignor to De Laval Turbine, Inc., Millbrae, Calif.
Filed May 23, 1966, Ser. No. 552,000
Int. Cl. B01d *33/00*
U.S. Cl. 210—251 **18 Claims**

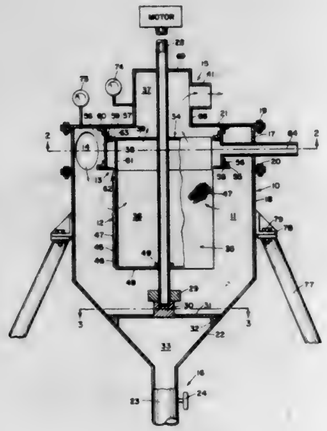
Filter assembly having a rigid, open frame movable into and out of an operative position forcing a continuous peripheral margin of a sheet of filter material against a supporting surface. Structure coupled with the frame causes

the latter to be forced into the operative position whereby a fluid to be filtered can be directed along a path across which the frame and the filter material are disposed. The



supporting surface may be provided with a channel aligned with the frame and coupled with a fluid device to inhibit leakage of fluid laterally of the frame.

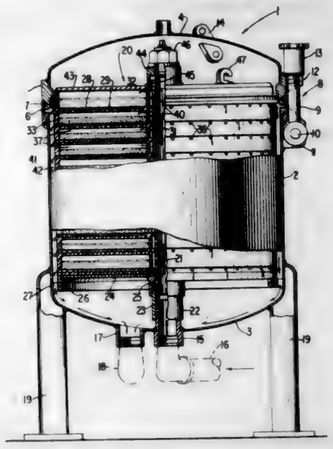
3,443,696
SOLID-FLUID SEPARATING DEVICE
August H. Schutte, Lexington, Mass., assignor to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed May 1, 1967, Ser. No. 635,150
Int. Cl. B01d *33/36, 35/16*
U.S. Cl. 210—297 **19 Claims**



Apparatus for separating finely divided particulate material within a predetermined size range from a fluid in which it is suspended. A rotating filter within a stationary housing defines an annulus in which the fluid is rotated and from which the particles are removed through a combination of centrifugal, gravitational and fluid drag forces. The clean fluid is removed by means which permits drawing it off near the inside wall of the rotating filter assembly. A unique fluid seal is provided around the top section of the rotating filter assembly.

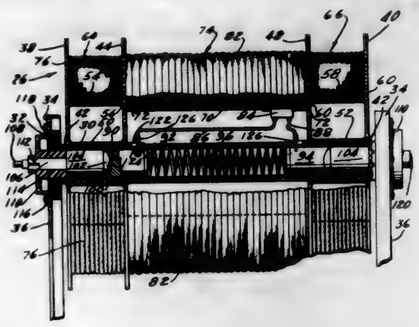
3,443,697
PLURAL, INVERTED, CUP-SHAPED FILTER ELEMENTS
Ernie G. Seggebruch, East Moline, Ill., assignor to Ametek, Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 23, 1967, Ser. No. 625,477
Int. Cl. B01d *29/42*
U.S. Cl. 210—344 **3 Claims**

An assembly of filter elements including a plurality of cup-shaped filter plates vertically stacked in inverted positions with each filter plate having an interrupted rim about the outer periphery of the top surface of its hori-



zontal wall so that the filtrate is discharged from between the filter plates through the openings formed in the rims.

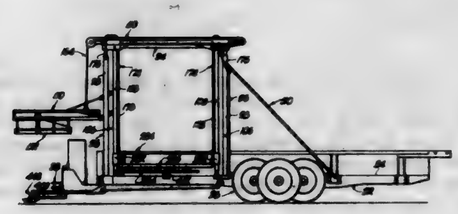
3,443,698
RETRIEVING LINE MECHANISM
Martin Luis Lopez, 225 S. 5th Ave., La Puente, Calif. 91746
Filed Mar. 29, 1967, Ser. No. 626,746
Int. Cl. B66c *23/00;* **F16h** *37/06;* **B66d** *1/26*
U.S. Cl. 212—9 **9 Claims**



A retrieving cable mechanism having apparatus for steel lines, and power lines for supplying operating power to a power operated device, carried by the hoisting line of a crane, the lines being adapted to be wound on and unwound from respective portions of said apparatus. The mechanics also has a power operated variable speed mechanism for one of the steel lines whereby the apparatus is operated.

3,443,699
MACHINE FOR HANDLING BALES
Ezra C. Lundahl, Logan, Utah, assignor to Hesston Corporation, Inc., Hesston, Kans., a corporation of Kansas
Filed Jan. 18, 1967, Ser. No. 610,065
Int. Cl. B60p *1/36*
U.S. Cl. 214—6 **5 Claims**

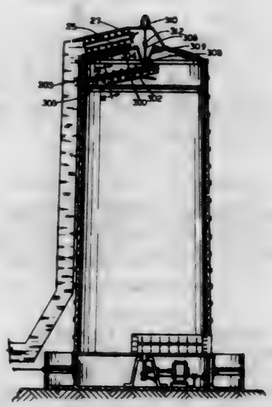
The structure disclosed herein includes hay bale loading and stacking apparatus for lifting bales of hay from the ground and arranging the same in a multiplicity of stabilized and shaped stacks of crosstied tiers having a plurality of side-by-side bales. The structure also includes an elongated bale transport which carries the apparatus along its side and has a bed for receiving the stacks from the apparatus, one at a time, until a load of stacks has been strategically placed thereon in a manner to maximize the number of individual bales in the load and permit movement of the transport over rough ground without substantial danger of topping of any of the stacks. In particular, the apparatus is provided with a crosstying turntable which is rotatable about an upright axis through an arc of 90° after each tier of bales is placed thereon, and thus, the longitudinal axes of the bales of each tier extend perpendicularly with respect to the longitudinal axes of bales of adjacent tiers. Further, a squaring compressor is provided for aligning the tiers of each stack to present a shaped column having substantially vertically, planar sidewalls.



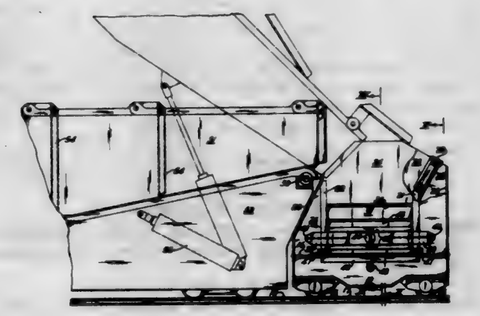
The apparatus is provided with a bale grabber for lifting the bales from the ground and placing the same on the turntable. A bale pusher is included for arranging the bales of each tier in side-by-side relationship atop the stack, and elevators are included to raise the grabber, the pusher and the compressor, each time a tier has been completed, to the level of the next tier to be placed on the stack. The structure has a pair of shifter assemblies for shoving the stacks, one at a time, off of the turntable and onto the bed and then move the stacks along the bed to compactly load the latter. A number of hydraulically actuated piston and cylinder assemblies are provided for controlling the operation of each of the major subassemblies mentioned above.

3,443,700
SILO STRUCTURE AND LOADING AND UNLOADING MEANS THEREFOR
Hermann K. Cymara, R.D. 2, Newfield, N.Y. 14867
Filed Sept. 29, 1966, Ser. No. 582,806
Int. Cl. B65g *65/32;* **E04b** *11/06;* **E04h** *7/24*
U.S. Cl. 214—17 **6 Claims**

Circular silo having a floor, a tapering side wall and air tight roof, and a covered conveyor for filling, the cross sectional area encompassed by the side wall gradually decreasing from floor to roof and including spaced staves of tapering members tapering from floor to roof, the side wall having door openings spaced by columns at the floor-level, with doors for each and having a collapsible rectangular tunnel forming apparatus on the floor extending along a radius and collapsible for removal through any door opening, a radial worm distributor at the upper end of the silo hung from the roof and riding on an annular rail, and rake apparatus disposed along a radius of the floor driven from below the floor by a coupling extending through a center aperture in the floor, the rake apparatus having tined rake members moving in a vertical plane parallel to the radius outwardly of the silo toward a door opening, the rake apparatus being removable from the silo through a door opening by uncoupling from the drive.



3,443,701
SCRAP CHARGING MACHINE
Harold E. Hobe, Johnstown, Pa., assignor to United States Steel Corporation, a corporation of Delaware
Filed Aug. 15, 1967, Ser. No. 660,727
Int. Cl. F23h *3/00;* **B66c** *17/08;* **B60p** *1/00*
U.S. Cl. 214—18 **5 Claims**

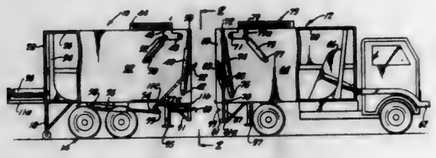


A machine for charging scrap into an open hearth furnace. Includes a car and a hopper on the car. Hopper has apron to project into furnace door, and a double-ram arrangement for pushing scrap from the hopper across the apron into the furnace.

3,443,702
CARGO TRANSFER BETWEEN VEHICLES
Earl W. Elton, 257 E. Dexter St., and Howard W. Smith, 740 N. Park Ave., both of Covina, Calif. 91722
Filed June 6, 1966, Ser. No. 555,328
Int. Cl. B65g *67/02;* **B65f** *3/00;* **B62d** *33/04*
U.S. Cl. 214—38 **6 Claims**

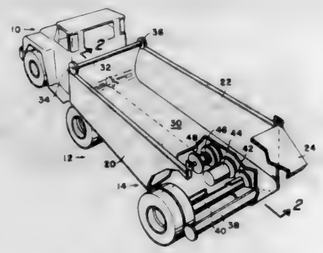
A combination of a pickup truck for collecting garbage and a semitrailer for bulk hauling of the collected garbage to a dump. The truck and semitrailer are designed to be backed together and held in rear end adjacency. Each of the vehicles has a body with tailgate members and an

internal blade suitable for garbage emptying purposes. The loaded truck and unloaded semitrailer can be backed together and their tailgates opened. The internal blade



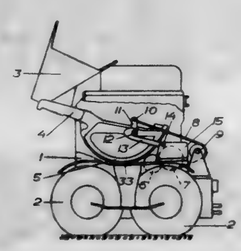
of the truck can then be actuated to transfer garbage to the semitrailer. After the semitrailer is full, it can be driven to a dump for discharge of its load.

3,443,703
DUMPING APPARATUS
Tom T. Matsumoto, 826 S. Mary, Sunnyvale, Calif. 94087
Filed Jan. 16, 1967, Ser. No. 609,671
Int. Cl. B60p *1/38*
U.S. Cl. 214—82 **5 Claims**



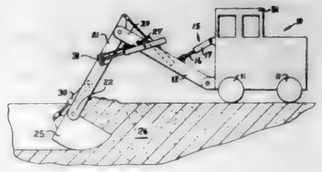
Dumping apparatus for unloading the cargo body of a truck including an elongated belt supported for powered movement within the cargo body from its front to its rear open end to carry and dump the cargo.

3,443,704
SHOVEL LOADERS
Sven-Erik Nore Eriksson, Adolfsberg, Sweden, assignor to Atlas Copco Aktiebolag, Nacka, Sweden, a corporation of Sweden
Filed June 26, 1967, Ser. No. 648,688
Claims priority, application Great Britain, July 4, 1966, 29,975/66
Int. Cl. E02f *3/70, 3/86*
U.S. Cl. 214—131 **5 Claims**



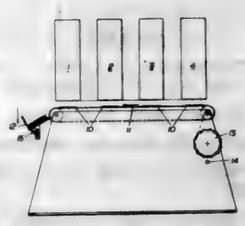
A shovel loader is provided having a transportable substructure, a shovel movable on said substructure from a low digging and loading position to an elevated discharge position, an operator manipulated means on the substructure for arresting and holding said shovel in an intermediate position between said low digging and said elevated discharge position.

3,443,705
BACK HOE
Robert J. Buttram, Terre Haute, Ind., assignor of one-half to Paul O. Hertwig, Terre Haute, Ind.
Filed Aug. 9, 1967, Ser. No. 659,390
Int. Cl. E02f *3/74, 3/84;* **G09f** *9/00*
U.S. Cl. 214—138 **6 Claims**



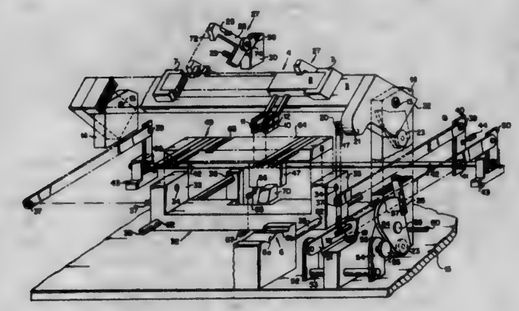
A back hoe including a boom, a crowd arm pivoted to the distal end of the boom, and a bucket pivoted to the distal end of the crowd arm. A pair of piston cylinders are pivotally mounted on the boom and can have their pistons projected a desired distance to prevent digging of the back hoe below a desired depth by engaging a pair of abutments mounted on the crowd arm.

3,443,706
METHOD FOR ARRANGING A PLURALITY OF PLATELIKE ELEMENTS FROM DIFFERENT SUPPLIES IN A PREDETERMINED SEQUENCE
Helmut Puhm, Graz, Austria, assignor to AGA-ELBAB Batteriewerke Gesellschaft m.b.H., Graz-Puntigam, Austria, a corporation of Austria
Original application Mar. 23, 1964, Ser. No. 353,788, now Patent No. 3,294,259, dated Dec. 27, 1966. Divided and this application Oct. 12, 1966, Ser. No. 602,110
Claims priority, application Austria, Apr. 3, 1963, A 2,697/63
Int. Cl. B65g *57/03, 57/11*
U.S. Cl. 214—152 **1 Claim**



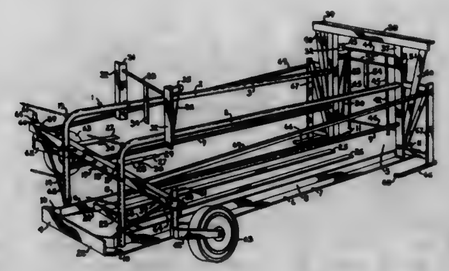
A method of assembling the components of a storage batery namely, positive and negative plates and separators, consisting of taking the plates and separators from stacks of such elements and collecting such elements in blocks. The elements are arranged in a predetermined sequence with separators in relatively reverse positions. The method includes arranging the elements in at least one vertical stack, holding the stacks in horizontally spaced positions by alternatingly holding each of the stacks only at the underside of the lowermost element. The stacks are held laterally only at the next to the bottommost element while permitting the lowermost element to drop by gravity from the stack. The dropped elements are transported and then collected.

3,443,707
WORKPIECE RACK UNLOADER APPARATUS
Walter W. Ficker, Fishkill, and Thomas J. Rajac and Alfred A. Stricker, Wappingers Falls, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed July 14, 1967, Ser. No. 653,383
Int. Cl. B65b *21/02, 69/00;* **B65g** *65/04*
U.S. Cl. 214—310 **10 Claims**



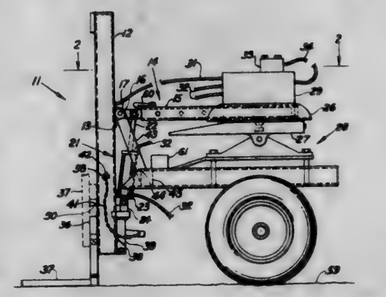
The article handling apparatus is for removing workpieces from a rack or other carrier unit that frictionally engages the workpieces. The apparatus has a support for the rack or carrier, workpiece ejector to engage workpieces in a rack, a means to provide relative movement between the workpiece ejector and the rack support to thereby eject the workpieces from the rack, and a slide to receive the workpieces.

3,443,708
BALE ACCUMULATOR FOR SPECIAL FIELD CONDITIONS
Calvin B. Blair, Barnard, Kans., assignor to United Manufacturers, Inc., Barnard, Kans., a corporation of Kansas
Continuation-in-part of application Ser. No. 447,379, Apr. 12, 1965. This application Feb. 6, 1967, Ser. No. 614,368
Int. Cl. B60p *1/00;* **B65g** *57/20;* **A01d** *75/04*
U.S. Cl. 214—353 **12 Claims**



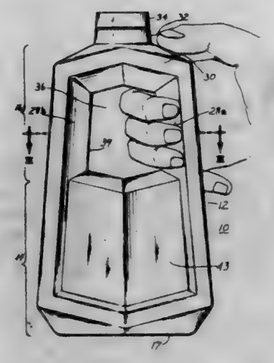
A rear delivery baler drawn bale accumulator and stacker is modified in structure so as to function properly when encountering special field conditions such as steep slopes, excesively rough ground, irrigation rills and wide ditches. The modifications include laterally projecting frame supporting members including wheels and runners, upwardly and outwardly directed lips extending along accumulator frame skids, bale supporting members in the form of elongated angles adjacent and between the skids, structure for displacing a bale laterally with respect to a bale therebeneath so that the discharged stack is stable though resting on a slope, and flexible hitch means including upper retainer chains and a cross-bar for resisting premature bale drop due to rough ground.

3,443,709
POWER LIFT APPARATUS
Peter E. Whiting, 4 Church St., Framingham, Mass. 01701
Filed Jan. 30, 1967, Ser. No. 612,385
Int. Cl. B66f *9/00, 11/00, 7/24*
U.S. Cl. 214—672 **20 Claims**



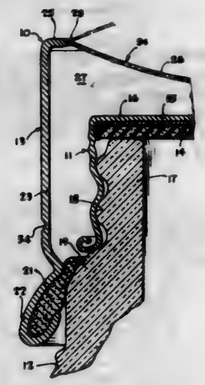
A self-contained, demountable power lift device adapted for use on the rear frame of a truck while in an operative position and for stowing beneath a truck trailer while in a collapsed position.

3,443,710
CONTAINER
David G. Hills, Collinsville, Conn., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Sept. 13, 1967, Ser. No. 667,407
Int. Cl. B65d *23/10, 23/12, 25/28*
U.S. Cl. 215—1 **1 Claim**



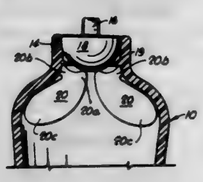
A container having a central gripping opening within the upper portion of the body.

3,443,711
VACUUM-INDICATING TWO-PART TAMPER-PROOF CLOSURE AND COMBINATION
David W. Olson, Waukegan, Ill., assignor to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois
Filed Aug. 29, 1967, Ser. No. 664,118
Int. Cl. B65d 53/02, 55/02; A61j 1/00
U.S. Cl. 215—7 8 Claims



A container closure having a primary cap seal and a secondary overcap overlying the primary cap seal. Both caps are sealed to a container with the space between the two being evacuated so that a leak at either the primary cap seal or the overcap will deflect the top of the overcap upwardly, giving a visual indication of leakage.

3,443,712
RESILIENT CONTAINER OPENING MEANS
Willis D. Hauser, 1346 SW. 74th St., Oklahoma City, Okla. 73159
Filed Apr. 25, 1968, Ser. No. 724,094
Int. Cl. B65d 55/02, 43/02, 45/00
U.S. Cl. 215—9 13 Claims



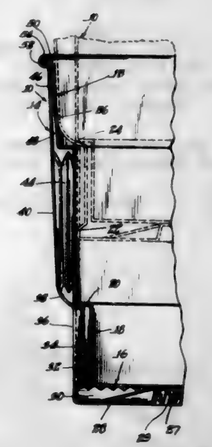
A friction type closure for a container constructed of resilient material, which closure includes a sealing cap adapted to be pressed into the open upper end of the container, and at least one ejection lobe projecting inwardly from the internal wall of the container beneath the sealing cap and positioned for undergoing an upwardly pivotal movement to eject the sealing cap when the wall of the container is pressed inwardly from the outside of the container. One form of the invention also includes a latch block which extends inwardly from the internal wall of the container across the path of pivotal movement of the ejection lobes, and which is secured to a finger depression in the container wall which permits finger pressure to be employed to move the latch block out of its position of interference with the ejecting movement of the ejection lobes.

3,443,713
CORNERED BLANKS FOR CLOSURE CAPS, LINERS, WASHERS, ETC., PLUS METHOD OF BLANKING AND FORMING THE BLANKS AND UTILIZING THE CORNERS THEREOF
John Kosar, Anchor Engineering Co., 29—09 Bridge Plaza N., Long Island City, N.Y. 11101
Continuation of application Ser. No. 337,880, Jan. 15, 1964, which is a continuation-in-part of application Ser. No. 121,570, July 3, 1961. This application Dec. 21, 1966, Ser. No. 605,132
Int. Cl. B65d 45/02, 45/22, 45/28
U.S. Cl. 215—43 10 Claims



1. A closure cap for a container having an opening, a liner within said cap for sealing said opening, said liner having a polygonal peripheral outline, the diameter across the corners of said outline is greater than that of the inside diameter of the skirt of said cap a sufficient amount to cause an angularly downwardly and outwardly bending of the corner portions of said liner upon its insertion into said cap to thereby be frictionally retained therein by the cap.

3,443,714
DOUBLE WALL CONTAINER
Bryant Edwards, Oak Park, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Jan. 18, 1968, Ser. No. 698,878
Int. Cl. B65d 25/18, 21/00
U.S. Cl. 220—9 6 Claims



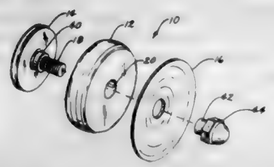
There is disclosed a double wall cup including inner and outer cup members formed from thin material. An annular air space is maintained between mid portions of the inner and outer members for insulating purposes, and the members are formed with interengaging radially extending shoulders or shelves which aid in preventing collapsing of the outer member around the air space and also in enabling a plurality of the cups to be stacked without binding.

3,443,715
DOUBLE WALL CONTAINER
Bryant Edwards, Oak Park, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Jan. 18, 1968, Ser. No. 698,879
Int. Cl. B65d 25/18, 21/00, 7/42
U.S. Cl. 220—9 10 Claims



There is disclosed a double wall container or cup comprising inner and outer cup members having side walls with vertical flutes or ribs defining insulating air spaces therebetween. In addition, the flutes or ribs are formed so as to make the cups self-aligning when placed in a stack for storage or dispensing purposes.

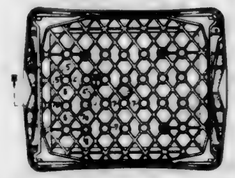
3,443,716
QUICK ATTACHABLE AND DETACHABLE CORE HOLE CLOSING DEVICE AND METHOD OF ATTACHING SAME
Glenn C. Evans, 842 S. 16th St., Fort Dodge, Iowa 50501
Filed May 11, 1967, Ser. No. 637,830
Int. Cl. B65d 39/12
U.S. Cl. 220—24.5 7 Claims



A device and method for closing a core hole wherein resilient material is placed in the opening and compressed in its center by a pair of head members interconnected by an adjustable bolt whereby as said head members are moved towards each other the resilient material is expanded laterally outwardly against the inner peripheral edges of the opening thereby sealing it and forming an annular shoulder between the adjacent peripheral edge of said opening and one of said head members wherein the annular shoulder extends over the peripheral edge of said opening. When the device is removed the head members are spread apart and the resilient material returns to its natural shape and may be easily withdrawn from the opening. One of the head members is larger in diameter than the opening and thus forms a stop when inserting the unit into the opening.

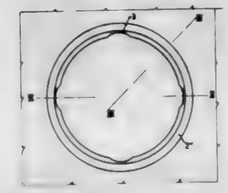
3,443,717
PLASTIC CRATE STRUCTURE WITH LATTICE-WORK BOTTOM
Lars Malte Roland Wettlen, Lomma, and Curt Ingvar Christopherson, Hasslehom, Sweden, assignors to AB Tetra Pak, Lund, Sweden, a Swedish company
Filed May 8, 1967, Ser. No. 636,961
Claims priority, application Sweden, May 9, 1966, 6,340/66
Int. Cl. B65d 7/42; E04c 2/42; E04f 19/10
U.S. Cl. 220—66 3 Claims

A crate structure includes a bottom moulded from plastic material and which is constituted by a lattice made up from a criss-cross network of diagonally extending bars which intersect one another at their mutual crossing points. Stress relieving rings are incorporated into some of the intersections between the bars to prevent deformation of the crate bottom in the event that initial



stresses are developed in the bottom as a result of the moulding operation. The rings are arranged in mutually perpendicular rows along the bottom and are located at every other intersection along each of the diagonally extending bars.

3,443,718
CONTAINER CLOSURE ASSEMBLY
Willem Pieter Post, Burgemeester Arriensweg 7, Diepenveen, Netherlands
Filed Apr. 25, 1966, Ser. No. 544,751
Int. Cl. B65d 41/06
U.S. Cl. 220—40 5 Claims

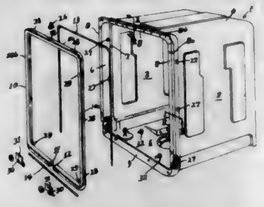


A container having a circular opening in at least one of the walls thereof, an upstanding wall surrounding the circular opening and projecting outwardly with respect to the container wall and a closure member fitting into the upstanding wall surrounding the opening. The closure member is provided with circumferentially spaced radially projecting locking members and axially directed recesses corresponding to the locking members are provided in the upstanding wall for permitting the locking members to pass. Further locking members provided with inwardly inclined working surfaces joining the radial recesses in the upstanding wall and being arranged in the container wall surrounding the upstanding wall.

3,443,719
GASKET FOR FRONT OPENING DISHWASHING MACHINES
Thomas W. Duncan, Connersville, Ind., assignor to Design and Manufacturing Corporation, Connersville, Ind., a corporation of Indiana
Filed Mar. 25, 1968, Ser. No. 715,591
Int. Cl. B21f 53/36
U.S. Cl. 220—46 6 Claims

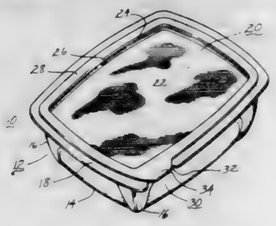
A gasket means for an appliance of the type having a tub or vat with an access opening in the front wall thereof, and closure means for the access opening. The gasket means comprises an elongated resilient member. The resilient member is affixed to the vat along the horizontal top and vertical side portions of the access opening. At the lower corners of the access opening

portions of the ends of the resilient member are bent 90° toward each other and are simultaneously provided with a 90° twist, whereby to form smooth compound curves affording a good seal at the bottom corners of



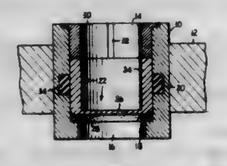
the access opening with the mating edges of the closure means. The remainder of the end portions of the resilient member are affixed to the vat along the bottom edge of the access opening, terminating in facing surfaces.

3,443,720
CONTAINER
John D. Al-Roy, Bloomfield, Conn., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Dec. 20, 1967, Ser. No. 692,035
Int. Cl. B65d *43/10*
U.S. Cl. 220—60 **3 Claims**



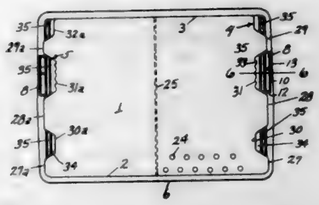
A container body having an opening, a lid for the opening, locking means for releasably securing the lid to the body, and lid removal means associated with the lid and body, including a cutout and a leverage member aligned with the cutout to permit lid separation by pressing against the leverage member through the cutout.

3,443,721
DEVICE FOR PROTECTING VESSELS AGAINST EXCESSIVE FLUID PRESSURE
Daniel Lejeune, Clermont-Ferrand, France, assignor to Compagnie Generale des Etablissements Michelin raison sociale Michelin & Cie, Clermont-Ferrand, Puy-de-Dome, France
Filed Dec. 28, 1967, Ser. No. 694,149
Claims priority, application France, Jan. 2, 1967, 89,731
Int. Cl. B65d *25/02*
U.S. Cl. 220—89 **6 Claims**



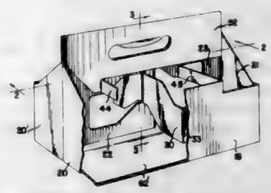
A protective device for protecting against excessive fluid pressure includes a socket, a rupture member mounted in the socket, and an O-ring surrounding the rupture member and forming a seal between the rupture member and the socket to prevent fluid leakage between the rupture member and the socket. The rupture member includes an annular portion engaging the seal and a disk shaped portion sealing the space within the annular portion. The disk shaped portion is formed of a resin-impregnated graphite and is designed to rupture when exposed on opposite sides thereof to a differential fluid pressure exceeding a predetermined value.

3,443,722
PLASTIC CASE
Harold S. Cloyd, Charles A. Bernhardt, and Robert T. Mangold, Erie, Pa., assignors to Nosco Plastics, Incorporated, Erie, Pa., a corporation of Pennsylvania
Filed Jan. 21, 1966, Ser. No. 522,136
Int. Cl. B65d *21/00*
U.S. Cl. 220—97 **7 Claims**



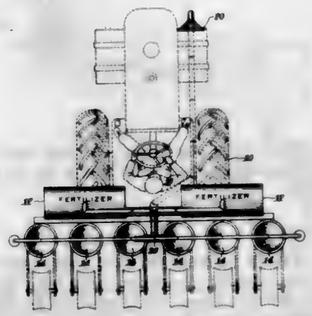
A nest and stack container having ribs outstanding from the sides to support the container on its sides in position for dumping the contents by automatic dumping equipment, outwardly extending convolutions with vertical load carrying walls in direct straight line continuation of said walls to eliminate buckling under load and an inwardly extending surface on each of the end walls in the plane of the rim of the case to support the bottom of an upper container while it is being moved into stacking position.

3,443,723
ARTICLE CARRIER
Edwin L. Arneson, Hackensack, N.J., assignor to Federal Paper Board Company, Inc., Bogota, N.J., a corporation of New York
Filed Aug. 15, 1967, Ser. No. 660,830
Int. Cl. B65d *75/00*
U.S. Cl. 220—113 **5 Claims**



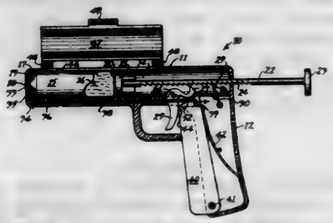
A cellular bottle carrier formed from a single sheet of cut and scored paperboard or similar sheet material which is characterized by a multi-ply rigid suspending and longitudinal partition member sub-dividing its interior into two halves and by sets of cross-partition elements for each half with the center cross-partition element being excised from a panel forming a ply of the longitudinal partition member and being hinged at the free end thereof to a side wall and the remaining cross-partition elements of each set thereof being cut from the upper corners of the side wall and integrally hinged to the longitudinal partition member, thereby enabling the carrier to be produced with sufficient cells for eight bottles.

3,443,724
SEED AND FERTILIZER INDICATOR
James A. Boston, 978 E. 226, Bronx, N.Y. 10451
Filed Jan. 19, 1968, Ser. No. 699,091
Int. Cl. B67d *5/06, 5/16, 5/22*
U.S. Cl. 222—26 **5 Claims**



Apparatus adapted to be secured to a tractor for utilization in spreading seed, fertilizer and the like which provides a continuous visual indication of proper or faulty operation whereby the operator of the tractor always knows how his apparatus is functioning and whether corrective action should be taken.

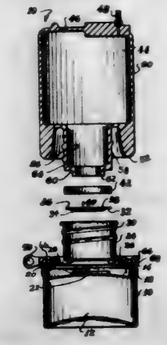
3,443,725
PISTOL DISPENSER FOR FLUENT MATERIAL
Charles L. Lawhorn, 3331 Panorama Drive, Nashville, Tenn. 37218
Filed Oct. 24, 1967, Ser. No. 677,523
Int. Cl. B67d ; B65d *35/54*
U.S. Cl. 222—79 **4 Claims**



A pistol dispenser for fluent material having a reciprocable gate for opening and closing the muzzle end of the barrel, and a gate-operating member mounted in the handle and connected by a link member to the gate for conjunctive reciprocable movement, and means for discharging the fluent material through the muzzle end.

3,443,726
MULTIPLE ELEMENT MIXING AND DISPENSING CONTAINER
Robert E. Muller, Winnetka, Kent B. Godsted, Dolton, and Leon M. Patarini and James F. McDonald, Chicago, Ill., assignors to National Can Corporation, Chicago, Ill., a corporation of Delaware
Filed Aug. 18, 1967, Ser. No. 661,738
Int. Cl. B67b *7/24;* **B67d** *5/60, 5/06*
U.S. Cl. 222—80 **5 Claims**

A multiple element mixing and dispensing container in which a first can unit, which includes a bottle-receiving threaded collar may be filled with contents and sealed, after which a second element, such as a bottle which includes a threaded neck and a separate dispenser spout, is screwed or locked in a fixed position in the collar so as to seal the bottle, and in which a combination can cap and frangible plug is provided which seals the contents of the two containers from contact with each other until container units are further rotated, whereupon a neck extension or nose on the bottle unit fractures the plug,



thereby allowing the contents of the two containers to mix with each other. After the contents are mixed, they are dispensed from the bottle unit, as by squeezing the bottle unit so as to force the liquid through the dispenser valve or spout.

3,443,727
GUIDELINE LAWN MARKER
Walker L. Wellford, Jr., 135 St. Albans Fairway, Memphis, Tenn. 38111
Filed Oct. 24, 1967, Ser. No. 677,598
Int. Cl. B67d *5/64;* **A01c** *5/00*
U.S. Cl. 222—162 **10 Claims**

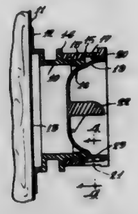


A clamp-on guideline marker accessory for lawn sreaders in the form of a rotatable, hollow cylinder wheel containing lime powder or similar visible marking material in which the rotations of the wheel, as the spreader is advanced along a row, cause a spring plunger valve, located on the periphery of the wheeled container, to be depressed as it contacts the ground so as to dispense the marking contents at spaced intervals. In one embodiment a pivotable connection of the marker to the spreader enables the accessory to be swung over 180° so as to facilitate the maintenance of a constant spacing between rows as the spreader is advanced back and forth over the lawn area.

3,443,728
LIQUID DISPENSING DEVICE
William R. Scholle, Long Beach, Calif., assignor to Scholle Container Corporation, Compton, Calif., a corporation of Illinois
Filed Jan. 22, 1968, Ser. No. 699,464
Int. Cl. B65d *47/20*
U.S. Cl. 222—511 **4 Claims**

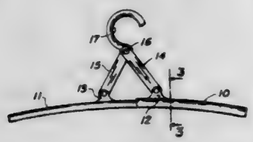
A flexible plastic spigot adapted to be associated with a receptacle for controllably dispensing contained liquid, said spigot comprising a cylindrical tubular wall open at

one end, an internally disposed resiliently flexible concave member secured to the opposed normally outermost end of said wall except at a lateral opening formed in said wall, the neck of said receptacle being adapted to be received within said wall and about said concave member and to leave an annular pocket of substantially V-shaped cross-section between the aforesaid neck, wall and con-



cave member, means on said concave member for permitting it to be yieldably manually flexed out of sealing engagement with said neck and for thereby providing a dispensing opening, and web means secured between said wall and concave member adjacent the opposed defines of said lateral opening whereby to provide dams for said pocket and in combination with said receptacle.

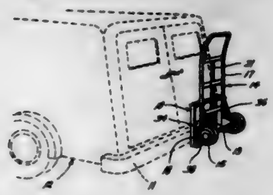
3,443,729
ADJUSTABLE COAT HANGER
William L. Hanneum, 40 Niantic Ave., San Francisco, Calif. 94132
Filed Mar. 17, 1967, Ser. No. 624,096
Int. Cl. A41j 51/10
U.S. Cl. 223—94 3 Claims



A garment hanger and more particularly to an extendible assembly having two telescoping garment shoulder engaging portions, each of which carry an upwardly extending link for connection at a common point with a suitable hanger supporting rod as found in clothes closets and the like. The novelty is considered to reside in the fact that the upwardly extending links are so proportioned and connected to the respective telescoping members in such a manner that the hanger will be centered upon the hanger supporting rod when collapsed or extended so that narrow shouldered and broad shouldered garments can be hung upon the rod in an equalized and effective manner.

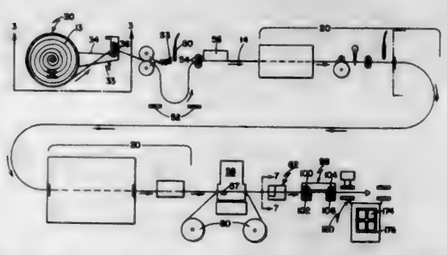
3,443,730
DOLLY HOLDER
Kurt H. Meusel, 210 York, South Houston, Tex. 77587
Filed Sept. 12, 1967, Ser. No. 667,147
Int. Cl. B60r 9/06, 11/06
U.S. Cl. 224—42.03 8 Claims

Apparatus is provided for retaining a dolly in releasable engagement on a delivery truck. The apparatus includes a generally rectangular frame, curved brackets and cradles for receiving the wheels and arms of the dolly, and latching blades coacting with the frame to provide openings through which the arms of the dolly fit and are retained. The latching arms are biased toward the closed position, so that unless an external force is applied, the latches



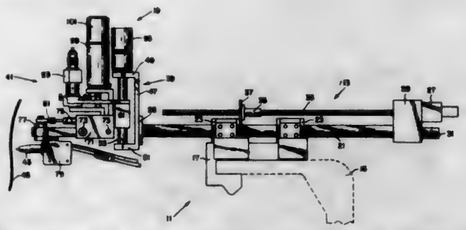
will hold the dolly in the frame. A look may be inserted through the latching arms and frame to lock the dolly in the holder.

3,443,731
STRIP SEGMENTING METHOD
Thomas Alan McGill, Hamilton, and John George Hoffman, Jr., Boston, Mass., assignors to The Gillette Company, Boston, Mass., a corporation of Delaware
Filed Oct. 14, 1966, Ser. No. 586,784
Int. Cl. B26f 3/00
U.S. Cl. 225—1 6 Claims



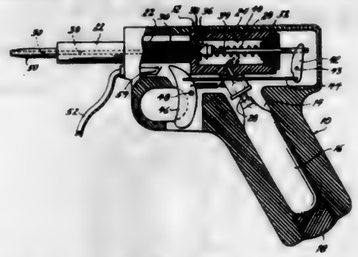
A method of segmenting a continuous ribbon of sharpened razor strip stock. Pairs of tabs are placed on the strip adjacent each other. A first tab and corresponding portion of strip material are held and the adjacent tab and corresponding portion of strip material are moved transversely to the first portion to break the strip material.

3,443,732
APPARATUS FOR WELDING TORCH ANGLE AND SEAM TRACKING CONTROL
William A. Wall, Jr., and Vaughn H. Yost, Huntsville, Ala., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Aug. 7, 1967, Ser. No. 658,956
Int. Cl. B23k 3/00, 9/12
U.S. Cl. 228—7 21 Claims



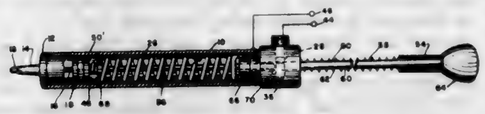
Apparatus for automatically maintaining a welding torch at a desired angle to the work and at a constant welding speed using an electrical computer to make the necessary adjustments caused by the shape of the work surface based on the relationship of the carriage velocity, actuator arm velocity, and welding velocity.

3,443,733
SOLDERING AND DESOLDERING TOOL
Alexander A. Parente, 327 Calvert Road, Merion Station, Pa. 19066
Filed Jan. 11, 1967, Ser. No. 608,659
Int. Cl. B23k 3/04
U.S. Cl. 228—20 1 Claim



An electric iron for soldering and desoldering, especially designed for delicate work where the application of high heat is critical.

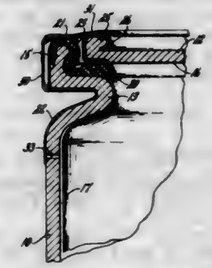
3,443,734
SOLDER-DESOLDER COMBINATION IMPLEMENT
William S. Fortune, 14250 Dearborn Ave., Panorama City, Calif. 91402
Filed Oct. 24, 1967, Ser. No. 677,638
Int. Cl. B23k 3/06
U.S. Cl. 228—52 10 Claims



The specification discloses a desoldering tool having a hollow, tubular cylindrical configuration with a spring loaded piston housed therewithin. The forward end of the cylindrical body is provided with a small diameter hollow tip; and a cocking plunger protrudes from the opposite, or rear, end. A tip self-cleaning rod extension member carried by the piston extends into and slightly beyond the forward end of the hollow tip during the cocking stroke and is carried rearwardly by the piston during its flyback or vacuum stroke. The rod extension member comprises a concentric pair of conductors joined at their extremity in a resistance junction. When the conductors are energized, the junction substantially instantly reaches a solder fusing temperature and may be used as a solder or desoldering tip; when the latter, a vacuum stroke is achieved when the desired degree of solder melting has been accomplished, and the molten solder is drawn into the internal volume of the implement through its hollow small diameter forward tip.

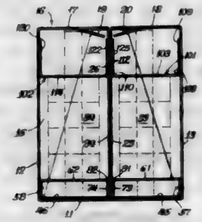
3,443,735
END CONSTRUCTION FOR SHIPPING CONTAINERS
Antonie Herman Meijers, Luelsdorf, near Sieburg, Germany, assignor to Inland Steel Company, Chicago, Ill., a corporation of Delaware
Filed July 22, 1966, Ser. No. 567,296
Int. Cl. B65d 5/56, 25/14, 5/40, 5/62, 5/58, 5/60
U.S. Cl. 229—14 11 Claims

A shipping container with an internal liner of liquid tight flexible material and having an end construction adapted to be reliably closed and sealed by an end cover even when the liner is slightly wrinkled or folded in the chime regions of the container. The end construction of the container includes an internal circumferential ledge formed near the mouth of the cylindrical body of the container, and a gasket is clamped over the ledge and the end of the mouth with the liner interposed between the



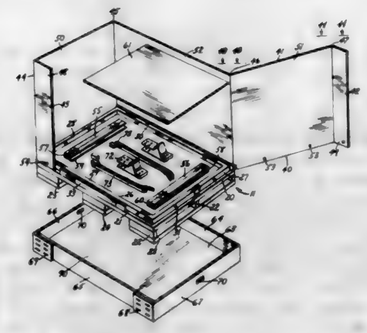
gasket and body and with both the gasket and the liner extending above and over the end of the body.

3,443,736
CARRIER AND CARRYING CASE FOR ROLLS OF ADHESIVE TAPE
Fred C. Steinbock, Chicago, Ill., assignor to The Kendall Company, Boston, Mass., a corporation of Massachusetts
Filed June 14, 1967, Ser. No. 645,953
Int. Cl. B65d 5/48, 81/00, 85/00, 85/62, 5/46
U.S. Cl. 229—15 3 Claims



A combination container and carrier for shipment and storage of spindle-supported spools of adhesive tape which is convertible to a hand-carrying case and from which the carrier with the tapes may be removed to provide a carryable dispensing rack of rolls of the tape.

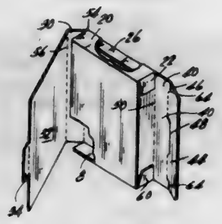
3,443,737
COLLAPSIBLE REUSABLE BULK SHIPPING CONTAINER
Julius B. Kupersmit, 299 W. 12th St., New York, N.Y. 10014
Filed Oct. 30, 1967, Ser. No. 678,785
Int. Cl. B65d 13/00, 5/00, 5/36
U.S. Cl. 229—23 3 Claims



A collapsible reusable bulk shipping container of light weight type, particularly useful for air freight shipments, including a relatively rigid pallet element, a collapsible

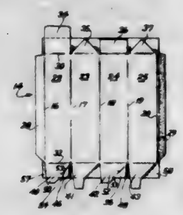
side wall element permanently connected along one edge thereof to said pallet element, and selectively interconnectable along the ramaining edges thereof, and a lid element selectively engageable with an erected wall element, said lid element forming storage means for the wall element and pallet element when the device is in collapsed condition.

3,443,738
BOX FOR PHONOGRAPHIC TAPE RECORDINGS
Kevork Devejian, Flushing, N.Y., assignor to George Alexander Printing Co., Inc., Flushing, N.Y., a Corporation of New York
Filed Nov. 28, 1967, Ser. No. 686,087
Int. Cl. B65d *5/22, 45/00*
U.S. Cl. 229—33 2 Claims



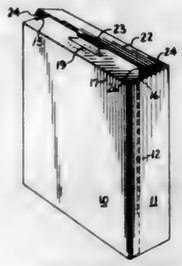
A novel box particularly useful as a container for phonographic tape and the like characterized by having an end closure member which overlies a side of the box and completes the box closure by insertion of a tab into a tab receiving slot on the opposite end of the box.

3,443,739
CARTONS HAVING SELF-FORMING, SELF-LEVELING BOTTOMS
Leonard Adams, Jr., Louisville, Ky., assignor to The Finn Industries, Inc., Chicago, Ill., a corporation of Delaware
Filed Mar. 16, 1967, Ser. No. 628,798
Int. Cl. B65d *5/10, 65/00, 75/00*
U.S. Cl. 229—39 8 Claims



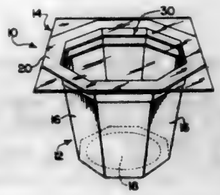
A flat-foldable carton having a simulated pre-wrap thereon and a self-forming, self-leveling bottom. The bottom closure flaps are formed with tug tabs which can be folded and sandwiched between certain ones of the bottom closure flaps and affixed to these bottom closure flaps in a fashion such as to provide back (board) to face anchor points, as opposed to face to face anchor points, between them. The simulated pre-wrap is made discontinuous along the portion thereof adjacent the bottom closure flaps, so as to permit the tug tabs to be folded in the described manner. Upon erecting the carton from a flat-folded position, the bottom is automatically formed and leveled.

3,443,740
CARTON WITH INTEGRAL LOCK TAB AND SLOT CLOSURES
James C. McKinney, Taylors, S.C., assignor to Kellogg Company, Battle Creek, Mich., a corporation of Delaware
Continuation of application Ser. No. 469,752, July 6, 1965. This application May 26, 1966, Ser. No. 553,005
Int. Cl. B65d *5/10*
U.S. Cl. 229—39 8 Claims



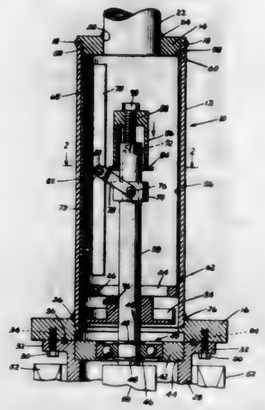
A carton comprising side walls, end walls, and bottom and top closure flaps hinged to said walls, said top closure flaps comprising a pair of dust flaps hinged to said end walls and a pair of elongated upper flaps hinged to said side walls, a first one of said elongated flaps being adapted to overlie the other of said elongated flaps and including an opposed pair of end lock tabs hinged thereto for reception in complementary slits, said slits each comprising a first portion formed in said dust flaps closely adjacent and parallel to their hinge lines of a length substantially equal to that of the hinge line of said tab, a free end portion of each lock tab being shaped to extend beyond said tab hinge line and adapted to be received in a second slit portion extending from and inclined to said parallel slit portion and to underlie said dust flap at an unslit portion thereof, the total length of each of said straight and inclined slit portions being substantially equal to the total length of the hinged and free end portions of each of said lock tabs.

3,443,741
TWO-PIECE UNIT PACKAGE
William D. Stockdale, Arlington Heights, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Continuation-in-part of application Ser. No. 621,864, Mar. 9, 1967. This application Nov. 9, 1967, Ser. No. 681,625
Int. Cl. B65d *17/00, 5/64, 43/02*
U.S. Cl. 229—51 10 Claims



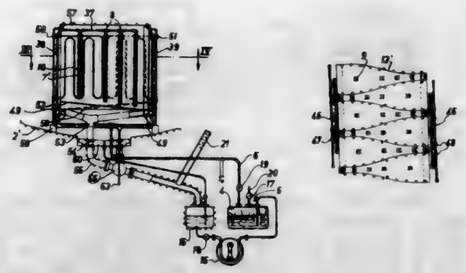
A two-piece unit package including a container body having a radially outwardly directed flange adjacent its open upper end to which a flexible lid member is secured, said container flange and lid member each having a polygonal exterior margin which are related to each other in such a manner as to provide a plurality of tear tabs from the lid member which, along with the polygonal exterior margin of the flange, facilitates removal of the lid member from the container body.

3,443,742
PUMPING DEVICE
Robert L. Hirsch, Fort Wayne, Ind., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed June 9, 1967, Ser. No. 644,896
Int. Cl. F04b *37/02*
U.S. Cl. 230—69 7 Claims



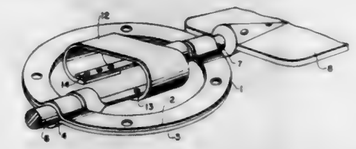
A pumping device comprising a chamber from which gases are to be removed, a collector surface disposed in said chamber for receiving gases, the gases being chemically combined with said surface to provide a reaction product thereon, and means for removing the reaction product, thereby permitting additional reaction product to form. In a preferred embodiment of the present invention, a wire-like brush is utilized to remove the reaction product.

3,443,743
VACUUM PUMPS
Pierre Pegon, Paris, France, assignor to Societe Clover, Villejuif, Val-de-Marne, France
Filed Nov. 15, 1966, Ser. No. 594,563
Int. Cl. F04f *9/02*
U.S. Cl. 230—101 2 Claims



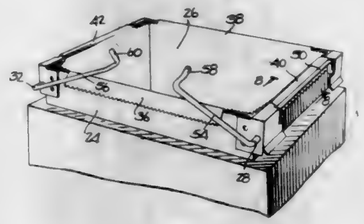
A vacuum pump which uses the pumping fluid from an outside boiler to drive molecules of gas from a chamber, compressing them by successive stages with the fluid circulating through a piping system having orifices known as ejectors spaced from cooled condensation plates within said chamber with independent heating adjustment in the parts of the piping system.

3,443,744
FAN APPARATUS FOR COOLING ENGINE
Uichiro Kobashi, Kariya-shi, Japan, assignor to Aisin Seiki Kabushiki Kaisha
Filed Apr. 21, 1967, Ser. No. 632,607
Claims priority, application Japan, Apr. 21, 1966, 41/36,993
Int. Cl. F04d *25/14*; F01p *7/02*
U.S. Cl. 230—270 5 Claims



The disclosed fan apparatus for cooling an engine has a supporting boss, arms which are supported through holes formed at radially opposite sides of the supporting boss, fan blades which are secured to the outer ends of the arms, stoppers of the arms for preventing respective arms from separating outwards, fittings formed at one portion of the stoppers, and a spring bimetal secured to the fittings.

3,443,745
REFUSE SACK HOLDER
Gunther K. E. Kleeberg, Lexington, Mass., assignor to St. Regis Paper Company, New York, N.Y., a corporation of New York
Filed Oct. 9, 1967, Ser. No. 673,800
Int. Cl. B65b *67/12*
U.S. Cl. 232—43.2 15 Claims

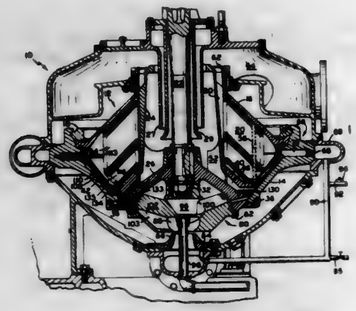


A waste container including a cabinet having an upright frame for receiving the mouth of a bag, clamping means mounted on said frame for engaging the flaps of said bag to hold said bag upright. A cover is removably mounted on said cabinet without the need of tools.

3,443,746
COUNTER-CURRENT WASH FOR CENTRIFUGAL SEPARATOR
Ralph H. Halbach, Westport, Conn., assignor to Dorr-Oliver Incorporated, Stamford, Conn., a corporation of Delaware
Filed Jan. 19, 1967, Ser. No. 610,418
Int. Cl. B04b *15/12*
U.S. Cl. 233—15 16 Claims

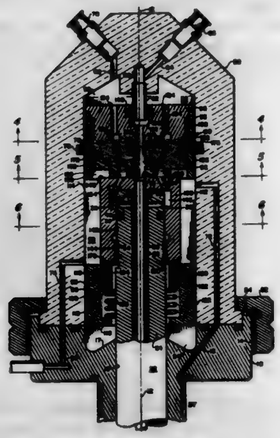
The present invention relates to a centrifugal separator having a wash zone wherein a plurality of wash

liquids counter-currently wash the underflow before it is discharged from the rotor. Each of the wash liquids is



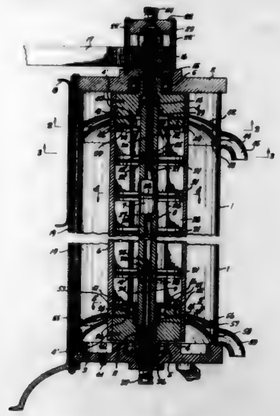
individually channeled to the wash zone through its own system of conduits and individually discharged into the wash zone.

3,443,747
FLUID COUPLING FOR CONTINUOUS FLOW CENTRIFUGE
Kenneth E. Jacobson, Fremont, and John T. Taylor, Santa Clara, Calif., assignors to Beckman Instruments, Inc., a corporation of California
Filed Oct. 14, 1966, Ser. No. 586,838
Int. Cl. B04b 9/06
U.S. Cl. 233—22 17 Claims



A sealing cartridge for use with a continuous flow centrifuge comprising a rotary sealing element tightly secured to a centrifuge rotor shaft and sandwiched between a pair of nonrotatable sealing elements preloaded into sealing engagement with the rotating sealing element by a spring. The sealing elements being contained within a sleeve-cap combination forming a housing which is in turn disposed inside a suitable stationary enclosure in such a manner that there is provided sufficient clearance between the sealing elements, the housing, and the inside wall of the stationary enclosure to accommodate axial, lateral, and tilting movements of the rotor shaft and seal cartridge without leakage.

3,443,748
DYNAMIC MIXER AND CENTRIFUGE COMBINATION FOR SOLVENT EXTRACTION
Robert W. Hooper, 11855 SE. 284th St., Kent, Wash. 98031
Filed Oct. 24, 1965, Ser. No. 504,754
Int. Cl. B04b 1/00, 3/00
U.S. Cl. 233—28 10 Claims



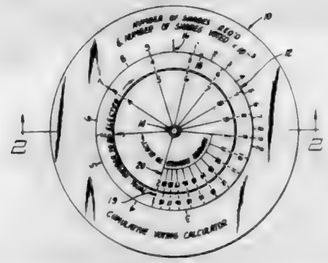
Through passages in opposite ends of a shaft an extracting solvent and a solution are supplied to the interior of a centrifuge barrel. Impeller disks spaced along the shaft are located between baffle sections including a plurality of vanes projecting edgewise inwardly from the barrel. The freely rotatable barrel is rotated more slowly than the power driven shaft by the fluid coupling action of fluid between the impeller disks and the baffle section vanes. During such rotation the solvent and the solution flow in opposite directions to discharge, at opposite ends of the barrel, solvate and raffinate which have been separated by centrifugal force generated by rotation of the barrel.

3,443,749
SLIDE RULE
Henry Cimetta, 323 E. 66th St., New York, N.Y. 10021
Filed Nov. 20, 1967, Ser. No. 684,107
Int. Cl. G06g 1/06
U.S. Cl. 235—70 5 Claims



A slide rule having two spaced parallel slide elements rigidly connected by a connecting member and slidable in two parallel channels in a slide rule body. The slide rule is particularly suitable for calculating photographic exposures indicated by an exposure meter, in which case only one connecting member is provided, connecting the slider elements at the very end of the slide rule, past the main body of the rule, the upper surface of the connecting member being flush with the upper surface of the remainder of the slide rule.

3,443,750
CUMULATIVE VOTING INDICATOR
John J. Slavin, 4688 Haddington Lane, Bloomfield Hills, Mich. 48013, and James P. Stanley, 1033½ Cadieux Road, Grosse Pointe, Mich. 48236
Filed Apr. 25, 1966, Ser. No. 544,879
Int. Cl. G06c 27/00
U.S. Cl. 235—78 3 Claims

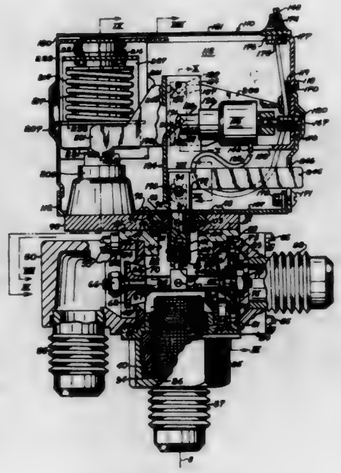


A desk calculator having a pair of superimposed scale discs, one disc being calibrated in geometric progression to indicate the number of shares of a corporation to be voted, a second scale being divided into segments, each segment representing a zone establishing the upper and lower limiting numbers of shares, the total number of directors to be elected to the board of directors of the corporation, and the number of directors desired to be elected whereby either the minimum number of shares needed to elect a given number of directors of a corporation or the number of directors any given stockholder or group of stockholders can elect with the given number of shares the stockholder or group of stockholders controls may be determined.

3,443,751
CONTROL VALVE FOR HEATING AND COOLING SYSTEMS
Estel C. Raney, Fort Lauderdale, Fla., assignor to Ranco Incorporated, Franklin, Ohio, a corporation of Ohio
Filed Mar. 31, 1967, Ser. No. 627,458
Int. Cl. G05d 23/12; F28f 27/00
U.S. Cl. 236—1 8 Claims

A heat exchanger **11** of a heating and cooling system is shown through which heated and cooled liquid is circulated to temper the air in a room. The flow of liquid is controlled by a thermostatic valve **16** comprised of a valve body having a chamber therein, provided with an inlet passage **23** and first and second outlet passages **48**, **83**, the inlet passage being connected with a liquid source, the first outlet passage being connected with the heat exchanger and the second outlet passage being connected with said source of liquid for bypassing the liquid about the exchanger. First and second valve seats **48**, **61** are provided in the respective outlet passages and are closable by two valve closure members **62**, **63** downstream of the respective valve seats. The closure members are moved to and from their respective seats by a stem **64** interconnecting the valve members and the valves are spaced apart to cause one valve member to move from its seat as the other valve member is moved toward its seat and vice versa, so that more or less liquid can be directed to the exchanger while the remainder of the liquid bypasses the exchanger. A movable wall means **73** extends transversely of the outlet passage **83** downstream from the valve seat **61** and is connected with the valve closure members whereby fluid pressure differential on opposite sides of the wall urges the wall in a direction to tend to close the valve member **62** on valve seat **48**. The wall **73** has openings **80** therethrough for passing liquid flowing through seat **61** to bypass the exchanger. This arrangement substantially balances the pressures on the valve members **62**, **63** so that they may be shifted with but slight force.

The valve stem **64** is shifted by a hydraulic thermostatic element **115** through levers **134**, **91**. The element **115** comprises a chamber **124** having a movable wall **125** and an actuating member **132** moved by the wall. The chamber contains liquid adapted to change in volume and move the wall and actuating member in accordance with changes in the liquid volume contained in a bulb **17** and connected with the chamber **124** by a tube **135**. The volume of the liquid in chamber **124** can be adjustably

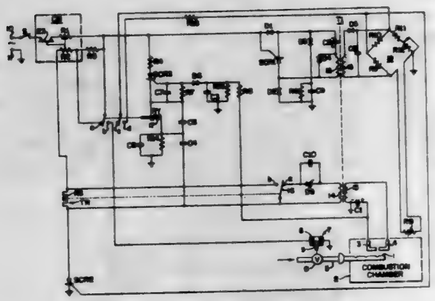


varied to change the temperature at which the member **132** is moved by an adjusting device **20** comprised of a second liquid chamber **144** having a movable wall **145** and a member **157** which is adapted to shift the second wall. The chamber **144** is connected with the chamber **124** by a flexible tube **142** and the chamber and tube are filled with a common liquid. The member **157** is adapted to be slidingly guided in a sleeve **151** for movement against the wall **145**. The member **157** is pivotally attached to a manually positionable lever **284** on a frame **141** and the chamber **144** is adapted to be detachably supported on a bracket **163** by sliding a part thereof into a slot in the bracket whereby the chamber can be readily assembled with or removed from the operating member **157**.

3,443,752
CONTROL SYSTEM FOR GAS-FIRED HEATING APPARATUS
Lyman H. Walbridge, Ashland, Mass., assignor to Fenwal Incorporated, Ashland, Mass., a corporation of Massachusetts
Filed July 29, 1966, Ser. No. 568,944
Int. Cl. F23n 1/00, 5/02; G05d 23/19
U.S. Cl. 236—15 13 Claims

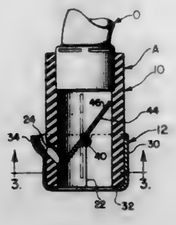
The invention relates to apparatus for gas ignition which includes a pair of electrodes to provide an ignition spark and a gas valve operated by a solenoid which is opened when an appropriate electrical signal is applied to it. Sparks are produced at the electrodes by supplying high voltage pulses to them and the gas valve is held open provided flame is present. The pulses which supply the electrodes are also supplied to a temperature-sensitive

circuit and the output signal from this circuit, which is typically a bridge circuit, is used to initially operate the gas valve. The uses of pulses as opposed to continuous



energization of the temperature measuring circuit reduces self heating and temperature offset, while yet providing a substantial output signal.

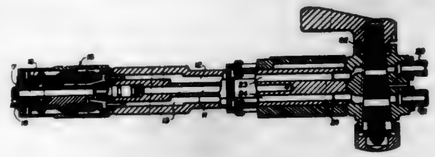
3,443,753
FOUNTAIN ATTACHMENT FOR FAUCETS
Thomas M. McDonnell, Oak Park, Ill., assignor of one-half to John Farina, Chicago, Ill.
Filed Dec. 14, 1967, Ser. No. 690,653
Int. Cl. E03b *9/20*; E03c *1/00*
U.S. Cl. 239—27 3 Claims



A removable attachment for converting an ordinary water faucet into a drinking fountain comprising a resilient tubular body having opposed valve shaft openings and a dispensing hole extending laterally therethrough, a deflector valve mounted on a shaft having ends received in said openings and a handle on the outside of said body for deflecting water from the bore of the body through the dispensing hole, and a non-resilient cap over the lower free end of the body having recesses to journal the ends of the shaft and a spout spaced from but aligned with the body dispensing hole for directing water deflected through the hole in an upward direction.

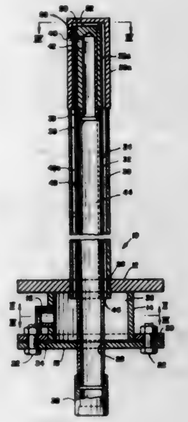
3,443,754
CONSTRUCTION FOR A POWDER-TYPE FLAME SPRAY GUN
Herbert Charlop, Brooklyn, N.Y., assignor to Metco Inc., Westbury, N.Y., a corporation of New Jersey
Filed Nov. 14, 1966, Ser. No. 594,095
Int. Cl. B05b *7/20*
U.S. Cl. 239—85 6 Claims

Powder-type flame spray gun having an arrangement on the gun body for optionally connecting one of the fuel and combustion-supporting gas conduits in flow communication with the carrier gas conduit to use the gas passed through the conduit as the carrier gas, these means being in the form of lateral extensions of the conduits through



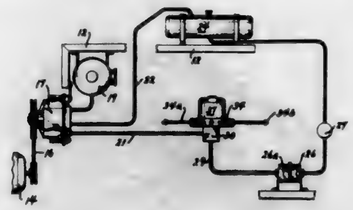
the side of the gun body, and exchangeable valve plates for optionally connecting the desired lateral extensions of the conduits.

3,443,755
JET STRUCTURES FOR HIGH-TEMPERATURE ENVIRONMENTS
Francis H. Bricmont, Mount Lebanon, Pa., assignor to Bloom Engineering Company, Inc., Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 15, 1966, Ser. No. 542,946
Int. Cl. B05b *15/00*
U.S. Cl. 239—132.5 5 Claims



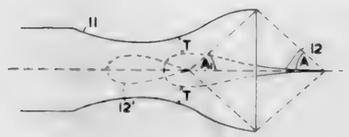
There is disclosed a jet structure for use in a high-temperature environment, said structure comprising a pair of spaced elongated interfitting jet tubes, means for spacedly supporting said tubes adjacent their respective ends, at least the other end portions of said tubes being fabricated from a temperature resistant material for insertion into a high-temperature environment, said other end portions having a pair of aligned jet apertures formed respectively therein, and means for introducing a jet fluid into the inner one of said jet tubes for ejection through said apertures. In certain applications, the insertable end portions of the jet tubes are fabricated from relatively heavier walled structural materials. In other applications flow directing means and/or stabilizing means are extending longitudinally through the annular space between the tubes for directing coolant medium through the annular space and in contact with substantially all of the adjacent surfaces of the jet tubes.

3,443,756
LOW VOLUME SPRAY SYSTEM HAVING NOZZLE ORIFICE CONFIGURATION FOR PRODUCING EQUAL SIZE DROPLETS
Friedrich J. Katz, Gene F. Pfeiffer, and Charles E. Sorenson, Evansville, Ind., assignors to Hahn, Inc., Evansville, Ind., a corporation of Indiana
Filed June 15, 1966, Ser. No. 557,788
Int. Cl. B05b *7/04, 3/08*
U.S. Cl. 239—214.25 3 Claims



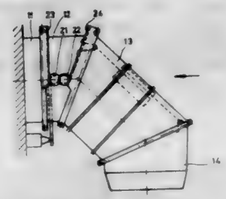
A sprayer system and nozzle characterized by a combination of elements which permit the use of small volumes of chemical concentrate dispensed in aerosol or mist-like form through a unique orifice configuration in each sprayer nozzle and having particular adaptability for use on a conventional self-powered vehicle, such as a high clearance sprayer.

3,443,757
SUPERSONIC FLUID FLOW EXHAUST NOZZLES
Lionel Henry Townend, Farnham, Surrey, England, assignor to Minister of Aviation in Her Britannic Majesty's Government of the United Kingdom of Great Britain and Northern Ireland, London, England
Filed Oct. 14, 1966, Ser. No. 586,798
Int. Cl. B64d *33/04, 33/06*; F02k *1/26*
U.S. Cl. 239—265.13 17 Claims



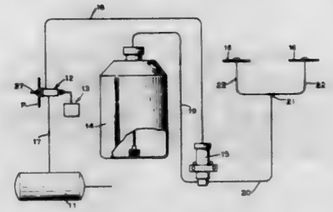
1. An exhaust nozzle of the convergent-divergent duct type for fluid flow at supersonic exhaust speeds comprising,
a convergent inlet region,
a divergent exhaust region,
a throat region intermediate said convergent and divergent regions,
said nozzle having a plurality of lobes which extend longitudinally to the exit region of the nozzle from the region of the throat and being axisymmetric forward of said lobes;
the area of the lobed exit when measured as a projection on a plane normal to the axis of symmetry being ideally the same as the theoretical exit area of a supersonic flow exhaust nozzle having the required exit mass flow, both nozzles having the same exit Mach number and velocity, and the generation of the inner surfaces of the lobes being based on supersonic flow theory.

3,443,758
SWIVELABLE JET NOZZLE, INTENDED ESPECIALLY FOR VERTICAL TAKE-OFF AND SHORT TAKE-OFF PLANES
Gerhard Kopp and Gero Otto Madelung, Munich, Germany, assignors to Entwicklungsring Sud G.m.b.H., Munich, Germany, a corporation of Germany
Filed Oct. 13, 1966, Ser. No. 586,497
Claims priority, application Germany, Oct. 29, 1965, E 30,384; Nov. 16, 1965, E 30,478
Int. Cl. B64c *15/08*; F02k *1/24*; F16l *27/08*
U.S. Cl. 239—265.35 10 Claims



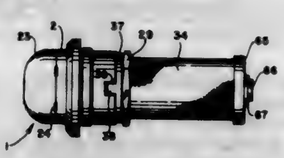
The disclosure relates to a swivelable exhaust nozzle for jet airplanes having a plurality of tubular sections. The first section is secured to the airplane propulsion unit and each succeeding section is rotatable about its axis and rotatably connected to its adjacent sections in such a way that the axes of all sections remains in a single plane of symmetry at all times.

3,443,759
WINDSHIELD WASHING DEVICE
Frank Hanselmann, Seestrasse, Stafa, Switzerland
Filed Sept. 1, 1967, Ser. No. 665,125
Claims priority, application Germany, Dec. 5, 1966, H 60,420
Int. Cl. B60s *1/46*
U.S. Cl. 239—284 9 Claims



A windshield washing device including a pneumatically activated pump means for delivering washing fluid; the pump means being operated from a source of gas of limited volume and under pressure, by means of a control valve.

3,443,760
FAIL-SAFE FUEL INJECTION NOZZLE
Harold C. Simmons, Richmond Heights, Ohio, assignor to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Apr. 26, 1967, Ser. No. 633,794
Int. Cl. B05b *7/12, 7/10, 1/34*
U.S. Cl. 239—410 13 Claims



A fuel injection nozzle having primary and secondary flow passages leading to primary and secondary discharge

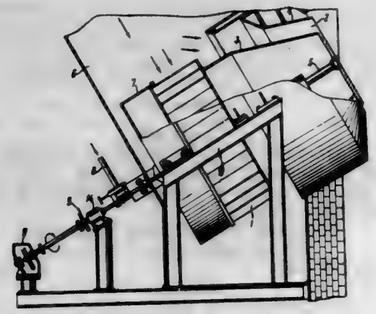
orifices. A pressure responsive valve controls the flow through the secondary discharge orifice in accordance with the inlet pressure except when the valve stem or other such valve part fails and the valve engages a shut-off plate in the secondary flow passage closing off an opening therethrough which precludes further secondary flow.

3,443,761
BURNER AND HYDROCARBON INJECTION ASSEMBLY FOR CARBON BLACK REACTORS
Wouter F. de Groot, Hoogvliet, Netherlands, assignor to Continental Carbon Company, Houston, Tex., a corporation of Delaware
Filed Dec. 15, 1966, Ser. No. 602,002
Int. Cl. B05b 7/06
U.S. Cl. 239—424 4 Claims



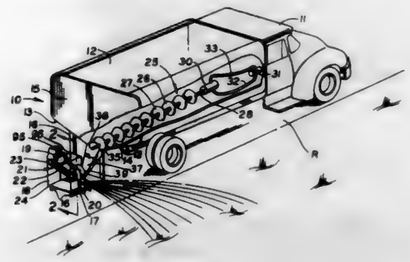
A combination of four concentric and radially spaced tubes provides for the maintenance of an axial flame in a carbon black reactor and for the introduction of fluid hydrocarbon feedstock to substantially the center of the flame; the arrangement of tubes being such that the axial air conduit and the feed stock conduit may be concurrently adjusted or replaced without interference with the combustion air and gas conduits and accordingly, the reactor permitted to operate under combustion or heat load until the axial air conduit and the gas conduit are again in operation.

3,443,762
BURNER FOR LIQUID FUEL
Filipp Alexandrovich Lipinsky, Ulitsa Kalinina, 59, kv. 5, Ufa, U.S.S.R.
Filed Jan. 30, 1967, Ser. No. 612,650
Int. Cl. B05b 7/04, 7/10
U.S. Cl. 239—424.5 5 Claims



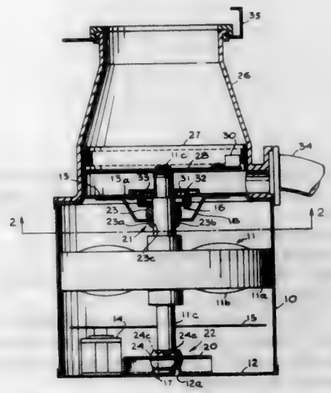
A burner for liquid fuel having a nozzle for axial delivery of atomized fuel and a swirler device mounted in proximity to the nozzle for delivery of primary combustion air. An annular cone-shaped channel encircles the outlet of the swirler device for peripheral delivery of secondary air and the cone-shaped channel includes a movable wall which is adjustable either concurrently with or relative to a movable regulating throttle which controls the amount of air admitted to the swirler device.

3,443,763
GRANULAR DISTRIBUTOR
Dale E. Wolford, Ashland, Ohio, assignor to The F. E. Myers & Bro. Co., Ashland, Ohio, a corporation of Ohio
Filed Oct. 23, 1965, Ser. No. 502,836
Int. Cl. E01c 19/20; F04d 29/24
U.S. Cl. 239—666 12 Claims



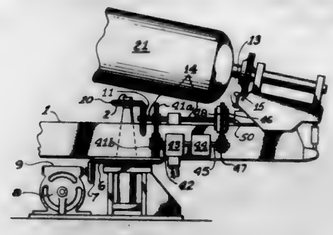
A granular distributor for directively spreading material along a roadside. The apparatus utilizes a conveyor-like system to feed the material to a dispensing head which distributes the material at a rate which is controlled independently of the feed rate. A selectively positionable deflector is mounted in the path of the material as it is discharged out of the orifice of the dispensing head so that a uniform distribution of the material is obtained over the entire swath.

3,443,764
FOOD-WASTE DISPOSAL APPARATUS
Ray C. Wetzel, 15123 Boca Chica Drive, La Mirada, Calif. 90638
Filed June 6, 1966, Ser. No. 555,605
Int. Cl. B02c 18/42
U.S. Cl. 241—46 4 Claims



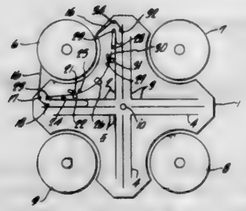
This invention provides improvements in garbage disposers in the form of adjustable bearings and water-sealing apparatus. The bearings materially simplify the overall construction and assembly of these disposers, and the water-sealing apparatus is very effective in protecting the motor and other elements that could be damaged or adversely affected by the water used in the garbage disposing process.

3,443,765
FILAMENT WINDING MACHINE
George A. Jube, Courbevoie, and Max R. Popot, Montrouge, France, assignors to Sud-Aviation, Societe Nationale de Constructions Aeronautiques, Paris, France, a corporation of France
Filed June 21, 1965, Ser. No. 465,594
Int. Cl. B65h 54/10
U.S. Cl. 242—2 4 Claims



A device for forming structural bodies by means of threads or filaments wound on a mandrel, the mandrel being rotatable on a first vertical axis and on a second oblique axis, each axis being rotatable at different speeds controlled by differentially changing the speed of rotation between said first and second axis to obtain the desired warp of threads being fed onto said mandrel from a fixed vertical thread guide erected at a point of coincidence of said axes.

3,443,766
MULTIPLE STATION TAPE HANDLING APPARATUS
Harry F. Rayfield, Bradbury, and Magne Jarle Kjos, Duarte, Calif., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Jan. 19, 1967, Ser. No. 610,257
Int. Cl. G11b 15/44
U.S. Cl. 242—55.12 20 Claims



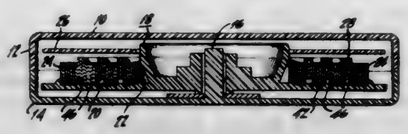
Improvements in multiple station tape handling apparatus, particularly of the type involving coaxially arranged reels. A criterion is involved for locating and orienting cylindrical tape guiding elements on a work surface so as to guide tape from reels canted at an angle with respect to the work surface without exerting axial forces on the tape. In addition, a supporting structure is shock-mounted to a fixed frame and comprises a rigid, tubular hub from which rigid beams extend radially. Reel drive assemblies are mounted on the beams and a deck plate, along which the tape is transported, is mounted on the end of the hub. The drive assembly comprises coaxially arranged shafts that are supported by a novel bearing arrangement.

3,443,767
ENDLESS LOOP TAPE CARTRIDGE
Stephen W. Liddle and Clarence E. Bush, Indianapolis, Ind., assignors to Radio Corporation of America, a corporation of Delaware
Filed Jan. 20, 1967, Ser. No. 610,668
Int. Cl. B65h 17/48
U.S. Cl. 242—55.19 2 Claims



A thin annular wafer formed of a flexible material is interference fitted on the hub portion of a reel of tape disposed in an endless loop tape cartridge to keep the innermost tape convolutions adjacent the hub portion from rising above the tape roll and jamming the cartridge. The wafer is shaped to provide a tape egress opening and guide at a predetermined position relative to the hub portion such that during operation of the cartridge, the wafer is caused to flex and provide more clearance for the tape to escape at the egress point.

3,443,768
ENDLESS TAPE CARTRIDGE
Stephen W. Liddle and Charles G. Hawkins, Indianapolis, Ind., assignors to Radio Corporation of America, a corporation of Delaware
Filed Aug. 12, 1966, Ser. No. 572,136
Int. Cl. B65h 75/36
U.S. Cl. 242—55.19 2 Claims

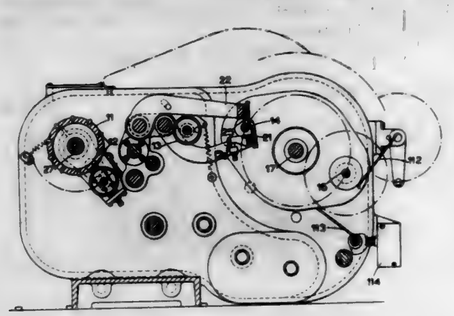


A magnetic tape cartridge in which an endless coil of tape is supported on a spool having a central hub and integral, coil supporting flange provided with concentric grooves formed in a plurality of radiating rib members which serve to distribute the weight of the tape when the cartridge is used in an inclined position.

3,443,769
REWINDING MACHINES
Edward A. Breacker, Kensington, London, and Edouard R. Armelin, Ealing, London, England, assignors to Societe d'Etudes de Machines Speciales, Paris, France, a French company
Filed Oct. 13, 1966, Ser. No. 586,504
Claims priority, application Great Britain, Oct. 13, 1965, 43,397/65
Int. Cl. B65h 19/20
U.S. Cl. 242—56 7 Claims

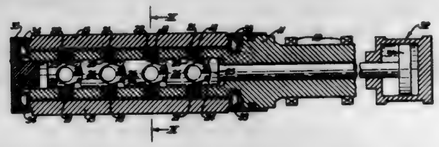
A machine for winding a predetermined length of web onto a mandrel comprising means adapted to receive and rotatably drive a mandrel in a position where the free end of said web is attached to that mandrel and at least part of said length of web wound thereon, means engageable

with said web when it is being wound and arranged to indicate when a predetermined length of web has been



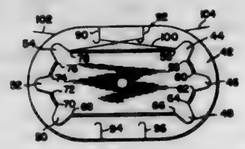
wound, and means initiated by said web length indicating means to cut off said predetermined length of web when wound.

3,443,770
EXPANDABLE MANDREL
Jeremiah Wagner O'Brien, Pittsburgh, Pa., assignor to United Engineering and Foundry Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 13, 1967, Ser. No. 682,190
Claims priority, application Great Britain, Nov. 17, 1966, 51,622/66
Int. Cl. B65h 75/18
U.S. Cl. 242—72.1 3 Claims



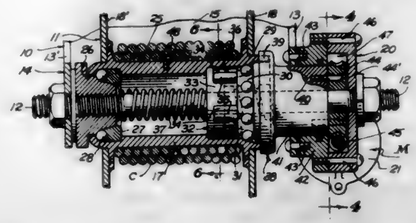
A collapsible mandrel comprising a central rotatable arbor around which are mounted a number of segments movable in a radial direction. Radial displaceable members are received in bores in the arbor and have first wedge surfaces. An actuating rod passes through the center of the arbor and has wedge surfaces to engage the first wedge surfaces to cause expansion of the segments.

3,443,771
SUTURE WINDING CARD
James E. Doty, Broomall, Pa., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania
Filed Sept. 18, 1967, Ser. No. 668,426
Int. Cl. B65h 25/36; A61l 17/02
U.S. Cl. 242—85.1 2 Claims



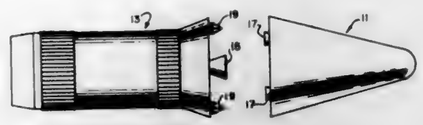
Entanglement and kinking of a suture is prevented by providing a suture winding card having support points for the suture lying at the corners of a rectangle having opposite ends each of from 0.4" to 3" and opposite sides each of 2 to 3 times the length of an end of the rectangle. Adjacent each end and spaced outwardly therefrom, a plurality of additional suture support points guide the suture substantially on an arc having a radius of from ½ to ⅗ the length of an end of the rectangle.

3,443,772
WATER SKI TOWLINE REEL AND DRIVE MEANS THEREFOR
Daniel Shafter Prosser, 1250 Loma Vista, Hollister, Calif. 95023
Filed Oct. 18, 1967, Ser. No. 676,141
Int. Cl. B65h 75/40, 17/46; F16d 41/24
U.S. Cl. 242—86.5 5 Claims



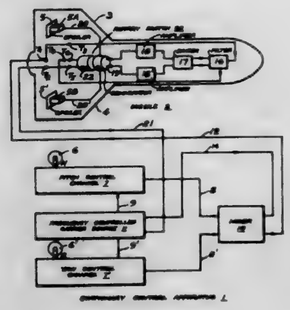
A reel for winding in and paying out a water skiing towline from the stern transom of a boat, comprising a ball bearing journaled hub for the reel and a clutch and brake connection between the hub and a gear drive to a reversible motor.

3,443,773
DOCKING STRUCTURE FOR SPACECRAFT
Josef Franz Blumrich, 2721 Briarwood Drive SE., and Rondal G. Crawford, 1804 Inspiration Lane S., both of Huntsville, Ala. 35801
Filed July 13, 1967, Ser. No. 653,277
Int. Cl. B64g 1/00
U.S. Cl. 244—1 10 Claims



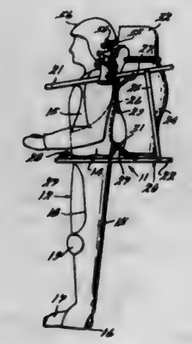
A docking structure for a pair of spacecraft with the docking end of the first spacecraft having a circular opening that receives a projecting incoming element on the docking end of the second spacecraft. At the free end of the incoming element is the apex of a pyramid structure that diverges toward the second spacecraft and merges into a priamatic portion that is relatively shorter than the pyramid structure and is connected to the second spacecraft. The side of the circular opening in the first spacecraft initially contacts one or more corners of the pyramid portion of the incoming projecting element and subsequently guides the incoming element into the docked position wherein the side of the circular opening engages the corners of the prismatic portion of the incoming element. Energy absorbing crushable material pads are provided between the mating surfaces of the first and second spacecraft and automatic latching means are provided for locking the projecting elements within the circular openings.

3,443,774
REMOTE CONTROLLED SPINNING MISSILE SYSTEM
Sven Carl-Johan Holmström, Bofors, and Per-Erik Nilsson and Tore Bertil Reinhold Olsson, Karlskoga, Sweden, assignors to Aktiebolaget Bofors, Bofors, Sweden, a Swedish company
Continuation-in-part of application Ser. No. 574,434, Aug. 23, 1966. This application Feb. 14, 1968, Ser. No. 705,527
Claims priority, application Sweden, Oct. 20, 1962, 11,269/62
Int. Cl. F42b 15/04; F41g 7/02
U.S. Cl. 244—3.12 4 Claims



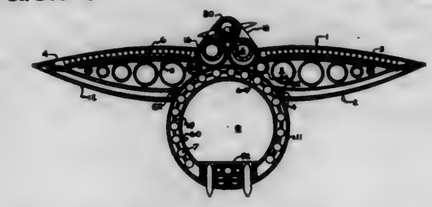
In a wire-guided missile system the trajectory of the missile is controlled by signal operated spoilers. The spoilers operate in response to repetitive control signals received over wires from a ground controller. The ground controller receives signals from the missile indicating its angular velocity about the spin axis. These signals are used to establish the frequency of the repetitive control signals.

3,443,775
FLIGHT BELT
Sam B. Williams, Walled Lake, Mich., assignor to Williams Research Corporation, Walled Lake, Mich., a corporation of Michigan
Filed June 23, 1965, Ser. No. 466,275
Int. Cl. B64d 25/06
U.S. Cl. 244—4 13 Claims



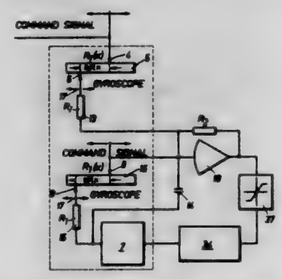
A flight belt having a gas turbine secured to a supporting garment, deflectors mounted on gimbal rings, and deflector controls actuated by movement of the pilot's head.

3,443,776
RINGPLANE
Alvin E. Moore, 916 Beach Blvd., Waveland, Miss. 39576
Continuation of abandoned application Ser. No. 389,973, Aug. 17, 1964. This application May 4, 1966, Ser. No. 547,674
Int. Cl. B64c 1/34, 17/00
U.S. Cl. 244—5 73 Claims



A light-weight, slightly heavier-than-air vehicle (such as an airplane or hovercraft), having fluid-dynamic (aerodynamic) and aerostatic lifting forces, and adapted to yield under major shocks without fracture of any of its parts. Resilient buffering means, comprising inflated flexible tubes, extends entirely around the load-carrying cabin space. In these tubes lighter-than-air units (such as elements 7 of FIGURE 1), containing helium, hydrogen or the like, may be housed, within more economically obtained heavier-than-helium gas. Other disclosed means for obtaining aerostatic lift are: containers of lighter-than-air gas inside the cabin (such as elements 136 of FIGURE 10); balloon-like members on top of the fuselage (such as elements 16 and 20 of FIGURE 1); and containers of helium or the like imbedded in plastic (such as elements 214 of FIGURE 13). Both the cabin and the wings comprise inflated tubes of flexible, non-stretchable material; such as fabric impregnated and permeated with rubber or plastic. The invention also includes: tubular wing-bracing means providing aerostatic lift; and a means for trimming the craft, comprising a plurality of liquid-storing tanks on each side of the longitudinal axis (such as elements 52 of FIGURES 1 and 4 or containers 140 and 142 of FIGURE 10). These tanks serve also as inner means to stiffen the deck part of the cabin, while the flexible-tube buffering means below and to the sides of the cabin may still yield, to counteract the damaging tendencies of major shocks.

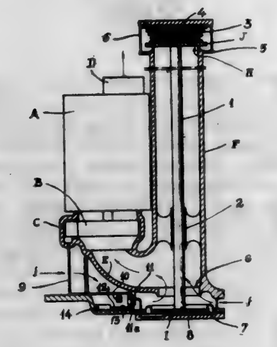
3,443,777
REGULATING ARRANGEMENT FOR AIRCRAFT
Werner Sobotta, Bremen-Vahr, Germany, assignor to Vereinigte Flugtechnische Werke G.m.b.H., Bremen, Germany
Filed Apr. 4, 1967, Ser. No. 628,421
Claims priority, application Germany, Apr. 6, 1966, V 30,888
Int. Cl. B64c 17/06, 13/50, 13/18
U.S. Cl. 244—77 11 Claims



Deviations of an aircraft from a desired position selected by the pilot, are corrected by a regulating arrange-

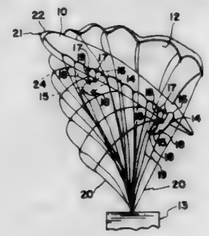
ment including a variable resistor having taps respectively controlled by the pilot and by a gyroscope part which responds to the deviation of the aircraft.

3,443,778
SYSTEMS FOR SUPPLYING FUEL TO AIRCRAFT ENGINES
Robert Sauz, Courbevoie, France, assignor to Intertechnique, Plaisir, Yvelines, France, a French company
Filed June 1, 1967, Ser. No. 642,762
Claims priority, application France, June 6, 1966, 64,262
Int. Cl. B64d *37/00*; B67d *5/50*
U.S. Cl. 244—135 6 Claims



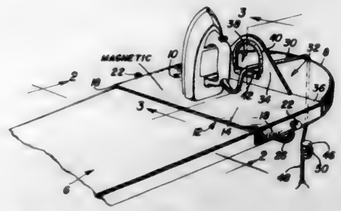
In a system for supplying fuel to aircraft engines from a fuel tank and comprising a fuel pump whose intake communicates with at least two fuel admission orifices located at different points of said fuel tank and inlet valves for controlling said admission orifices, the provision of positive and automatic hydraulic control means actuable under the action of gravity for selectively effecting, on the one hand, the opening of the valve whose function is to open the admission orifice which is submerged in the fuel and, on the other hand, the closure of the valve whose function is to close the admission orifice which is not submerged in the fuel.

3,443,779
AEROFLEXIBLE STRUCTURES
Francis M. Rogallo, Newport News, and Rodger L. Naeseth, Hampton, Va., assignors to the United States of America as represented by the Administrator of National Aeronautics and Space Administration
Filed Nov. 16, 1967, Ser. No. 683,612
Int. Cl. B64d *1/02, 17/00, 19/00*
U.S. Cl. 244—138 10 Claims



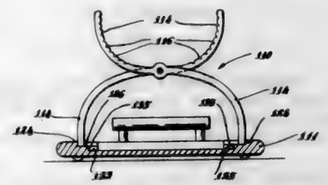
A new configuration for inflating the stiffeners of flexible wings with ram-air during flight comprising ram-air inlets located away from the forward stagnation area of the wing, with associated ram-air deflectors supported by the wing at points substantially aft of the forward stagnation area.

3,443,780
MAGNETIC SAFETY IRON REST
Lee P. Bruening, 919 E. Orange Grove Ave., Glendale, Calif. 91205
Filed Feb. 7, 1968, Ser. No. 703,597
Int. Cl. D06f *79/02*
U.S. Cl. 248—117.2 8 Claims



The appliance shown is preferably in the form of a readily applicable and removable ironing board attachment. It provides a safety-type electric iron rest and comprises a magnetized plate having depending end flanges with headed studs to accommodate a coil spring. The plate is provided with a cord suspending and slack take-up adapter.

3,443,781
FOOD SERVER
George F. Wysowski, Box 368, 23 Neck Road, Clinton, Conn. 06413
Filed Apr. 3, 1967, Ser. No. 628,095
Int. Cl. F16m *11/38*
U.S. Cl. 248—164 9 Claims

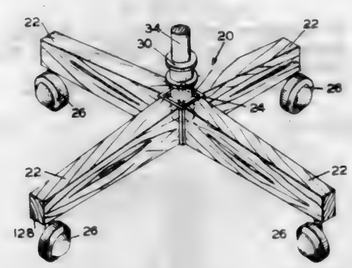


A device for holding an article of food from which portions are to be served usually by carving such as a roasted turkey or similar type of food piece. The device comprising essentially a cradle like member detachably mounted on a platter like base to support the food piece above the base. The cradle member having a structure resembling a pair of tongs which may be adjustable to close in on the food piece to not only support but hold the food piece from moving while being carved. The base provides means for also maintaining the cradle in position, but also for receiving droppings from the food piece and portions which have been carved off.

3,443,782
SUPPORT
Irving Fields, New Hyde Park, and Alvin R. Schneiderman, West Nyack, N.Y., and Harry R. Tiffany III, Riverside, Conn., assignors to Lehigh Furniture Corporation, New York, N.Y., a corporation of New York
Filed Oct. 21, 1966, Ser. No. 588,422
Int. Cl. F16m *11/20*
U.S. Cl. 248—188.7 33 Claims

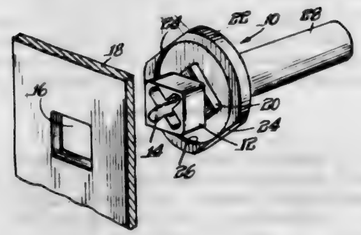
An apparatus and method for forming a multileg furniture base wherein the legs are formed of wood and radially

extend from a centrally disposed hub member. The hub member is secured thereto by a plurality of pairs of arms; one arm of each pair being adapted to be inserted within a bore formed in the leg, and the other arm of



each pair being adapted to lie beneath the leg. The arms are in turn secured together by appropriate means, such as screws, so as to urge them towards each other to grip the leg portion disposed therebetween.

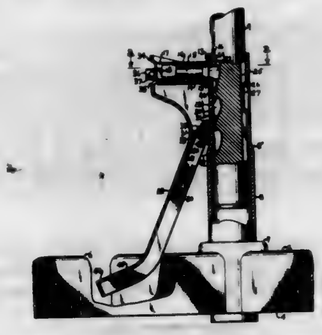
3,443,783
PLASTIC FASTENER
Julian V. Fisher, Carpentersville, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Dec. 14, 1966, Ser. No. 601,767
Int. Cl. E04g *7/28*; A44b *17/00*
U.S. Cl. 248—220.5 10 Claims



A one-piece plastic fastener for application to a polygonal aperture in a work panel, including a resiliently collapsible head of polygonal cross-section having a cavity therein to enhance the collapsibility of the corners thereof. A relatively rigid element having a polygonal cross-section similar to that of the aperture in the work panel is axially connected to the head, but has the corners thereof out of alignment therewith, and a second head is connected to the rigid element on the side thereof opposite from the first head.

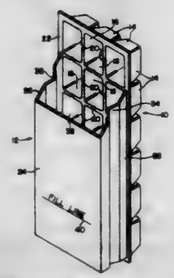
3,443,784
LOCKING MECHANISM FOR CHAIR PEDESTALS
Thomas G. Walkinshaw, Shawnee Mission, Kans., assignor to Cramer Industries, Inc., Kansas City, Kans., a corporation of Missouri
Filed Apr. 5, 1967, Ser. No. 628,611
Int. Cl. F16m *11/16*
U.S. Cl. 248—408 4 Claims

The present invention discloses a chair having a base, a seat, a pedestal, and means for adjustment of the seat and pedestal vertically with respect to a standard of the chair, and particularly locking mechanism to prevent accidental dislodgment of the locking mechanism from the pedestal during use; also, whereby movement of the



pedestal upwardly will automatically loosen a locking pin without manual manipulation thereof.

3,443,785
ICE CUBE TRAY
Gerald M. Ewers, Columbus, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 15, 1966, Ser. No. 594,540
Int. Cl. B29c *7/00*; B28b *7/24*
U.S. Cl. 249—53 5 Claims

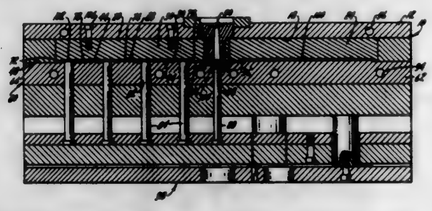


1. An ice tray comprising:
a cube-freezing lower section having a series of upwardly-open cube molds encompassed by an upper-face perimetric rim, said lower section being constructed of a material sufficiently flexible to permit manual racking for releasing frozen cubes from said cube molds; and
an upper section, also of a flexible material, including three closed wall sides, a fourth open-face side, and a top wall overlying only a part of said lower section, said three walls having their lower edges connecting said perimetric rim in a water sealing relation, said open-face side forming the mouth of an upwardly-open, generally pocket-shaped vessel for receiving water formed between said upper and lower sections when said tray is positioned in a generally upright position for filling, said mouth overlying the mold area of said lower section.

3,443,786
MOLD STRUCTURE
George L. Bachner, Chicago, Ill., assignor to Majestic Tile Company, Melrose Park, Ill., a corporation of Delaware
Filed Jan. 11, 1967, Ser. No. 608,629
Int. Cl. B28b *7/10*; B22d *17/00*
U.S. Cl. 249—68 5 Claims

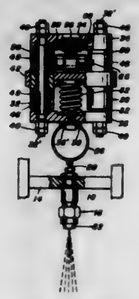
A mold structure having two mold parts formed with recessed and extending areas and adapted to close in registry to form a plurality of mold cavities, such cavity

having, in part, two irregular surfaces and an opposed grooved surface which enable injection molding of a decorative facing tile having surfaces textured to resemble



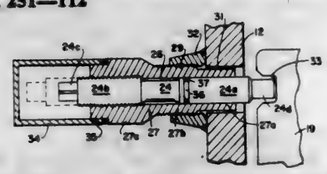
brick and mortar on one side and bearing ridges on the other side which enable the bottom-most brick in a stack of bricks to be slid outwardly beneath the stack without jamming.

3,443,787
RAPID-ACTION VALVE OPERATOR
Alfred Teplitz, Pittsburgh, Pa., assignor to United States Steel Corporation, a corporation of Delaware
Filed Aug. 8, 1966, Ser. No. 570,893
Int. Cl. F16k *31/12, 31/44*
U.S. Cl. 251—58 **4 Claims**



The apparatus of the invention is for use in operating a spray nozzle of an article-marking apparatus and includes a cam and yoke structural arrangement whereby a paint spray nozzle is operated at relatively high speed to cause the spray nozzle to discharge a fluid burst of milliseconds duration so that clearly distinguishable indicia can be produced on material moving at a relatively high speed.

3,443,788
GATE VALVE WITH LOCKING PINS
Marvin H. Grove, Houston, Tex., assignor to M & J Valve Company, Houston, Tex., a corporation of Delaware
Continuation-in-part of application Ser. No. 635,834, May 3, 1967. This application Dec. 4, 1967, Ser. No. 687,781
Int. Cl. F16k *35/02, 3/00*
U.S. Cl. 251—112 **3 Claims**

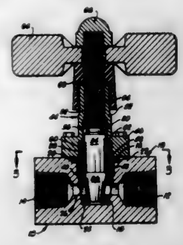


A valve of the gate type in which normal movement of the gate by conventional valve operating means serves to position the gate in either full open or closed positions. Retractable locking means in the form of one or more locking pins are mounted in the side walls whereby the gate can be locked against such normal movement.

ERRATUM

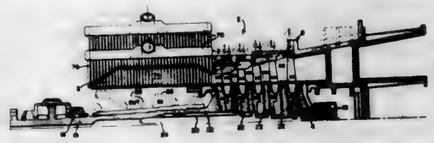
For Class 251—209 see:
Patent No. 3,443,793

3,443,789
PLUG VALVE
Clarence O. Glasgow and Charles A. Bucklin, Tulsa, Okla., assignors to Custom Engineering & Manufacturing Corporation, Tulsa, Okla.
Filed June 27, 1966, Ser. No. 560,664
Int. Cl. F16k *1/02, 27/08*
U.S. Cl. 251—214 **2 Claims**



A valve including a valve body which has an inlet port, an outlet port, a stem opening and an internal stem cavity which communicates with the opening and ports. A removable valve seat is located in the stem cavity, and the valve further includes a valve stem structure having a valve seat portion at one end located in the stem cavity to sealingly engage the seat. Spaced from the seat portion is a threaded portion of the stem structure, and this is positioned at least partially outside the valve body and engages a bonnet secured to the body. The bonnet includes a portion which surrounds a cylindrical stem guide which in turn surrounds a smooth walled portion of the stem structure. When the bonnet is secured in position, the stem guide is pressed radially into sealing engagement with the valve stem structure, and is also forced axially against the valve seat to retain it in operative position.

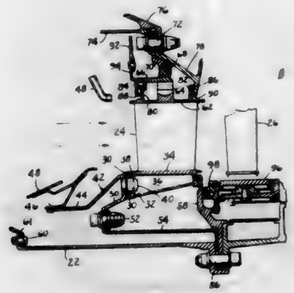
3,443,790
STEAM COOLED GAS TURBINE
Bruce O. Buckland, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed July 8, 1966, Ser. No. 563,811
Int. Cl. F01d *5/04, 5/18*
U.S. Cl. 253—39.1 **6 Claims**



Gas turbine having hollow rotor, stator, and casing members for the passage therethrough, near the working fluid surface thereof, of coolant steam.

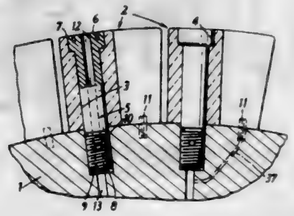
3,443,791
TURBINE VANE ASSEMBLY
Edward B. Sevetz, West Hartford, Conn., and Leston M. Freeman, Jr., Swampscott, Mass., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Nov. 23, 1966, Ser. No. 596,663
Int. Cl. F01d *5/14, 5/30*
U.S. Cl. 253—39.1 **12 Claims**

A stator vane assembly is provided in which the vanes are assembled into and disassembled from the engine structure in magazine fashion. The individual stator vanes are secured to ring segments, preferably semicircular ring



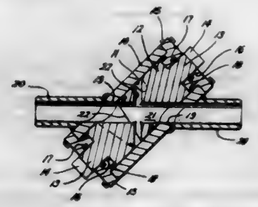
segments, and vanes are installed or removed from the engine in multiples merely by installing or removing the magazine elements.

3,443,792
GAS-TURBINE ROTORS
Norman Moss, Ilford, England, assignor to The Plessey Company Limited, Ilford, England, a British company
Filed Sept. 26, 1967, Ser. No. 670,664
Claims priority, application Great Britain, Oct. 1, 1966, 43,952/66
Int. Cl. F01d *5/08, 5/18, 5/14*
U.S. Cl. 253—77 **4 Claims**



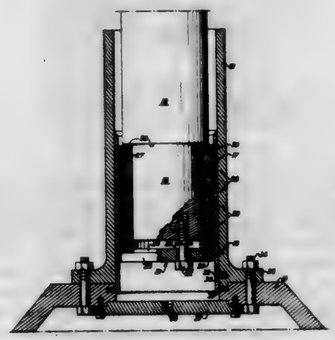
The rotor blades of a gas turbine are made of ceramic material and are secured to the circumference of a turbine disc made of steel by steel pins screwed into the disc and extending radially through each blade and having at their outer ends a head accommodated in a recess of the ceramic material.

3,443,793
VARIABLE AREA ORIFICE, ROTARY CONTROL VALVE
Eldon E. Hulsey, 5747 Warm Springs, Houston, Tex. 77035
Continuation-in-part of application Ser. No. 492,475, Oct. 4, 1965. This application Dec. 23, 1966, Ser. No. 604,414
Int. Cl. F16k *5/04, 5/10*
U.S. Cl. 251—209 **16 Claims**



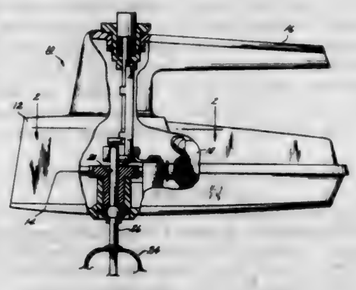
A rotary control valve of the plug or ball-type having spiral variable area orifice flow port and flow passage designs adapted to permit selective and variable control of fluid flow over a wide range of settings while maintaining at all settings substantially straight-line or through-conduit flow.

3,443,794
AGITATOR SHAFT STEADY BEARING
Oscar A. Peterson, Washington Township, Bergen County, N.J., assignor to Halcon International, Inc., a corporation of Delaware
Filed Jan. 3, 1967, Ser. No. 606,910
Int. Cl. B01f *7/18;* **F16c** *1/26, 17/00*
U.S. Cl. 259—1 **7 Claims**



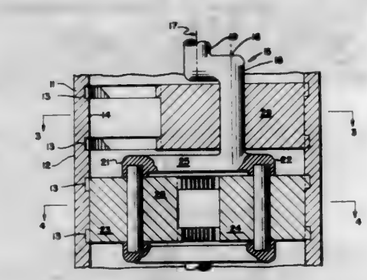
This invention relates to means for providing a steady bearing for the free end of a rotatable shaft. The invention comprises an annular bushing means about the free end of a rotatable shaft, in combination with an annular bearing means adapted to receive the annular bushing means in slidable engagement. The invention permits ready access and maintenance or replacement of bushing and bearing components as well as seals generally provided at the upper end of the shaft by permitting the shaft to be moved along its longitudinal axis, generally vertically, a limited distance, thereby disengaging the bushing and bearing means.

3,443,795
BEATER EJECTOR FOR FOOD MIXER
Robert I. Gresens, Rochester, and Stephen M. Sackmary, Spencerport, N.Y., assignors to General Electric Company, a corporation of New York
Filed Aug. 15, 1967, Ser. No. 660,628
Int. Cl. B01f *7/04, 15/02*
U.S. Cl. 259—1 **10 Claims**



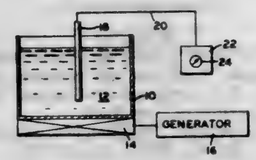
The disclosure herein shows an improved beater ejector mechanism for a food mixer with novel structure to prevent ejection of the beaters when the mixer is in operation.

3,443,796
APPARATUS FOR PROCESSING VISCOUS FLUIDS
Charles J. Shearer, Yonkers, N.Y., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Nov. 28, 1967, Ser. No. 686,033
Int. Cl. B01f *7/30*
U.S. Cl. 259—5 **7 Claims**



Apparatus for processing viscous fluids comprising a cylindrical casing having a rotary member mounted in the casing with its central longitudinal axis offset from the central longitudinal axis of the casing. The rotary member has extensions integral with it and offset from its central longitudinal axis. A plurality of cylindrical rollers are mounted on both the rotary member and the extensions and remain in continuous contact with the inner wall of the casing as they rotate about their own axes.

3,443,797
INSTRUMENT FOR MEASURING CAVITATION INTENSITY IN A LIQUID
Norman G. Branson, Stamford, Conn., assignor to Branson Instruments, Incorporated, Stamford, Conn.
Filed Nov. 26, 1965, Ser. No. 509,834
Int. Cl. G01n *29/00;* **G01h** *3/00*
U.S. Cl. 259—72 **6 Claims**



In order to measure the cavitation intensity in an ultrasonically agitated liquid piezoelectric probe is immersed therein and coupled to a measuring circuit which passes signals in the radio frequency range, substantially above one MHz. The circuit includes a balanced bridge and a resistive element which is heated by the radio frequency signals, the change of resistance of said resistive element being indicative of the cavitation intensity.

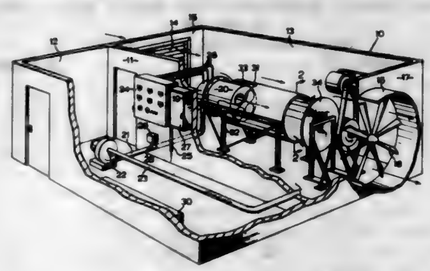
3,443,798
FLUID PROCESSING DEVICE
Robert H. Overcashier, Walnut Creek, Calif., and Charles J. Shearer, Yonkers, N.Y., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed June 15, 1967, Ser. No. 646,324
Int. Cl. B01f *7/26;* **B29h** *1/10*
U.S. Cl. 259—102 **15 Claims**

A device for processing viscous fluids having a rotor centrally mounted in a cylindrical shell. A plurality of staggered successive horizontal rows are located in the annulus between the rotor and the inner wall of the shell.



The rollers are rotated as the viscous fluids are circulated into the device and pass between the surfaces of the rotor, shell and rollers.

3,443,799
AIR HEATING SYSTEMS
Donald H. Thorburn, East Flamboro, Ontario, Canada, assignor to Alco Standard Corporation, Philadelphia, Pa.
Filed Dec. 19, 1966, Ser. No. 602,832
Int. Cl. F23l *9/04;* **F24d** *5/04*
U.S. Cl. 263—19 **10 Claims**

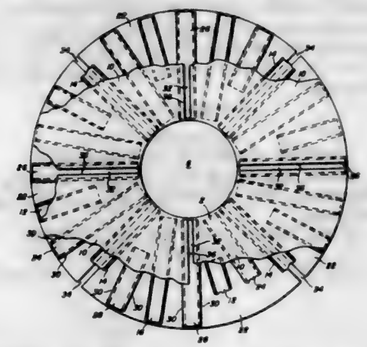


1. A direct-fired air heating system for heating a stream of air comprising a burner discharging the combusted gases produced thereby into the air stream, means for supplying to the said burner a mixture of fuel and primary air of a ratio to permit at least substantially complete combustion of the fuel air mixture in the said primary air, shroud means receiving the combusted gases from the burner, confining them in a combustion path capable of ensuring complete combustion of said fuel air mixture and discharging them into the air stream for mixing therewith, means for supplying secondary combustion air to said shroud combustion path, means for controlling the said burner to maintain at a predetermined value the temperature of the mixture of the air stream and the combusted gases discharged therein from the shroud means, and means for obtaining heated primary air for the burner downstream of the discharge of the shroud means into the air stream.

3,443,800
GAS CIRCULATING SEPARATOR
Frank Kennedy, Johnstown, Pa., assignor to United States Steel Corporation, a corporation of Delaware
Filed Mar. 21, 1967, Ser. No. 624,937
Int. Cl. F27d *5/00;* **F27b** *11/10*
U.S. Cl. 263—47 **7 Claims**

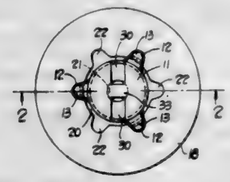
A separator for use between stacked coils of steel strip within an annealing cover, the separator permitting circulation of atmosphere gas. The separator is fabricated from a plurality of top and bottom assemblies each made of steel plate with a plurality of standard channels welded

thereto at the end of their flanges. A space is provided between the plates of the sections to permit welding of



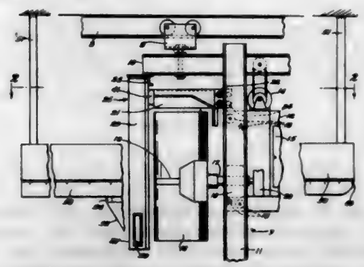
the plates of one assembly to a channel of another assembly.

3,443,801
TELESCOPING WIRE ANNEALING SPIDER
William P. Freund, Broadview Heights, Ohio, assignor to The Alloy Engineering Company
Filed Sept. 5, 1967, Ser. No. 665,596
Int. Cl. F27d *5/00;* **F27b** *21/04*
U.S. Cl. 263—47 **14 Claims**



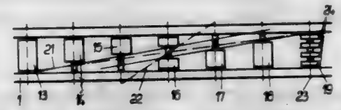
A wire coil annealing spider having structure including a base plate is formed with a recess in its lower end, shaped to receive and positively engage the top portion of a similar spider inserted beneath so that the spiders may be stacked in telescoping fashion. Each spider is constructed so that the coils of wire on the lower spider do not support the weight of the coils of wire on the upper spider while the spiders are stacked.

3,443,802
FUME CONTROL APPARATUS
Robert B. Werner, Cincinnati, Ohio, assignor to The Kirk & Blum Manufacturing Co., Cincinnati, Ohio, a corporation of Ohio
Filed May 1, 1967, Ser. No. 635,034
Int. Cl. F27d *17/00;* **C21c** *5/38;* **F23j** *11/00*
U.S. Cl. 266—15 **3 Claims**



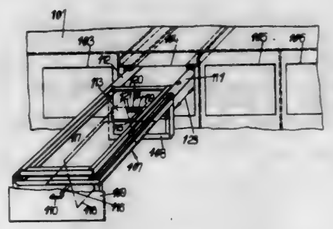
Foundry apparatus for entraining and disposing of noxious fumes emitted from the mouths of hot metal carrier ladles at a charging station and while the carrier ladles are in transit toward a metal casting station.

3,443,803
ROLLER ARRANGEMENT IN SEPARATING DEVICES
Hans-Joachim Wernicke, Neuenhain, Taunus, Germany, assignor to Messer Griesheim G.m.b.H., Frankfurt am Main, Germany, a corporation of Germany
Filed July 5, 1966, Ser. No. 562,909
Claims priority, application Germany, July 16, 1965, M 65,984
Int. Cl. B23k *7/02, 37/04*
U.S. Cl. 266—23 **7 Claims**



A roller arrangement for workpiece separating devices such as cutting torches which are moved longitudinally along with a workpiece and simultaneously across the workpiece, includes a set of stationary rollers for supporting the workpiece. Each roller is arranged with a gap and the gaps define the path taken by the separating means as it traverses completely across the workpiece.

3,443,804
CUTTING TORCH CARRIAGE WITH SLIDABLE DRAWER
Georg Röder, Frankfurt am Main-Fechenheim, Germany, assignor to Messer Griesheim G.m.b.H., Frankfurt am Main, Germany, a corporation of Germany
Filed Sept. 22, 1966, Ser. No. 581,266
Claims priority, application Germany, Sept. 24, 1965, M 66,758
Int. Cl. B23k *37/02*
U.S. Cl. 266—23 **7 Claims**

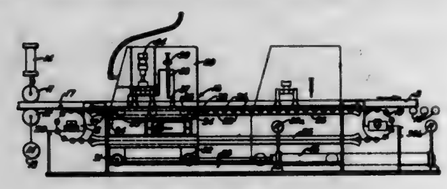


A cutting torch carriage for a metal cutting machine functions as the housing for a set of cutting controls which are disposed in a slidable drawer in the carriage. The controls are carried by a support pivotally mounted in the drawer for rotation so that the controls are accessible from many different directions when the drawer is opened.

3,443,805
SEVERING STATION FOR MOVING WORKPIECES
Joseph Irwin Greenberger, Pittsburgh, Pa., assignor to United Engineering and Foundry Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 22, 1966, Ser. No. 596,150
Claims priority, application Great Britain, Dec. 9, 1965, 52,396/65
Int. Cl. C21b
U.S. Cl. 266—23 **10 Claims**

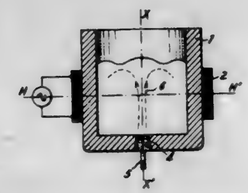
The present invention relates to a torch cutoff device

and, more particularly, to such a device constructed and



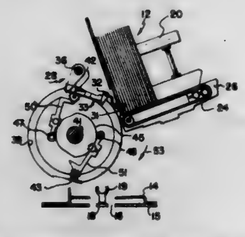
arranged to sever elongated pieces as they move along a selected path of travel.

3,443,806
METHOD OF USING INDUCTION FURNACES
Jean Galey, Ville d'Avray, and Gilbert Valin, Noiseau, France, assignors to L'Air Liquide, Paris, France
Filed Aug. 10, 1966, Ser. No. 597,185
Int. Cl. C21c *5/00*
U.S. Cl. 266—34 **5 Claims**
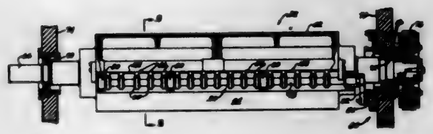


A metallurgical induction furnace is operated by imposing an alternating electromagnetic field on molten metal in a crucible, and blowing fine bubbles of gas through a lower porous surface of the crucible. Among other advantages, the trapping of solid impurities against the walls of the crucible is prevented.

3,443,807
DETECTOR MECHANISM FOR FEEDING APPARATUS
Victor A. Zagel, Parma, Ohio, assignor to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware
Filed June 14, 1967, Ser. No. 645,911
Int. Cl. B65h *7/04*
U.S. Cl. 271—57 **18 Claims**



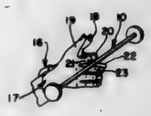
A detector mechanism operates to detect when no or more than one signature is being conveyed by a transfer means of a signature handling mechanism. The detector mechanism includes first and second trip members cooperably associated with the transfer means and which are moved from a normal position to a tripped position when no or more than one signature is being conveyed by the transfer means, respectively, the trip members being operatively connected with an actuating means for actuating a control and being operable to effect movement of the actuating means to actuate the control in response to movement thereof from their normal position toward their tripped position. The detector mechanism also includes a cooperable member for locking the actuating means against movement toward its release position, when desired, and includes an adjusting means for adjusting the position or the second trip member relative to the transfer means for signatures of varying thicknesses.

3,443,808
SHEET GRIPPER MECHANISM
Carl O. Siebke, Pittsburgh, Pa., assignor to Miller Printing Machinery Co., Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 5, 1967, Ser. No. 636,389
Int. Cl. B65h *29/06*
U.S. Cl. 271—82 **10 Claims**



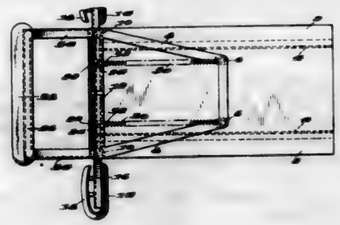
A positive drive cam actuated gripper mechanism and apparatus for adjusting the pressure or clamping force of the gripper fingers on the gripper pads. The cam member includes an adjustable portion on the surface where the cam member through the cam follower urges the gripper mechanism toward a closed position. The adjustable portion of the cam surface is moved to a position where the gripper fingers are spaced a preselected distance from the gripper pads. The gripper fingers are each rotated on the actuator shaft toward the gripper pads so that a preselected spacing remains between the gripper finger and the gripper pad. After adjustment of the gripper fingers, the adjustable portion of the cam surface is moved to a position where under normal operating conditions the gripper fingers are in a closed position abutting the gripper pads. A spring associated with the gripper fingers after adjustment provides a preselected clamping force between the gripper fingers and the gripper pads in the normally closed position of the gripper mechanism. There is provided a positive drive cam follower that has two rollers that ride on opposed surfaces of the groove in the cam face.

3,443,809
EXERCISING THE HANDS USING A ROD DEVICE
Daniel R. Montanez, 1205 W. 21st St., Rock Falls, Ill. 61071
Filed July 5, 1966, Ser. No. 562,655
Int. Cl. A63b *67/08, 21/30*
U.S. Cl. 272—67 **9 Claims**



A method of handling a rod device that includes placing the hands together, placing the rod between the thumbs and index fingers and consecutively and intermittently bending the index, medius, annularis and minimus fingers while permitting the rod to intermittently come to rest against the sides of the unbent fingers, and doing all of the above without dropping the rod.

3,443,810
FOOTBALL PRACTICE DEVICE
Duke Drakulich, 3430 W. Plumb Lane, Reno, Nev. 89502
Filed May 25, 1966, Ser. No. 552,772
Int. Cl. A63b *69/34*
U.S. Cl. 273—55 **6 Claims**



A football practice device is formed of a sled carrying a pair of vertically extending frame members on which padded wings are pivoted to turn about vertical axes between first positions in which the wings extend out parallel to each other from opposite sides of the frame and second positions in which the wings are parallel to each other. The wings extend past the pivots and the parts between the frame members are connected by coil springs to other frame members, the springs tending to hold the wings in the first positions.

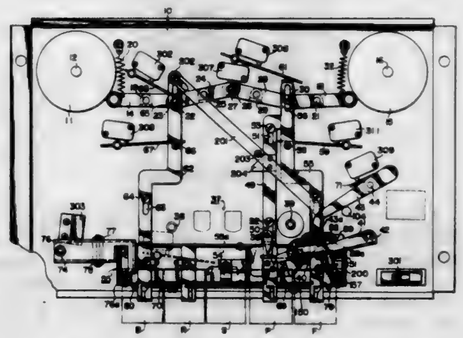
3,443,811
PRACTICE DEVICE FOR GOLFERS
Ernest J. Brooks, 2635 Wark St., Victoria, British Columbia, Canada
Filed Apr. 14, 1966, Ser. No. 542,498
Int. Cl. A63b *69/36*
U.S. Cl. 273—183 **1 Claim**



A flexible feeler element, which engages a golfer's forehead during a golf swing, is removably clamped to one end of a rigid arm which has its other end adjustably secured to the upper end of a vertical supporting post.

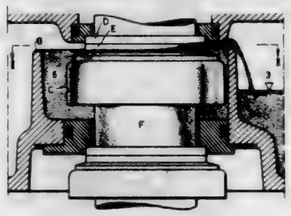
3,443,812
TAPE DRIVE CONTROL MECHANISM FOR MAGNETIC TAPE RECORDERS
Katsuya Atsumi, Tokyo, Japan, assignor to Akai Electric Company Limited, Tokyo, Japan
Filed Mar. 1, 1966, Ser. No. 530,818
Claims priority, application Japan, Mar. 3, 1965, 40/12,058; May 24, 1965, 40/30,341
Int. Cl. G11b *15/44*
U.S. Cl. 274—4 **4 Claims**

A tape drive control arrangement for a magnetic recorder having push buttons controlling tape reeling mechanisms and brakes, and a tape tension condition sensing arm for sensing the end, breaking, or undue slacking of the tape, includes a spring biased pivotal tape fluctuation suppression arm with a guide contacting the tape on the opposite side of the tape from the sensing arm when the push buttons have been operated to release the brake and operate the tape reeling motors. A spring normally urges the tape fluctuation suppression arm away from the tape in the rest position where the brakes are applied and



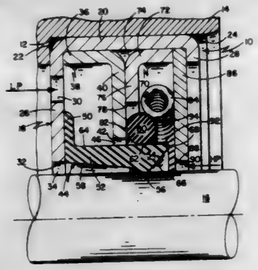
the reeling motors are shut off. A by-pass circuit around a manual switch includes an electromagnetic plunger operated switch controlled by a tape tension condition sensing arm switch through a time delay and a brake position sensing switch so that even when the manual switch has been opened, winding of the tape can be completed on either reel.

3,443,813
COOLING DEVICE FOR SEALING RINGS
Konrad Valdemar Carlsson, Solna, Sweden, assignor to Stenberg-Flygt AB, Solna, Sweden
Filed July 12, 1966, Ser. No. 564,567
Claims priority, application Sweden, July 22, 1965, 9,698/65
Int. Cl. F16j *15/54, 15/16*
U.S. Cl. 277—18 **4 Claims**



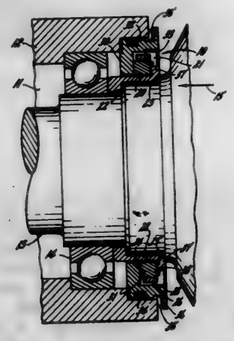
An arrangement for liquid cooling seal rings of a rotatable shaft utilizes liquid sealed by the rings and the rotation of the shaft to force this liquid into cooling relationship with the seal rings by means of a fixed guide surface. The fixed guide surface extends axially of the shaft as three continuous portions, a first portion spaced from the shaft blending into a second portion extending toward the shaft and a third portion close to the shaft so that upon rotation of the shaft oil is forced into the third portion and out of the third portion against the ring to be cooled.

3,443,814
HYDRAULICALLY BALANCED RADIAL SEAL
John Charles Dahlheimer, Laconia, N.H., assignor to International Packings Corporation, Bristol, N.H., a corporation of New Hampshire
Filed Jan. 18, 1967, Ser. No. 610,108
Int. Cl. F16j *15/32, 15/24, 15/54*
U.S. Cl. 277—27 14 Claims



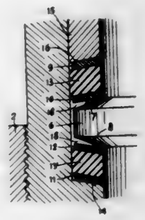
A hydraulically balanced radial seal for shaft to bore sealing including a flexible, tubular sealing lip, a first member for supporting the low pressure end of the sealing lip and sealing surface on the internal surface and proximate the high pressure end of the sealing lip. A second member is positioned axially between the low pressure and high pressure ends of the sealing lip and is spaced radially from the external surface of the sealing lip. There is a secondary seal in sealing relationship with the second member and with a portion of the external surface of the sealing lip generally radially in line with the sealing surface. Also disclosed is such a seal reversed in relation to the high and low pressures having the secondary member positioned axially beyond the low pressure end of the sealing lip and spaced radially from the shaft. The secondary seal is in sealing relationship with the second member and with a portion of the external surface of the sealing lip generally radially in line with the sealing surface and there are vent means for balancing the pressure on the external and internal surfaces of the sealing lip on the high pressure side of the secondary seal and sealing surface, respectively.

3,443,815
PRESSURE RELIEVED LABYRINTH
Robert M. Voitik, Glenview, and Kermit D. Yost, Skokie, Ill., assignors to Continental Illinois National Bank and Trust Company of Chicago, as trustee
Filed July 14, 1966, Ser. No. 565,201
Int. Cl. F16j *15/36, 15/34*
U.S. Cl. 277—83 5 Claims



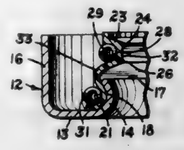
A rotary seal for providing an effective seal between a housing and a rotatable shaft under static and start-up conditions as well as extreme high temperature and pressure conditions incurred during high speed operations. The seal includes a stator wall and rotor which are biased into engagement during low pressure start-up conditions to prevent fluid leakage, but are axially movable in response to a predetermined pressure differential to permit the rotor limited axial movement so that it may operate at high speeds as a floating type seal without excessive wear of the rotor and stator.

3,443,816
SEAL ASSEMBLY FOR A BALL-TYPE VALVE
Pierino Saleri and Arturo Saleri, both of 3 Via Industriale, Lumezzane, San Sebastiano, Brescia, Italy
Filed May 10, 1966, Ser. No. 548,913
Claims priority, application Italy, Jan. 29, 1966, 2,164/66
Int. Cl. F16k *41/04*; F16j *15/18, 15/34*
U.S. Cl. 277—112 1 Claim



The seal assembly of this ball-type valve permits a fluid-tight seal under any variations in temperature by utilizing a stem which has a collar with two inclined planes, a pair of gaskets of flexible material and enclosed between bendable metallic washers of frusto-conical sectional configuration.

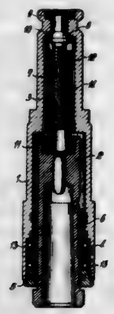
3,443,817
TEMPERATURE STABLE SEAL
Victor G. Reiling, P.O. Box 2271, Dayton, Ohio 45429
Original application Oct. 11, 1963, Ser. No. 315,642, now Patent No. 3,281,512, dated Oct. 25, 1966. Divided and this application Sept. 6, 1966, Ser. No. 577,365
Int. Cl. F16j *15/32, 9/06*; F02f *5/00*
U.S. Cl. 277—153 10 Claims



A temperature stable seal assembly includes a seal element of polytetrafluoroethylene having a dynamic seal surface of predetermined configuration, forming a high pressure seal area, and having a primary plastic memory to decrease the deformation thereof in response to increases in temperature. A static seal surface is also provided which rests in a plane different from that of the dynamic seal surface. The dynamic seal surface also possesses a secondary plastic memory tending to urge the high pressure seal area into engagement with the member being sealed in response to increases in temperature.

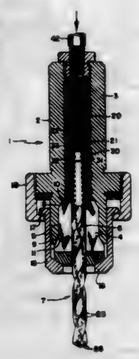
Methods of preparing the seal member and assembly are also disclosed.

3,443,818
QUICK-CHANGE CHUCK
Otto Fauth, Nellingen, near Esslingen, Germany, assignor to Otto Bilz, Nellingen, Germany
Filed July 11, 1967, Ser. No. 652,600
Claims priority, application Germany, July 20, 1966, B 88,080
Int. Cl. B23b *31/00, 5/22, 5/34*
U.S. Cl. 279—16 7 Claims



A quick-change chuck in which the floating tool holder is adjustable in its axial direction relative to its cylindrical housing by means of an adjusting screw.

3,443,819
DRILL CHUCK WITH COOLANT SUPPLY
Milton L. Benjamin and David D. Walker, Chagrin Falls, Ohio, assignors to Erickson Tool Company, Solon, Ohio, a corporation of Ohio
Filed Dec. 22, 1966, Ser. No. 603,874
Int. Cl. B23b *31/00, 5/34, 5/22*
U.S. Cl. 279—20 11 Claims



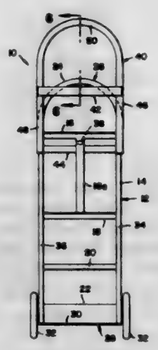
A chuck having a sliding connection between an adaptor and stop member for maintaining inner end of tool in seating engagement with adaptor despite slight axial misalignment between tool and stop member. An opening in adaptor of sufficient diameter to overlap a smaller opening in stop member for all adjusted positions of adaptor provides a continuous flow path for coolant into oil holes in the seated end of tool.

3,443,820
SKI POLE WITH LIQUID CONTAINER
Bryant Baker, 4207 S. Hudson Parkway, Englewood, Colo. 80110
Filed Mar. 29, 1967, Ser. No. 626,803
Int. Cl. A63c *11/22*
U.S. Cl. 280—11.37 4 Claims



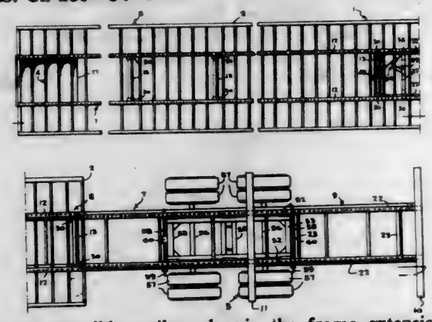
A ski pole comprises a tubular shaft having a substantial length of uniform diameter and a plastic flask or vial removably mounted within the uniform portion for containing a liquid such as a beverage. The flask is clamped in the ski pole handle assembly and is readily detachable from the pole therewith.

3,443,821
HAND TRUCK WITH EXTENDABLE BODY
William J. Alexander, Castro Valley, Calif. (2679 Cresta Verde, Camino, Calif. 95709)
Filed Aug. 28, 1967, Ser. No. 663,852
Int. Cl. B62d *21/14, 21/18*; B60p *1/04*
U.S. Cl. 280—34 4 Claims



A hand truck having a frame which includes a pair of parallel frame members, a platform held relative to the frame near one end thereof, a pair of wheels held near the platform on which the truck is rollable, a handle fixed to the frame, a member extendable from the frame along the parallel frame members, and a spring clip fixed to the extendable member and adapted to receive and releasably hold the handle when the extendable member is extended.

3,443,822
EXTENSIBLE TRAILER
Frederick A. Weiss, 1148 Gypsy Lane E., Towson, Md. 21204
Filed Dec. 4, 1967, Ser. No. 687,731
Int. Cl. B62d *21/14*
U.S. Cl. 280—34 9 Claims



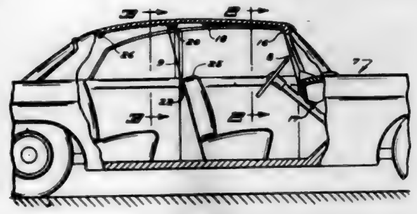
An extensible trailer wherein the frame extension is telescopically mounted with respect to the main frame section, and moves on rollers formed from sleeves freely rotatable on tubular cross-struts of the frame. The extension can be locked in selected positions of adjustment, and a tandem wheel mount, which supports the frame, is adjustably connectable along the extension and the main frame. The extension can be separated from the main frame section by removing limit stops and shifting the wheel mount to a position under the main frame.

3,443,823
COLLAPSIBLE FRAME FOR A BABY CARRIAGE
Guiseppe Perego, Piazza Martiri della Liberta 4–6, Arcore, Milan, Italy
Filed July 31, 1967, Ser. No. 657,239
Claims priority, application Germany, May 23, 1967, P 42,203
Int. Cl. B62b *7/10*
U.S. Cl. 280—36 12 Claims



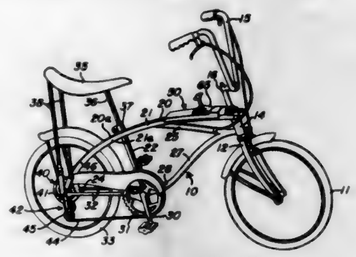
A collapsible frame for a baby carriage having at least two longitudinal support bars, which bars are interconnected by a pair of axles having wheels on the ends thereof. Each side of the support frame includes an inclined upwardly extending support member pivotally connected at one end to the support bar and pivotally connected at the other end to a rocker lever. The rocker lever is pivotally connected to an auxiliary support member at one end thereof, the other end of the auxiliary support member being pivotally connected to the other end of the support bar. One end of the rocker lever is formed as a pusher handle, which handle extends transversely across the frame so as to interconnect the rocker arms on both sides thereof for synchronized movement of the mechanisms on each side of the support frame. A locking device connects the rocker arm to the support member for holding the frame in the unfolded position. A pair of bed support arms are pivotally interconnected to the support members and the rocker arms.

3,443,824
CRASH ATTENUATION DEVICE
Wilson G. Dietrich, Western Ave. S., Faribault, Minn. 55021
Continuation-in-part of application Ser. No. 446,949, Apr. 9, 1965. This application Sept. 19, 1967, Ser. No. 683,044
Int. Cl. B60r *21/04*
U.S. Cl. 280—150 5 Claims



A transparent flexible sheet of material having a relatively low initial yield point, a relatively high ultimate tensile strength and good tear resistance is firmly and tautly held along the edges thereof in a vehicle between a passenger and obstructions ahead of the passenger and spaced away from both. This sheet forms a shield which will absorb the energy of the moving passenger when he strikes it as a result of a crash of the vehicle.

3,443,825
SHIFT CONSOLE FOR BICYCLE
Donald A. Wolf, Dayton, Ohio, assignor to The Huffman Manufacturing Company, Miamisburg, Ohio, a corporation of Ohio
Filed July 3, 1967, Ser. No. 650,963
Int. Cl. B62j *39/00*; G05g *11/00*
U.S. Cl. 280—289 9 Claims

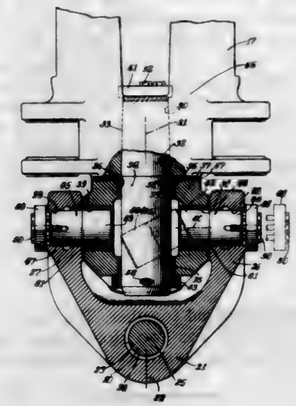


A bicycle having a console adapted to be mounted on the support tubes between the front fork and seat masts to provide a guide for the shift lever which is mounted in association therewith. The console engages the twin tubes and is releasably held in position by a pair of wire brackets.

3,443,826
PIVOT FOR TANDEM SCRAPER
Ramiz Y. Hermiz, Addison, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Oct. 11, 1966, Ser. No. 585,786
Int. Cl. B60d *1/02*
U.S. Cl. 280—492 3 Claims

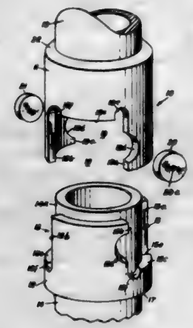
A pivot means for connecting a pair of scrapers in tandem having a simple beam attached to the frame

of the leading scraper and pivotally mounting a yoke, an adapter cantilever pinned to the yoke, a bearing on



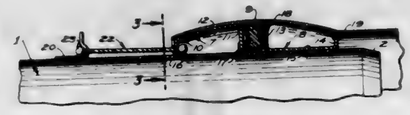
the adapter for supporting the trailing scraper and a pin extending between the adapter and the trailing scraper.

3,443,827
CONNECTOR ASSEMBLY FOR AXIALLY CONNECTING RODS AND TUBING
William L. Acker, P.O. Box 47, La Plume, Pa. 18440, and Peter Boezi, R.D. 2, Box 178A, Moscow, Pa. 18444
Filed Oct. 21, 1966, Ser. No. 588,524
Int. Cl. F16l *33/00, 35/00, 55/00*
U.S. Cl. 285—39 3 Claims



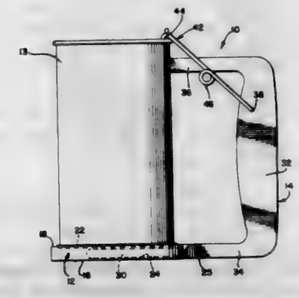
A connector assembly for a rod or a tube where one tube or rod has an affixed peripheral collar that protrudes beyond the tube or rod and is cut away axially in diametrical portions. The protruding collar portion of this rod or tube receives another tube or rod in abutment thereto that has a peripheral collar cut away in diametrically opposite portions so that they receive the protruding portions of the other members collar. In the protruding portions, there are cutaway portions that receive keeper pieces. The tubes or rods are of ferrous material and the keepers fitting in the cutaway portions are magnetic pieces and are held in place by magnetic attraction. There are suitable voids in the collar portions that provide for the insertion of a tool so as to pry one member away from another member as may be necessary after removal of the keepers.

3,443,828
ARTICULATED CONNECTOR
Jesse R. W. Hale, Gardena, Calif., assignor to General Connectors Corporation, Burbank, Calif., a corporation of California
Filed Dec. 15, 1966, Ser. No. 602,090
Int. Cl. F16l *27/04*; F16c *9/06, 23/00*
U.S. Cl. 285—266 6 Claims



An articulated connector for joining sections of a conduit in which a pair of journal rings of channel cross section confront opposite sides of a seal ring, the radially inner portions of the journal rings defining a cylinder to receive the cylindrical end of one conduit, the radially outer portions defining a sphere to fit within a sleeve defining a spherical wall.

3,443,829
FOLDABLE COASTER AND HANDLE DEVICE FOR USE WITH CAN-LIKE CONTAINERS
W. Carl Lohmeyer, 6318 Mossway, Baltimore, Md. 21212
Filed Jan. 17, 1967, Ser. No. 609,914
Int. Cl. A47j *45/06*; B65d *23/10*
U.S. Cl. 294—32 2 Claims



A coaster and handle device for use with cans with the handle rotatable to the plane of the coaster presenting a flat object for stacking or storage.

3,443,830
WEED PULLER AND EXTRACTOR
Jesse J. Jones, R.R. 1, Box 110, La Grange, N.C. 28551
Filed Sept. 15, 1967, Ser. No. 668,097
Int. Cl. A01b *1/16*
U.S. Cl. 294—50.7 4 Claims

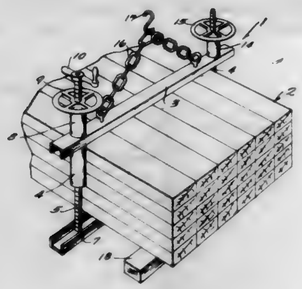
A weed puller and extractor comprising: an elongated handle; a bifurcated cylindrical head at one end of said handle; one leg of said bifurcation having one edge smoothly curved and its other edge serrated; the other leg having a smooth curved edge confronting the curved

edge of said first leg, but terminating in a hook portion approaching said smooth edge of said first leg, the other



edge of said second leg being smoothly curved and confronting the serrated edge of said first leg.

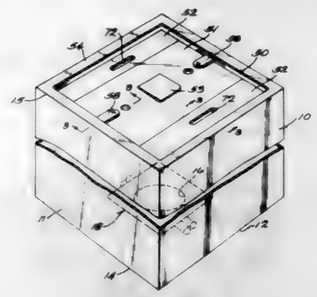
3,443,831
DEVICE FOR CLAMPING AND HANDLING ARTICLES
Howard L. Grange, P.O. Box E, Darlington, Wis. 53530
Filed Apr. 14, 1967, Ser. No. 631,069
Int. Cl. B66c *1/28;* B65g *1/20*
U.S. Cl. 294—67 9 Claims



The invention relates to a device for clamping and handling a stack of lumber or other articles. The device includes an upper arm adapted to be disposed across the upper surface of the stack and a lower arm is pivotally connected to the upper arm and is movable in a plane beneath the stack from a position at right angles to the upper arm to a position parallel to the upper arm. By drawing the parallel arms together the stack is clamped therebetween so that the stack can then be elevated and transported.

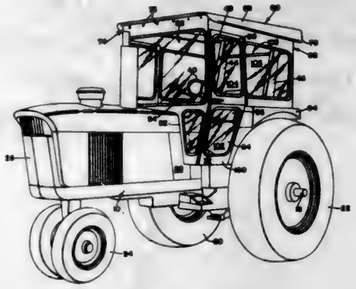
3,443,832
SELF-UNLOADING BAG
Peter J. Ehlinger, Suring, Wis., assignor to Eugene Miller, Antigo, Wis.
Filed Dec. 19, 1967, Ser. No. 691,801
Int. Cl. B66c *1/00, 3/00*
U.S. Cl. 294—71 8 Claims

A collapsible bag for use with large quantities of material handled in bulk is constructed of a heavy gauge plastic and has a bottom opening for dumping. The bottom opening is sealed by an inner flap and a pair of outer flaps which overlay the inner flap and have reinforced



edges normally secured together. The top of the bag receives a cover, and has two slots which receive lifting brackets for handling by any conventional hoist, fork lift truck etc.

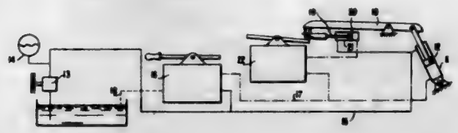
3,443,833
SAFETY ENCLOSURE FOR TRACTORS
Robert Deryl Miller, John Harold Edman, and David Hoffer Bucher, Cedar Falls, Iowa, assignors to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Mar. 10, 1967, Ser. No. 622,173
Int. Cl. B62d *25/06*
U.S. Cl. 296—102 2 Claims



A safety enclosure for the operator's station on a tractor, the enclosure including an inverted U-shaped roll bar structure encompassing the tractor seat, a cantilevered canopy attached to the roll bar structure and overlying the operator's station, and cab components removably attached to the canopy of the roll bar structure to conjunctively form a cab substantially enclosing the operator's station.

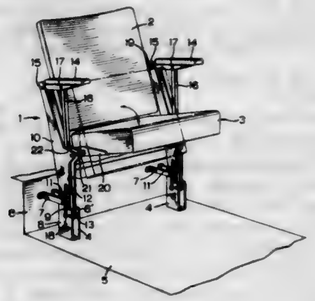
3,443,834
PRESSURE-MEDIUM-ACTUATED LOCKING MECHANISM OF COVER OR SIMILAR PARTS, ESPECIALLY OF CONVERTIBLE TOPS FOR MOTOR VEHICLES
Rudolf Andres, Sindelfingen, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Untertürkheim, Germany
Filed June 7, 1967, Ser. No. 644,394
Claims priority, application Germany, June 7, 1966, D 50,264
Int. Cl. B60j *7/18*
U.S. Cl. 296—121 25 Claims

A locking arrangement, actuated by a pressure medium, for cover and similar parts, especially for convertible tops in motor vehicles, in which the working piston adapted to raise or lower the convertible top is supplied continuously with a pressure medium on the smaller piston surface of its double-acting piston from a source of hydraulic pressure medium, while a pressure-medium switch is adapted to selectively connect the larger piston surface of the working piston either with the source of pressure or a discharge connection, depending on whether the top is to be raised or lowered, and in which the pressure line supplying the smaller piston surface of the working piston is also in constant communication with the smaller piston surface of the double-acting closure piston whose larger piston surface is adapted to be connected with the pressure line leading to the larger piston surface of the working piston by means of a further hydraulic switch, which itself is automatically actuated by a part of the locking mechanism. The latching and locking mechanism itself may be secured and/or accommodated within a U-shaped rail which is fastened to a part of the top and accommodates the cylinder containing the closure piston whose piston rod is connected to a wedge-shaped latching mem-



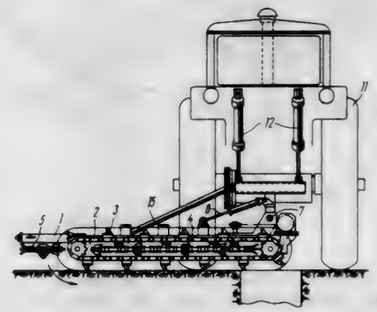
ber adapted to engage in an eye or lug of the convertible top, itself adapted to pass through an aperture of appropriate shape provided in the rail. The switch controlling the supply of pressure medium to the larger surface of the closure piston is automatically controlled in such a manner that upon engagement of the eye or lug through the elongated aperture, the pressure medium is supplied to the larger piston surface so as to cause engagement of the latching member with the eye or lug; however, during opening or lowering of the top, the switch actuating lever for the hydraulic switch of the closure piston is held in the pre-existing condition for the most part of the stroke of the closure piston so that the discharge connection now effective on the larger piston surface of the working piston is also effective on the larger piston surface of the closure piston, and this switch lever is shifted only in the last part of the stroke of the closure piston.

3,443,835
COLLAPSIBLE CHAIR
Josef H. Brunskole, Rexdale, Ontario, Canada, assignor to Canadian Seating Company Limited, Toronto, Ontario, Canada
Filed Jan. 23, 1968, Ser. No. 699,882
Int. Cl. A47c *4/04*
U.S. Cl. 297—35 7 Claims



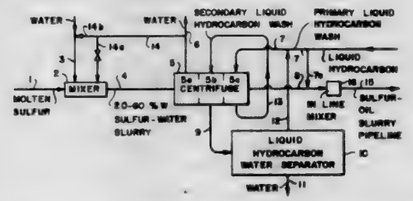
The frame structure of a collapsible or folding seat includes a pair of side members which are pivotally connected to a pair of floor-mounted anchoring members, and locking means operable by the arm-rests of the seat are engageable with the anchoring members for locking or securing the seat in its erect position.

3,443,836
MATERIAL HANDLING DEVICE FOR BACK-FILLING COMPRISING PERPENDICULAR CONVEYORS
Illarion Semenovich Poltavtsev, Zoologicheskaya ul., 4–a, kv. 72, Kiev, U.S.S.R; Anatoly Grigorievich Smiryagin, Prospekt Mira, 120, kv. 239, Moscow, U.S.S.R.; Viktor Vasilievich Protsenko, Novo-Okruzhnaya ul., 38, kv. 81; Vasily Eliseevich Shvedov, Zoologicheskaya ul., 4–a, kv. 79; Ljubov Martynova Zgurskaya, ul. Scherbakova, 57 "B," kv. 37; Igor Fedorovich Lyakhovich, ul. Ryleeva, 6, kv. 1; Efim Izrailevich Rutberg, ul. Artema, 29, kv. 5; and Nikolai Alexandrovich Borovik, ul. Ivanovskaya, 6, kv. 2, all of Kiev, U.S.S.R.
Filed Feb. 13, 1967, Ser. No. 615,604
Int. Cl. E02f *5/06;* B65g *65/06*
U.S. Cl. 299—36 2 Claims



An operating element of a machine for backfilling trenches comprising two continuous chains, mounted on a frame and disposed in mutually perpendicular planes in such a manner that one of them travels within the closed contour of the other one. The horizontal chain is provided with special rippers, and the vertical one with scrapers. The first chain is used for loosening soil, and the second for conveying soil to the trench. The operating element is mounted on a vehicle and the chains are driven through a reduction gear, mounted on the operating frame, from the power take-off shaft of a vehicle.

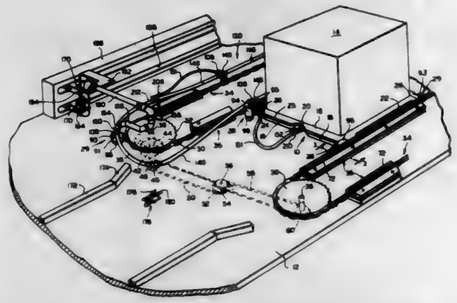
3,443,837
PROCESS FOR TRANSPORTING SULFUR THROUGH PIPELINES
Frank L. Meyer, Lewis Philip Reiss, and Paul E. Titus, Houston, Tex., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Aug. 28, 1967, Ser. No. 663,755
Int. Cl. B65g *53/30*
U.S. Cl. 302—14 7 Claims



An improved method of transporting sulfur slurries through pipelines and recovering the sulfur at the terminal station of the pipeline.

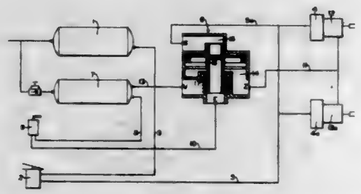
The invention relates to an improved and novel process for transporting sulfur through a pipeline. More particularly, the invention is directed to the preparation of a sulfur slurry and by phase transferring sulfur from a sulfur non-wetting liquid to a sulfur-wetting liquid for pipeline transportation of such sulfur-wetting liquid slurries over great distances and recovering pure sulfur from the liquid at a terminal station.

3,443,838
PALLET CONVEYOR ARRANGEMENT
Richard R. Jung, Battle Creek, Mich., assignor to Clark Equipment Company, a corporation of Michigan
Filed May 4, 1967, Ser. No. 636,145
Int. Cl. B65g *53/02, 7/06*
U.S. Cl. 302—29 **17 Claims**



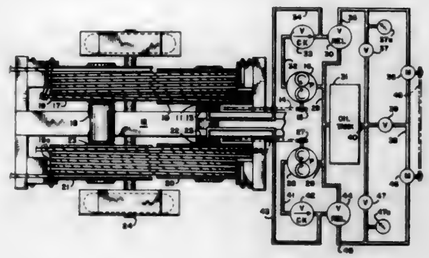
A arrangement for effecting movement of material handling pallets having inflatable fluid pressure pads thereon along a support surface, including a pair of movable endless conveyor chains, guide members supported in spaced relation on the conveyor chains and movable therewith to engage pallets for movement along the support surface, and fluid pressure supply conduit means operatively associated with one of the conveyor chains to supply fluid pressure to the inflatable pads of the pallets as they are moved along the support surface by the guide members.

3,443,839
FLUID PRESSURE BRAKING APPARATUS COMBINED WITH SPRING-APPLIED BRAKING APPARATUS
Horst Hinrichs and Walter Mensing, Hannover, Germany, assignors to Westinghouse Bremsen- und Apparatebau, G.m.b.H., Hannover, Germany
Filed Feb. 8, 1968, Ser. No. 704,125
Claims priority, application Germany, Feb. 16, 1967, W 43,373
Int. Cl. B60t *13/74, 15/16;* **B61h** *13/08*
U.S. Cl. 303—2 **2 Claims**



A fluid pressure service braking apparatus for vehicles and an auxiliary spring-applied braking apparatus interconnected by a relay valve device to provide independent or simultaneous actuation of the service brake apparatus and the auxiliary brake apparatus and, at the same time, prevent such apparatus from additively exceeding the full braking effect of the service brake, thereby minimizing the possibility of wheel lock due to excessive braking force.

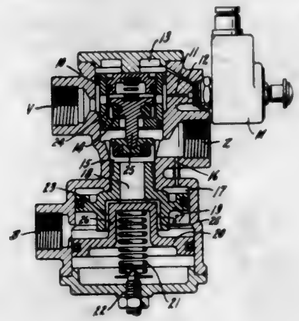
3,443,840
BRAKE CONTROL FOR CABLE-TENSIONING APPARATUS
Robert W. Goode, Rte. 1, Box 112A, Morgan Hill, Calif. 95037
Filed July 24, 1967, Ser. No. 655,540
Int. Cl. B60t *13/18, 13/74*
U.S. Cl. 303—11 **6 Claims**



A cable tensioning system provided with two or more sets of brakes, each set of brakes being associated with a set of bull wheels, and each set of bull wheels drives a fixed displacement pump which furnishes hydraulic pressure to the brakes associated with the driving wheels and also discharges to a fixed displacement hydraulic motor. A motor is associated with each set of bull wheels and all motors are of matched displacement. The motors are connected by mechanical means so that if one motor is driven by hydraulic pressure it drives the other motors which, in turn, reduce the fluid pressure on the bull wheel brakes associated therewith. The hydraulic lines from all of the motors are also connected together and through a main control valve to the oil supply tank. The hydraulic lines between each pump and motor are connected to an auxiliary control valve.

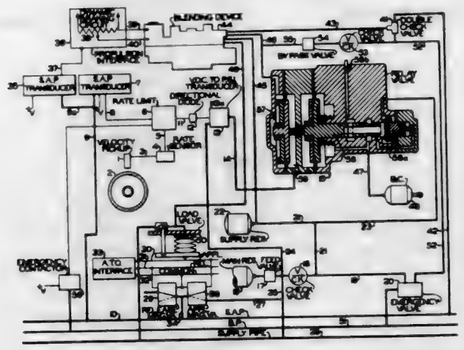
3,443,841
COMPRESSED AIR BRAKE SYSTEM FOR A TRAILER HAVING A MAGNETIC PERMANENT BRAKE VALVE
Werner Kobnick, Heidelberg, Germany, assignor to Berg Mfg. & Sales Co., a corporation of Illinois
Filed Dec. 15, 1966, Ser. No. 601,954
Claims priority, application Germany, Dec. 17, 1965, B 85,029
Int. Cl. B60t *7/00, 13/70, 15/14*
U.S. Cl. 303—15 **4 Claims**

A permanent brake valve for delivery of the greater of a constant permanent braking pressure and a variable service braking pressure to the brake cylinders of a motor vehicle trailer, including, a housing formed with a first inlet, a second inlet, and an outlet; a hollow valve piston having openings communicating the first inlet and the outlet; a double-ended valve having a first end adapted to close one of the valve piston openings and a second end adapted to engage a weigh piston and close a passage formed in the weigh piston which communicates the second inlet with the outlet; a solenoid actuated valve operative to direct pressure at the first inlet to one side of the valve piston to move the valve piston in a direction which causes the second end of the double-ended valve to engage the weigh piston; a spring operative to exert a force on the weigh piston to urge the weigh piston toward



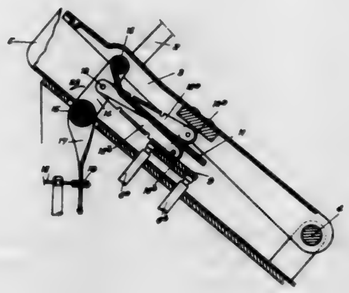
engagement with the double ended valve; and a third piston interposed between the weigh piston and the spring and forming a chamber with a weigh piston which communicates with the second inlet.

3,443,842
AUTOMATED CONTROL OF RAILWAY BRAKE EQUIPMENT HAVING DYNAMIC AND AIR BRAKING
Jerome R. Pier, Export, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania
Filed Oct. 27, 1966, Ser. No. 590,037
Int. Cl. B60t *8/08, 13/66*
U.S. Cl. 303—20 **15 Claims**



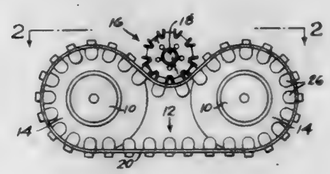
A brake control system utilizing a closed-loop feedback scheme including dynamic braking means, pneumatic braking means, load compensating means, braking feedback means and blending means to control brake signals for regulating brake shoe force to maintain a regulated retarding force in accordance with the vehicle rate of retardation, vehicle load and the degree of dynamic braking, effective to provide consistent stop distance for any specific brake application automatically. A modification utilizes load cells measuring retarding torque force on the brake shoe hangers instead of utilizing vehicle rate of retardation.

3,443,843
BRAKING APPARATUS
Jean Georges Cadiou, Paris, France, assignor to Societe Anonyme Andre Citroen, Paris, France
Filed Mar. 13, 1967, Ser. No. 622,782
Claims priority, application France, Mar. 15, 1966, 53,544
Int. Cl. B60t *8/18, 13/00*
U.S. Cl. 303—22 **3 Claims**



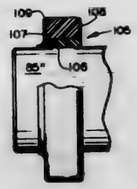
Vehicle braking apparatus including a brake force distributor having a floating balance rod, has an arrangement to vary the point of application of a brake actuator on the floating balance rod using a roller assembly to eliminate any sliding action.

3,443,844
SELF-CLEANING TRACK AND DRIVE ASSEMBLY FOR TRACK-LAYING VEHICLES
Richard H. A. Schoonover, Albany, Oreg., assignor to Katrak Vehicle Company, Albany, Oreg., a corporation of Oregon
Filed Aug. 15, 1967, Ser. No. 660,824
Int. Cl. B60s *1/62;* **B62d** *25/16, 55/08*
U.S. Cl. 305—13 **4 Claims**



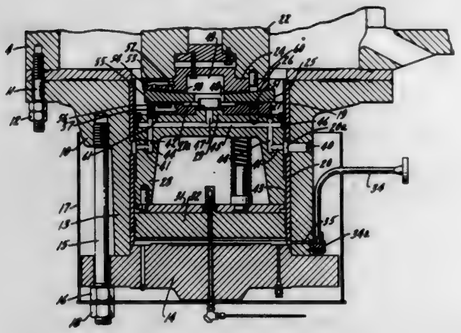
Each of the transverse lugs of a track member has a drive sprocket engaging section which includes an elongated base plate supporting a pair of longitudinally spaced spaced sprocket tooth engaging members projecting outwardly from opposite side edges thereof and interconnected by an angular connecting plate, and an inclined floor plate extending from the outer end of each engaging member toward the opposite edge of the base member. These engaging members are adapted to be engaged by sprocket teeth projecting in opposite directions from a rotary drive sprocket disc member. Debris collected by the track is removed from between adjacent lugs by reverse flexing of the track as it moves around track mounting wheels and around the drive sprocket, and also is removed over the inclined floor plate as the sprocket tooth engages the associated engaging member.

3,443,845
COMPOSITE MOLDED PLASTIC ARTICLES AND THE METHOD FOR PRODUCING SAME
David L. Walchle, Milan, Mich., Raymond A. Hudson, Albany, Ga., and Stephen A. Sekulich, Clarkston, Mich., assignors to The Mather Company, Toledo, Ohio, a corporation of Ohio
Filed June 27, 1966, Ser. No. 560,661
Int. Cl. F16c *17/00, 21/00, 29/00*
U.S. Cl. 308—3.5 **15 Claims**



A preformed tetrafluoroethylene resin part to which a different plastic is directly molded and bonded to form a rigid backing or housing means for the tetrafluoroethylene resin part. One example of such an article is an annular lip seal assembly in which the lip part is a flexible preformed tetrafluoroethylene ring and the backing or housing therefor is a phenolic plastic annulus molded directly to one or more surfaces of said ring.

3,443,846
BEARING SUPPORT FOR A CRUSHER AND THE LIKE
Rudolph J. Gasparac and Helmut Peters, Milwaukee, Wis., assignors to Nordberg Manufacturing Company, Milwaukee, Wis., a corporation of Wisconsin
Filed July 5, 1967, Ser. No. 651,277
Int. Cl. H02k *17/10*
U.S. Cl. 308—172 **6 Claims**



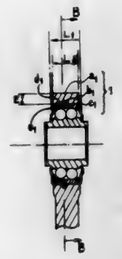
The invention relates to supporting means for the lower end of the shaft of a gyratory crusher and to lubricating means for such supporting means. The crusher shaft is supported at its lower end on a step bearing which may be upwardly or downwardly adjusted, the upper end of the shaft being slidable, or axially movable, in a top bearing. In the structure described and claimed herein the shaft is adjusted along its axis by a cylinder and piston structure. The piston is raised, lowered or positioned by a body of liquid delivered to the cylinder at a level beneath the piston. The invention relates primarily to the supply of lubricating and cooling oil to the bearing surface of the bottom of the crushing shaft and to the supporting and adjusting assembly therefor.

3,443,847
OFFSET WELDED RETAINER RINGS AND BEARINGS
Thorn W. Dickinson, Berlin, Conn., assignor, by mesne assignments, to Textron, Inc., Providence, R.I., a corporation of Delaware
Filed Dec. 29, 1966, Ser. No. 605,681
Int. Cl. F16c *19/20, 33/38*
U.S. Cl. 308—201 **1 Claim**



This invention relates to the retainer elements in a bearing. Two retainer rings are joined to each other between rolling elements substantially along the edges.

3,443,848
DEVICE FOR FIXING A CYLINDRICAL PART IN ITS HOUSING
René Philippot, Chatenay-Malabry, Hauts-de-Seine, and Maurice Richard, Essonne, France, assignors to Nord-Aviation Societe Nationale de Constructions Aeronautiques, Paris, France, a joint-stock company of France
Filed Oct. 24, 1966, Ser. No. 588,881
Claims priority, application France, Nov. 5, 1965, 37,520
Int. Cl. F16c *33/30*
U.S. Cl. 308—236 **4 Claims**



A device for assembling and fixing a cylindrical part in a housing utilizing a groove in the periphery of the part to be fixed opposite a groove in the internal surface of the housing with a wire in the grooves and attached through a lateral channel in the support.

3,443,849
JOURNAL LUBRICATOR
Robert V. Panaia, Pittsburgh, Pa., and Robert W. MacDonnell, Crete, Ill., assignors to Unity Railway Supply Co., Inc., a corporation of Illinois
Filed Feb. 23, 1967, Ser. No. 618,042
Int. Cl. B61f *17/08;* **F16n** *7/12*
U.S. Cl. 308—243 **5 Claims**

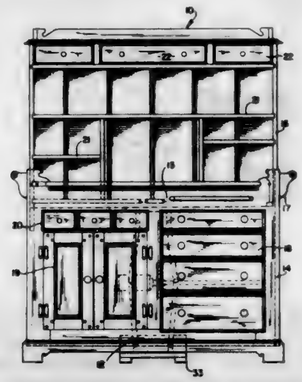
A journal lubricator having a pair of overlapping

fabric panels stitched together to provide a center pocket bordered by side pockets. A separate resilient core is



provided in each pocket and the center pocket has double ply fabric covering the top and bottom of its core.

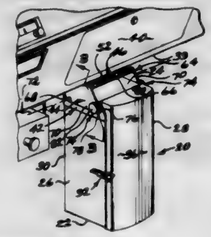
3,443,850
LIFT MECHANISM FOR STRUCTURAL COMPONENTS
Marie J. Scimé, 77 N. Maple Ave., East Orange, N.J. 07017, and William W. Lauber, 280 Kent Place Blvd., Summit, N.J. 07901
Filed Mar. 27, 1967, Ser. No. 626,183
Int. Cl. A47b *51/00*
U.S. Cl. 312—223 **5 Claims**



The present invention relates to a lift mechanism for furniture having a segment capable of being elevated with respect to the main body thereof, wherein the lifting mechanism is comprised of spaced links having a motor driven actuating member disposed between the links for elevating and lowering the said segment.

3,443,851
EASY-TO-MOUNT AND EASY-TO-DISMOUNT STORAGE CONTAINER
Dallas W. Earl, 3216 La Clede Ave., Los Angeles, Calif. 90039
Filed Jan. 5, 1968, Ser. No. 695,906
Int. Cl. A47b *43/00;* **E05b** *65/52*
U.S. Cl. 312—245 **12 Claims**

The specification discloses a storage container (which, in one preferred form, may comprise a container for a plurality of magnetically recorded tapes or cartridges, such as stereophonic cartridges or the like,although not specifically so limited in all forms of the invention), with said storage container having a means for manually mounting and dismounting same without the use of tools underneath an auxiliary supporting surface, such as a bottom edge part of a motor vehicle dashboard or instrument panel in a preferred form of the invention, although the invention is not specifically so limited in all forms thereof. The mounting means is disclosed as being adapted to mount one longitudinal form of the storage container in a vertically directed and vertically elongated orientation underneath a motor vehicle dashboard or the like, or as being adapted to mount the storage container underneath a motor vehicle dashboard or the like in a horizontally elongated and directed orientation, although the invention is not specifically so limited in all forms thereof. The specification discloses the mounting means as being of a manually engageable and disengageable type which allows the storage container to be mounted under the motor vehicle dashboard or the like very quickly and easily and to be just as easily removed when desired and without requiring the use of any tools to perform either the mounting or dismounting operation after initial installation of one portion or element of the mounting means underneath the motor vehicle dashboard. This makes it possible for a person to carry a number of valuable stereophonic or monaural type recorded cartridges or tapes within the storage container and to remove them fom the motor ve-

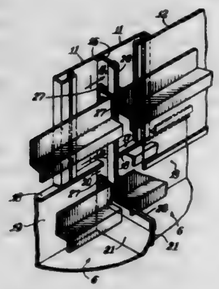


hicle when one arrives home and take them into the house for the night so that they can be played in a stereophonic or monaural tape playback unit within the house and also so as to prevent the possibility of theft of the valuable cartridges or tapes. The entire storage container carrying the cartridges or tapes can be just as quickly and easily remounted in the morning so that they will be available to be played by a playback unit in the motor vehicle during the day. The specification discloses one preferred form of the apparatus as being provided with locking means for locking the storage container against the normal easy removal thereof and for locking an access door into the storage container for the purpose of preventing theft of the entire storage container and/or individual cartridges or tapes therefrom. The mounting means is also disclosed as being provided with angular adjustment means adapted to compensate for the fact that the bottom edge of the dashboard or instrument panel of various different motor vehicles may be inclined at different angles and, thus, have different angular deviations from a true horizontal plane, which can be fully corrected and compensated for by the angular adjustment means so as to cause the depending underlying storage container to be positioned in a desired orientation (usually in a vertical plane).

3,443,852
DISHWASHING MACHINE TRACK SECTIONS AND MOUNTING MEANS THEREFOR
Chester J. Binks, La Grange, and Casimer Janiszewski, Chicago, Ill., assignors to G. S. Blakeslee & Co., Cicero, Ill., a corporation of Delaware
Filed Nov. 16, 1966, Ser. No. 594,784
Int. Cl. A47b *88/00;* **B08b** *3/00;* **F16c** *17/00*
U.S. Cl. 312—350 **10 Claims**

This invention relates to dishwashing and analogous

machines and has to do with track sections for such

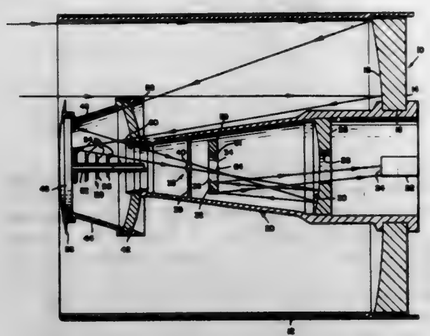


machines and means for removably and replaceably mounting the tracks sections.

3,443,853
OPTICAL SYSTEM FOR DETERMINED AREA RADIATION SCANNING

Marion N. Todd, Jr., Santa Monica, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Dec. 2, 1966, Ser. No. 598,839
Int. Cl. G02b *17/06*
U.S. Cl. 350—55 9 Claims



The disclosed optical system incorporates a primary reflecting mirror, a secondary focus and optically interposed field stop and aperture stop arrangement. A folding mirror and a secondary reflecting mirror are appropriately mounted on a central supporting structure and the entire arrangement is constructed to be radiation absorbing whereby only a determined field of view is focused at the secondary focus and unwanted specular and diffuse radiation is efficiently eliminated. As a result accurate detection of very faint radiation sources over the field of view is achieved.

3,443,854
DIPOLE DEVICE FOR ELECTROMAGNETIC WAVE RADIATION IN MICRON WAVELENGTH RANGES

Herbert Weiss, Nuremberg, Germany, assignor to Siemens Aktiengesellschaft, Erlangen, Germany, a corporation of Germany

Filed June 25, 1964, Ser. No. 377,800
Claims priority, application Germany, June 28, 1963, S 85,922
Int. Cl. G02b *5/30, 27/28, 5/20*
U.S. Cl. 350—147 7 Claims

Dipole device for electromagnetic wave radiation below 1 mm. wavelength includes a carrier structure consisting of crystalline semiconductor material having poor electrical and magnetic conductivity and substantially transparent to wavelengths in the dipole-active range below 1 mm., the structure forming an incidence surface for the radiation, and a multitude of good conducting dipoles of less than 1 mm. length consisting of segregated aniso-

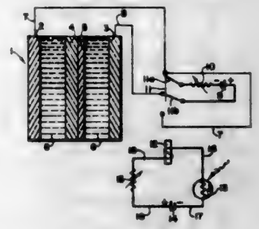


tropic inclusions of the carrier material dispersed and embedded in the material and mutually spaced in parallel relation to each other, the carrier material and the anisotropic inclusions forming a eutectic of at least one system selected from the group consisting of binary and quasi-binary systems.

3,443,855
VARIABLE POLARIZED LIGHT-FILTERING APPARATUS

Edwin H. Land, Cambridge, and Howard G. Rogers, Weston, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed Mar. 9, 1964, Ser. No. 350,250
Int. Cl. G02f *1/26;* G02b *5/30, 27/28*
U.S. Cl. 350—150 14 Claims



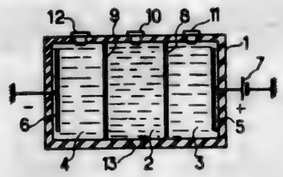
Transmission of light is controlled by a variable light-filtering device which comprises sheet material adapted when stained to form a light polarizer and means for staining and destaining the sheet material whereby a light polarizer is selectively and reversibly formed.

3,443,856
ELECTRICAL APPARATUS UTILIZING A DIELECTRIC MEDIUM

Noël Joseph Felici, 13 Rue Charles Peguy, and Georges Bernard Briére, 1 Blvd. Marechal Joffre, both of Grenoble, Isere, France

Filed Aug. 4, 1964, Ser. No. 387,286
Claims priority, application France, Aug. 12, 1963, 4,604
Int. Cl. G02f *1/26;* H01g *9/08;* B01d *13/02*
U.S. Cl. 350—150 11 Claims

A capacitive assembly or Kerr cell having three juxtaposed compartments in a fluid-tight container, the central compartment being separated from the side compartments by permeability-selective membranes which are respectively permeable to positive and negative ions. The central compartment is filled with a reasonably pure polar liquid which may be the same as or may differ from the liquid inserted in the side compartments. The liquid in the three compartments preferably is static and does not circulate. Upon the application of a high D.C. voltage across the electrodes, selective migration of positive and negative impurity ions takes place from the central compartment through the corresponding permeability-selective membranes into the side compartments, bringing

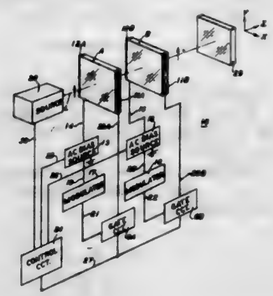


about a depletion of the impurity ions in the liquid in the central compartment thus exhibiting an extremely high dielectric constant.

3,443,857
COMPENSATED QUADRATIC ELECTRO-OPTIC MODULATOR

Peter J. Warter, Jr., Plainsboro Township, Middlesex County, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Mar. 26, 1965, Ser. No. 443,155
Int. Cl. G02f *1/26, 1/28, 1/36*
U.S. Cl. 350—150 12 Claims



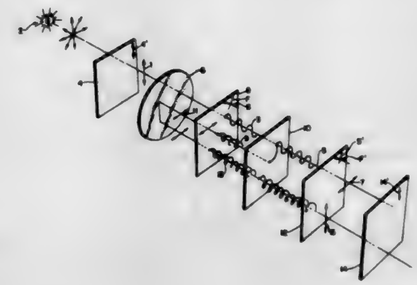
The birefringence over the plane of the incident surface of an electro-optic modulator is maintained constant by arranging first and second quadratic electro-optic crystals optically in series and applying thereto particular first and second bias signals, respectively, 90 degrees out of phase with one another. The modulator comprises the two electro-optic crystals for which the presence and absence of an information signal superimposed on the bias signals provides, respectively, rotation or no rotation of the polarization vector.

3,443,858
INFINITE OPTICAL IMAGE-FORMING APPARATUS

Joseph La Russa, Crestwood, N.Y., assignor to Farrand Optical Co., Inc., New York, N.Y., a corporation of New York

Filed Feb. 23, 1966, Ser. No. 529,416
Int. Cl. G02f *1/24*
U.S. Cl. 350—157 6 Claims

1. Image-forming apparatus comprising a beam-splitting curved mirror, a first quarter-wave plate disposed on the concave side of the curved mirror, a second beam-splitting mirror disposed on the side of the first quarter-wave plate remote from the curved mirror, a second quarter-wave plate disposed on the side of the second beam-splitting mirror remote from the first quarter-wave plate, and a polarizer disposed on the side of the second quarter-wave plate remote from the second beam-splitting mirror, the first and second quarter-wave plates having their fast axes oriented with respect to each other at

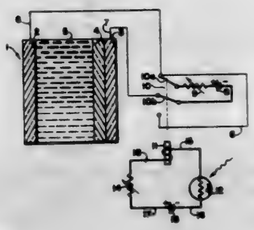


a substantially integral multiple of 90° and the polarizer having its plane of polarization oriented substantially at an odd integral multiple of 45° to the fast axis of the second quarter-wave plate.

3,443,859
VARIABLE LIGHT-FILTERING DEVICE

Howard G. Rogers, Weston, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed Mar. 9, 1964, Ser. No. 350,251
Int. Cl. G02f *1/28, 1/36;* G02b *5/24*
U.S. Cl. 350—160 13 Claims



A variable light-transmitting device is provided which comprises, in an electrolytic system, a permanently positioned non-migratory material having reversibly alterable spectral absorption characteristics and migratory means activated by the flow of an electic current capable of altering the spectral absorption characteristics of said material whereby the desired changes in optical density or spectral absorption characteristics of the device may be obtained.

3,443,860
PLEATED SHADE FOR CONTROLLING HEAT AND LIGHT

Sergius N. Ferris Luboshez, 3530 Pine Tree Terrace, Falls Church, Va. 22041

Original application June 6, 1962, Ser. No. 200,366, now Patent No. 3,257,486, dated June 21, 1966. Divided and this application Apr. 19, 1966, Ser. No. 543,636
Int. Cl. G02b *27/00;* B32b *3/28, 3/30*
U.S. Cl. 350—263 10 Claims

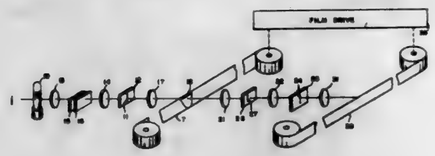
A shade which acts as a complete barrier to direct light radiation, while at the same time admitting indirect diffused light radiation and controlling the passage of heat

therethrough. The shade consists of a substantially flat pleated sheet of light-transmitting resilient material having a coating situated on certain portions of the show areas of each pleat, said coating having heat and light reflective, and heat absorbent properties, or combinations



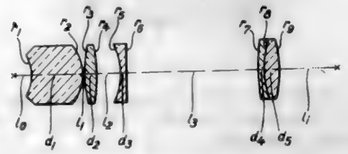
thereof, the underlay areas of each pleating being uncoated, said shade when expanded presenting a formation having coated and uncoated areas in spaced relationship.

3,443,861
PLURAL CHANNEL OPTICAL DATA PROCESSOR
Emmett N. Leith, Plymouth, Mich., assignor to the United States of America as represented by the Secretary of the Air Force
Filed June 13, 1961, Ser. No. 116,896
Int. Cl. G02b 5/18; G03b 27/02, 27/00
U.S. Cl. 350—162 5 Claims



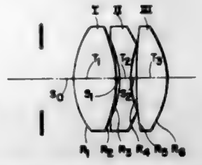
1. An apparatus for processing a signal film from an airborne coherent side-looking radar, having thereon Doppler frequency azimuth target information in a direction along the length of the film and range information across the film, comprising: said signal film, means for illuminating said signal film with monochromatic light collimated in the azimuth direction, means for moving said film through said light in the azimuth direction, a mask, means for imaging the range and azimuth information from said signal film on said mask, means located between said signal film and said mask for removing all but one of the first diffracted order images of the signal on said signal film, an output slit in said mask for sampling the light from said first diffracted order image, output means for receiving light passing said output slit, and means range direction; means located between said first mask and said film for collimating the light in the azimuth direction; a recording film; a second mask adjacent said recording film; means for imaging the range and azimuth information from said signal film on said second mask; a third mask located between said signal film and said second mask; said mask having a slit in the position of the first diffracted order images of the signal on said signal film; an output slit in said second mask for sampling the light passing the slit in said third mask; and means located within said optical system for correcting for the change of focus with range on said signal film.

3,443,862
ANASTIGMATIC MEDIUM-POWER MICROSCOPE OBJECTIVE
Walter Klein, Wissmar, Kreis Wetzlar, Germany, assignor to Ernst Leitz G.m.b.H., Wetzlar, Germany, a corporation of Germany
Filed June 25, 1964, Ser. No. 377,914
Claims priority, application Germany, July 9, 1963, L 45,293
Int. Cl. G02b 9/52, 9/60
U.S. Cl. 350—220 4 Claims



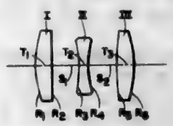
The invention is a microscope objective providing a flattened image field corrected for astigmatism and distortion The objective comprises along the axis from the object plane to the image plane a thick meniscus lens, a converging singlet lens, a divergent singlet lens and a cemented converging doublet lens. The axial distance between the divergent singlet lens and the apex of the doublet lens on the side facing the image is at least one third the distance betwen the object and said apex. The curvature of the image field is corrected by the thick meniscus lens; the two singlet lenses correct astigmatism and distortion; and the cemented doublet lens corrects the spherical aberrations and the coma.

3,443,863
TRIPLET-TYPE OBJECTIVE LENS
Paul L. Ruben, Penfield, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Jan. 23, 1967, Ser. No. 610, 882
Int. Cl. G02b 9/14
U.S. Cl. 350—226 6 Claims



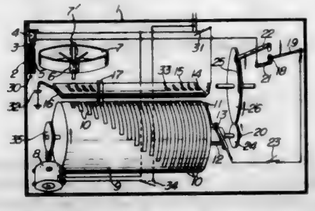
A photographic objective of the simple triplet type is disclosed which is well corrected for very high relative apertures, and is particularly suited for use in motion picture cameras.

3,443,864
TRIPLET-TYPE PROJECTION LENS
Muriel D. Ackroyd, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Jan. 23, 1967, Ser. No. 611,118
Int. Cl. G02b 9/14
U.S. Cl. 350—226 2 Claims



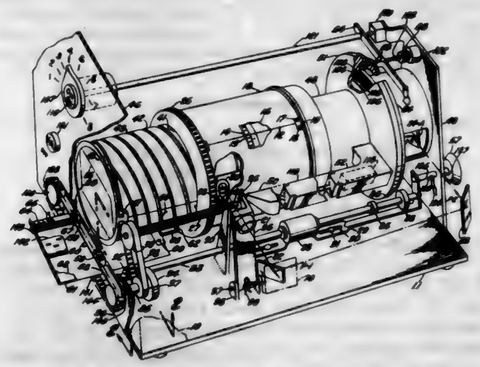
A projection lens of the simple triplet type which is particularly well corrected for lateral chromatic aberration and distortion.

3,443,865
APPARATUS FOR THE TESTING AND MEASUREMENT OF VISUAL POWER
Motoi Ishihara, 13 Shinonomecho, Hiroshima-shi, Japan
Filed Aug. 12, 1966, Ser. No. 572,012
Claims priority, application Japan, Aug. 24, 1965, 40/51,569
Int. Cl. A61b 3/02
U.S. Cl. 351—31 4 Claims



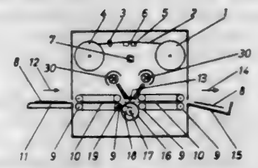
An apparatus for the testing and measurement of visual power in which a mark reading opening is provided at an upper central portion of the front wall of a casing and a shutter mechanism is disposed in the casing and is adapted to be opened by movement of an associated armature due to attraction towards an electromagnetic coil, a manually rotatable annular wheel being disposed inwardly of said shutter mechanism for detachably supporting on its outer peripheral face a plurality of equally spaced sight-testing marks, a planar counter of electrically insulating material being disposed in the casing and having a plate of conducting material on its lower face and a multiplicity of slots in suitably spaced relation in said counter and aligned with a linear main electrode extending axially on a rotatable cylinder having a multiplicity of distributing electrodes extending from said main electrode at positions directly below said slots and at right angles with respect to said main electrode, the electrodes having a length successively made longer from one end of said cylinder to the other such that a circuit is formed between the coil and a power supply including said conductive plate, a conductive plug inserted in one of the slots in the counter, the distributing electrode associated with such slot, and an electric circuit control means for intermittently causing full opening of said shutter mechanism.

3,443,866
TEACHING MACHINE
James W. Lucas, 1480 N. Doheny Drive, Los Angeles, Calif. 90069
Filed Oct. 22, 1965, Ser. No. 500,751
Int. Cl. G03b 25/02
U.S. Cl. 352—101 18 Claims



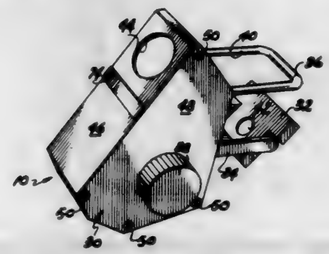
A viewer device for reading out motion or still pictorial information and auditory information recorded on flat film. A transparent rotatable cylinder is provided for supporting the recorded information, a wall of the cylinder passing between a fixed light source and fixed projection system including a rotatable prism. A sound readout head is positioned near the projection lens and can be held stationary or rotated about the axis of the cylinder. Rotation of the prism about its axis causes rotation and advancing of the cylinder in a helical path about its own horizontal axis. The device may be used as a teaching machine wherein axial location of the cylinder is effected by a tray associated therewith. The cylinder may be rotated to a selected pictorial frame by means of a stylus which in turn records the choice of frame selected. Stereoscopic pictures also may be viewed without the requirement of special glasses.

3,443,867
APPARATUS FOR ACTUATING THE CUTTER OF AN ENLARGER FOR PHOTOGRAPHICALLY PRINTING IMAGES FROM MICROFILM
Walter Scheffel, Langenfeld, Rhineland, Germany, assignor to Agfa-Gevaert Aktiengesellschaft, Munich, Germany
Filed July 15, 1966, Ser. No. 565,547
Int. Cl. G03b 27/52, 29/00
U.S. Cl. 355—29 12 Claims



A photographic apparatus for actuating a cutting device in an enlarger where a distinctive checkerboard type pattern is provided between exposed images of documents on a photo-sensitive strip. A plurality of light sensitive elements is arranged in a distinctive array so as to trigger a cutting device only when light of a particular pattern is received by the elements and the strip is cut between the images of documents.

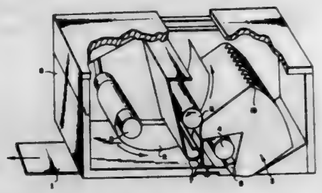
3,443,868
METHOD AND APPARATUS FOR COMPUTING COLOR BALANCE CHARACTERISTICS AND PREPARING IMPROVED COLOR PRINTS
Robert W. Mitchell, St. Joseph, Mich., assignor to Heath Company, Benton Harbor, Mich., a corporation of Delaware
Filed Aug. 10, 1965, Ser. No. 478,665
Int. Cl. G03b 27/78
U.S. Cl. 355—32 18 Claims



1. Apparatus for computing color balance in color photography by adjusting the color of projected light from a source through a known color in a masked negative comprising a housing, display means in said housing, means for applying said projected light to said display means for color adjusting purposes, and filter means in said housing between said display means and said apply-

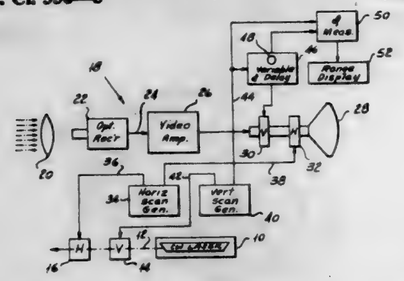
ing means, said filter means having a color characteristic which is the complement of the mask on said negative.

3,443,869
V-GROOVED OPTICAL SYSTEM
Lee F. Frank, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Jan. 12, 1966, Ser. No. 520,262
Int. Cl. G03b 27/54
U.S. Cl. 355—47 7 Claims



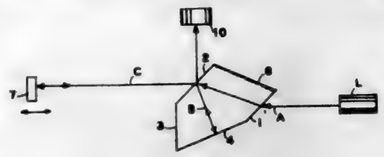
An optical device which receives light from a document plane, which can be flat or a cylindrically curved surface and located on an optical element or spaced therefrom, focuses this light onto an image surface which can also be on the optical elements or spaced therefrom and flat or curved. The optical device is particularly applicable to copiers that do not involve scanning. The device includes a 90° V-grooved reflecting surface which is effectively oblique to the optical axis so that the image formed by the grooved surface is to one side of, not superimposed on, the document plane. The grooves, which are located in planes parallel to the plane in which the image is offset from the object, image the light in a first azimuth which is at right angles to the offset image plane. Focusing of the light in a second azimuth is accomplished by having the longitudinal axes of the grooves cylindrically curved in planes parallel to the second azimuth, by having two cylindrically concave mirrors or by having a cylindrical lens, the axis of the cylinder, in each case being orthogonal to the plane in which the image is offset.

3,443,870
RANGE MEASURING SCANNING LASER IMAGING SYSTEM
Huw C. Morgan, Trumbull, and Lanny W. Sterritt, Norwalk, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Sept. 29, 1967, Ser. No. 671,696
Int. Cl. G01c 3/08
U.S. Cl. 356—5 8 Claims



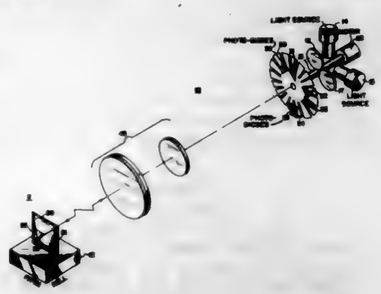
A range measuring system employs a scanning laser imaging system. The scanning signal which deflects the laser beam also deflects the electron beam of a cathode ray tube display. A variable phase delay is introduced into the cathode ray tube display scanning signal to eliminate a double image on the face of the display and thereby provide a measure of range to a target which is being scanned by the laser imaging system.

3,443,871
SINGLE OPTICAL BLOCK INTERFEROMETER MEANS
Anwar K. Chitayat, Plainview, N.Y., assignor to OPTOmechanisms, Inc., Plainview, N.Y.
Filed Dec. 7, 1965, Ser. No. 512,111
Int. Cl. G01b 9/02
U.S. Cl. 356—106 3 Claims



A single solid optical block interferometer having a plurality of external surfaces. A first surface is positioned to refract an input beam to a second surface which splits the beam into second and third beams. The second beam is internally reflected by a third surface back to the second surface. The third beam is transmitted externally to a movable reflector which reflects the beam back to the second surface to form interference fringes on said second surface.

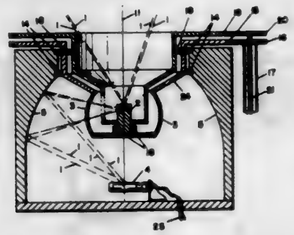
3,443,872
REMOTE OBJECT ORIENTATION MEASURING DEVICE
Donald W. Colvin, Clearwater, John C. Comeau, St. Petersburg, and Frederick Kulick, Clearwater, Fla., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Aug. 31, 1964, Ser. No. 393,165
Int. Cl. G01c 1/00
U.S. Cl. 356—147 2 Claims



Apparatus to sense the orientation of a remote member about three axes by directing two mutually orthogonal flat beams of light to an internally reflecting right angle pyramid and measuring the various reflected images with three pairs of detectors.

3,443,873
CELESTIAL DIRECTION FINDER
James S. Shreve, 2055 N. Brandywine St., Arlington, Va. 22207
Filed Feb. 7, 1964, Ser. No. 343,403
Int. Cl. G01b 11/24; G09b 27/06; H01j 3/14
U.S. Cl. 356—168 3 Claims

A device which determines direction in space relative to the stars, comprising a spherical star map opaque except for transparent lines which represent star locations; an optical means which projects an image of the stars onto the star map; a means for scanning two independent parameters which determine the alignment of the star map with respect to the image of the stars, the extension of the transparent lines eliminating the need of scanning in the third parameter; and a photoelectric means for indicating alignment of the star map and the image of the stars.

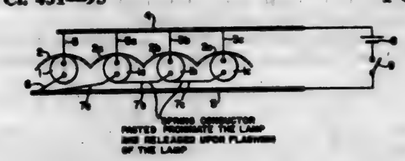


3,443,874
PACKAGE CONTAINING STICK MATERIAL
Pierre Pelli and Bruno Morane, Paris, France, assignors to L'Oreal, Paris, France
Filed Sept. 12, 1966, Ser. No. 578,608
Claims priority, application France, Sept. 13, 1965, 31,237
Int. Cl. B43k 21/00; B65d 83/00
U.S. Cl. 401—82 8 Claims



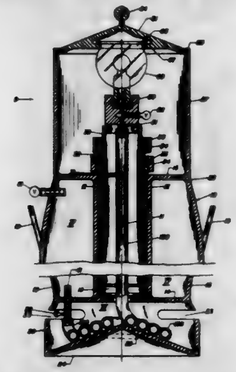
A package containing a stick material and comprising a hollow body having two open ends, a removable cover closing one of said ends and a follower slidably mounted within said body, said follower being provided with a projection extending into said hollow body and embedded in said material, which fills said package. The projection on the follower is preferably provided with re-entrant peripheral surfaces, and the follower is either provided with a hole through which a liquid material may be poured into the body, and a plug for the hole, or with means permitting the follower to be snapped into the body after the body has been filled.

3,443,875
SERIES FLASH DEVICE
Karl Herrmann, Augsburg, Germany, assignor to Patent-Treuhand-Gesellschaft fur Elektrische Gluhlampen m.b.H., Munich, Germany
Filed Oct. 4, 1966, Ser. No. 584,252
Claims priority, application Germany, Oct. 21, 1965, P 37,930
Int. Cl. F21k 5/02
U.S. Cl. 431—95 1 Claim



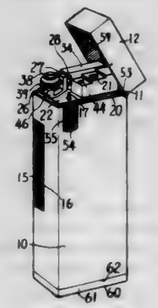
A disposable photoflash combination which provides automatic switching and allows series ignition of the lamps. The simple non-repeatable series switching mechanism associated with the lamps is activated by the heat generated upon flashing a lamp to connect the subsequent lamp to the ignition circuit.

3,443,876
PORTABLE GAS-POWERED APPLIANCE AND A FUEL STORAGE TANK THEREFOR
Edward A. Sokol, 3322 S. 122nd St., Omaha, Nebr. 68144
Filed Oct. 2, 1967, Ser. No. 672,108
Int. Cl. F21h 1/00; F21l 19/00; F23d 13/24
U.S. Cl. 431—100 6 Claims



This invention relates to a versatile gas-powered portable appliance having as an important component thereof a novel fuel storage tank. In particular this invention relates to a gas-powered appliance that is equally adapted to generate both light and heat energies, said gas-powered appliance having a generous self-contained fuel supply and several other ancillary features whereby said appliance is sufficiently compact and portable to lend itself to camping and general outdoor use.

3,443,877
GAS FUELED LIGHTER
Shirokichi Inagaki, Tokyo, Japan, assignor to Korona Kogyo Co., Ltd., Adachi-ku, Tokyo, Japan
Filed Feb. 10, 1967, Ser. No. 615,131
Claims priority, application Japan, Feb. 11, 1966, 41/11,213; June 23, 1966, 41/59,341
Int. Cl. F23q 2/16, 2/40, 2/48
U.S. Cl. 431—134 5 Claims



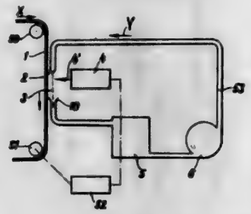
An improved gas fueled lighter of longitudinally elongated rectangular form includes a new device for releasable catch engagement between a latch and a cap is provided, said device including a die-cast block mounted in the opening of an outer casing of the lighter and provided therein with means for pressing a flint against a sparking wheel and with means for urging said wheel forward to hold the cap in closed position.

CHEMICAL

3,443,878
METHOD OF CONTINUOUSLY DYEING TEXTILE WEBS AND THE LIKE

Friedrich Weber, Zittau, Helmut Fuchs and Karl-Joachim Kummer, Gross-Schonau, Germany, assignors to VEB Halbmond-Teppiche, Oelsnitz, Vogtland, Germany

Filed Feb. 8, 1965, Ser. No. 431,129
Int. Cl. D06p *5/00*
U.S. Cl. 8—14 6 Claims



Method of and apparatus for the pattern dyeing of a substantially continuous fabric web in which a continuous stream of a liquid dyestuff is circulated along a closed path proximal to the web at a treating station and, at selected locations transversely of the web, portions of the dyestuff are deflected against the web under the control of a pattern programmer while the balance of the dyestuff continues uninterrupted along the closed path. Programmed pneumatic jets may be used to control the deflection of the circulated portions of the dyestuff stream.

3,443,879
PREPARATION OF A WEATHER RESISTANT COTTON PRODUCT BY A MOLECULAR PROTECTION PROCESS

Jett C. Arthur, Jr., and Trinidad Mares, Metairie, La., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Apr. 11, 1966, Ser. No. 541,509
Int. Cl. D06m *13/20*; C08b *3/10*
U.S. Cl. 8—120 2 Claims

1. A process for imparting to cellulosic materials resistance to weathering and high energy radiation degradation comprising:

(a) reacting the cellulosic material slack with benzoyl chloride in pyridine, about 20% by weight, for about from 8 to 25 minutes of time, at temperatures about from 65° to 110° C., to obtain a fibrous, chemically modified cellulosic derivative containing about from unit of the cellulosic material,

(b) washing the reacted material in an excessive quantity of pyridine to stop the reaction,

(c) stretching the freshly reacted and pyridine-washed material at ambient temperatures to about from 80% to 90% of the material's original dimensions, and

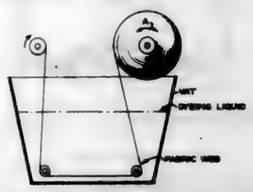
(d) washing the reacted material while the material remains at the desired stretch tension with pyridine, with methanol, and finally with water.

3,443,880
JIGGER

Hans Borge Nielsen, Virum-Copenhagen, Denmark, assignor to Vald Henriksen A/S, Soborg-Copenhagen, Denmark

Filed Sept. 23, 1966, Ser. No. 581,634
Claims priority, application Denmark, Sept. 23, 1965, 4,894/65
Int. Cl. D01c *1/02*; D01d *1/00*
U.S. Cl. 8—150 2 Claims

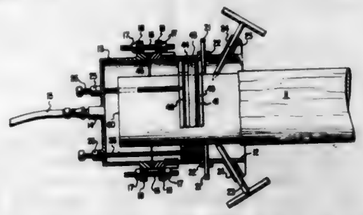
A jigger for the treatment of fabric webs in which the web is passed through a liquid in a vat by being alternately wound and unwound on two main rollers. An oscillating, pendulous movement is produced on the roller on which the web is being wound, at periodic intervals corresponding to at least one revolution of the slower rotating roller. The frequency of the oscillating movement is increased when the material on the winding roller reaches a prescribed amount, while the speed of revolution of the winding roller is decreased.



3,443,881
METHOD AND APPARATUS FOR LONGITUDINALLY IMPREGNATING WOOD

Monie S. Hudson, Box 2451, Spartanburg, S.C. 29302

Filed May 6, 1966, Ser. No. 548,187
Int. Cl. B27k *3/08*
U.S. Cl. 21—7 22 Claims



1. A process for the impregnation of the interior of a length of wood including a log, a pole and the like comprising positioning one end of said length of wood in a treatment zone, introducing a first liquid into said treatment zone to cause the liquid to enter the end of said length of wood, cutting said end of the length of wood to remove a relatively thin disc of wood therefrom, and then introducing a treating liquid into the treatment zone at a pressure sufficient to cause the treating liquid to enter the end of said length of wood and impregnate said length, said treating liquid flowing through said length of wood at a substantially greater rate than did said first liquid.

3,443,882
TREATMENT OF EARTH SURFACE AND SUBSURFACE FOR PREVENTION OF ACIDIC DRAINAGE FROM THE SOIL

James P. Flynn, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

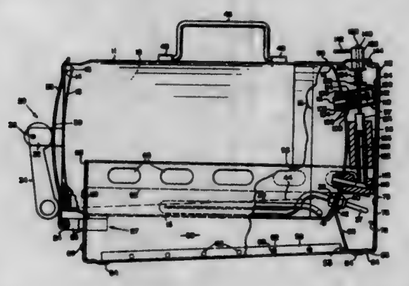
No Drawing. Filed Mar. 14, 1966, Ser. No. 533,835
Int. Cl. C23f *15/00*; E21b *43/00*
U.S. Cl. 21—58 5 Claims

A method of lessening the rate and the extent to which sulfur compounds, e.g. pyrite and marcosite, are converted into corrosive acids which comprises applying a pulverized phosphate on the surface and/or admixing it with the top soil and rock material having sulfur-containing components therein which are contacted by water and especially which are also exposed to air especially in the presence of bacteria which accelerate the oxidation of the sulfur-containing component.

3,443,883
PORTABLE STERILIZER

Richard D. Castle, Rochester, N.Y., assignor to Sybron Corporation, a corporation of New York

Filed Oct. 22, 1965, Ser. No. 501,590
Int. Cl. A61l *3/00*
U.S. Cl. 21—93 15 Claims

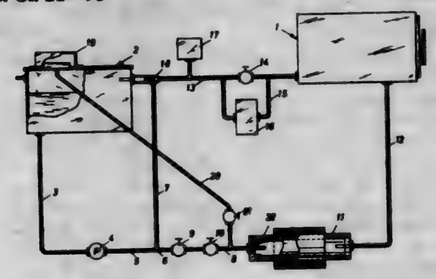


A portable pressure vessel such as a steam sterilizer which can be heated either by an electrical heater adjacent the vessel or by means of the flame of an open fire and including means for channelling the flame of an open fire onto the sterilizer vessel and a support connected to and spaced a predetermined distance below the vessel and which can be placed in direct contact with the fire.

3,443,884
HEATED STERILIZING APPARATUS UTILIZING A PRESSURE-TIGHT VESSEL

Fritz Linder, Skarhamn, Sweden

Filed Sept. 13, 1965, Ser. No. 486,910
Claims priority, application Sweden, Sept. 29, 1964, 11,672/64
Int. Cl. A61l *3/00*
U.S. Cl. 21—93 7 Claims



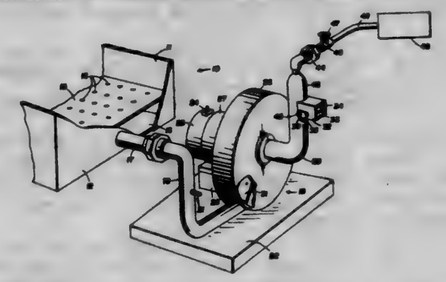
Apparatus for sterilizing articles, including a pressure-tight vessel connected in a series with a liquid supply container, a liquid feeding pump, a vaporizing device, and an evacuation pump. A source of air is connected to the sterilizing device to supply preheated air to the pressure vessel. Suitable valving allows selective control of the operating cycle of the apparatus.

3,443,885
DEVICE FOR PASTEURIZING SOIL

Nicholas A. Scholtus, 127 Patricia Lane NW., Cedar Rapids, Iowa 52405

Filed Mar. 28, 1966, Ser. No. 537,739
Int. Cl. A61l *3/00*
U.S. Cl. 21—94 8 Claims

Apparatus for pasteurizing soil and then rapidly cooling it comprising a container with a false bottom into which soil to be pasteurized is placed and with a mixture of steam and air supplied to the space between the false bottom and the bottom of the container through a conduit that has a temperature sensing means. An impeller receives steam and air and the temperature into the pasteurizer is controlled so as to be about 155° F. to kill harmful substances while not injuring the desirable substances. After the temperature of the soil has reached 155° F. the steam input to the impeller may be turned off and the soil coiled by passing cool air from the impeller up through the soil. Thus, the soil may be very quickly pasteurized and cooled to allow rapid processing.



3,443,886
EXHAUST GAS TREATMENT

William F. Taylor, Scotch Plains, John H. Sinfelt, Berkeley Heights, and William F. Biller, East Brunswick, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed June 11, 1965, Ser. No. 463,188
Int. Cl. C01b *2/30*; B01d *47/00*
U.S. Cl. 23—2 5 Claims

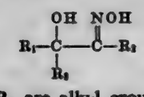
Exhaust gases are contacted with a material comprising calcium, sodium and silica prior to contact with an equilibration catalyst in order to prevent or materially reduce the poisoning of the catalyst.

3,443,887
RECOVERY OF PENTAVALENT VANADIUM VALUES FROM AQUEOUS SOLUTIONS USING α-HYDROXY OXIMES

Ronald R. Swanson, New Hope, Minn., assignor to General Mills, Inc., a corporation of Delaware

No Drawing. Filed June 1, 1967, Ser. No. 642,730
Int. Cl. C22b *55/00*; C01c *1/00*
U.S. Cl. 23—22 15 Claims

Pentavalent vanadium values are recovered from aqueous solutions by contacting such solutions with a liquid organic phase containing an α-hydroxy oxime of the idealized formula:



where R_1, R_2 and R_3 are alkyl groups of 1 to about 14 carbon atoms, R_1 and R_2 are attached to the hydroxyl substituted carbon atom through primary carbon atoms and the oxime contains a total of 8 to about 44 carbon atoms. The pentavalent vanadium values can be stripped from the organic phase by aqueous stripping solutions and then recovered from such stripping solutions.

3,443,888
PRECIPITATION METHOD

John H. Calbeck, Box 946, Pratt, Kans. 67124

Filed Jan. 16, 1964, Ser. No. 338,244
Int. Cl. C01g *9/08*
U.S. Cl. 23—56 25 Claims

In a method of continuous precipitation, reactants

forming a water soluble salt and a precipitate are added to a hot saturated solution of said water soluble salt, the resultant mixed salts are removed and separated.

3,443,889

METHOD OF SYNTHESIS OF ALKALI METAL SALTS

Warren E. Clifford, San Francisco, Calif., assignor to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware

No Drawing. Filed Aug. 17, 1964, Ser. No. 390,230
Int. Cl. C01d 7/16, 7/28
U.S. Cl. 23—64 12 Claims

1. Process for preparing an alkali metal salt from an alkali metal chloride and an acid of the group consisting of carbonic, acetic, nitric, phosphoric, sulfuric and sulfurous acids comprising

(a) preparing a water phase solution of said alkali metal chloride and admixing said water phase, said acid and a water-immiscible organic liquid phase consisting essentially of a water-immiscible, primary alkyl amine containing from 8 to 22 carbon atoms and a water-immiscible liquid organic solvent therefor,

(b) extracting hydrogen ion and chloride ion into the organic phase by agitating the mixture to maintain intimate contact between the phases during the reaction.

(c) separating the organic liquid phase containing the hydrochlorides of the amine from the remainder of the mixture,

(d) regenerating the amine from the hydrochloride of the amine by treating the organic liquid phase with an alkaline reagent,

(e) recycling the organic liquid phase back to contact with replenished starting materials, and

(f) separately recovering said remainder of said mixture and recovering said alkali metal salt therefrom.

3,443,890

PROCESS FOR THE PRODUCTION OF CALCIUM CARBONATE

Cecil G. Sisson and James L. Foster, Painesville, and Clyde B. Myers, Mentor, Ohio, assignors to Diamond Shamrock Corporation, a corporation of Delaware

No Drawing. Filed Dec. 5, 1966, Ser. No. 598,958
Int. Cl. C01f 11/18
U.S. Cl. 23—66 5 Claims

The present invention relates to a process whereby particles of precipitated calcium carbonate of extremely small particle size are obtained by carbonation with carbon dioxide of an aqueous calcium hydroxide suspension containing from 40 to 150 grams $Ca(OH)_2$ per liter within a temperature range of 20° to 75° C. in the presence of a combination of additive ingredients. These additives include a combination of (1) from 0.2 to 5 percent, by weight of a monosaccharide, disaccharide or monocarboxylic polyhydroxy alcohol with (2) from 0.2 to 5 percent, by weight of SiO_2, in an active form, or solubilized starch. The resultant calcium carbonate product is especially useful as a reinforcing filler for rubber and synthetic elastomers.

3,443,891

METHOD AND APPARATUS FOR GROWING LARGE MONOCRYSTALS OF NONMETALLICS

Earl F. Nichols, Andersonville, Tenn., and Kenneth H. Ivey, Adelphi, and Haskiel R. Shell, Langley Park, Md., assignors to the United States of America as represented by the Secretary of the Interior

Filed June 6, 1966, Ser. No. 556,807
Int. Cl. C01b 33/24
U.S. Cl. 23—110 8 Claims

An arc furnace melts a small furnace charge of mica-producing material, after which the furnace electrodes are immersed in the melt. As more mica-producing material is charged to the furnace on top of the melt, the electrodes are slowly, continuously raised through the



charge to melt the same and establish a thermal gradient along which mica crystals will grow. A cover of unmelted charge is continuously maintained on top of melted charge to prevent the loss of volatile constituents.

3,443,892

PROCESS FOR PRODUCING CRYSTALLINE ZEOLITES

Klaus Wacks, Friedrichsdorf, Taunus, and Helga Burger, Waldbrol, Germany, assignors to Gebruder Herrmann, Cologne-Ehrenfeld, Germany, a corporation of Germany

No Drawing. Filed Apr. 4, 1967, Ser. No. 628,260
Claims priority, application Germany, Apr. 15, 1966, H 59,125
Int. Cl. C01b 33/28; B01j 1/04
U.S. Cl. 23—113 8 Claims

This specification discloses a novel method of making synthetic zeolites, particularly zeolites of the X type. In this method, the reactants, an aqueous solution of a sodium silicate and hydrous, gel-like aluminum phosphate, are individually or singly brought to an elevated temperature and then admixed. As opposed to being heated as in the prior art, the reaction mixture is initially at the reaction temperature and is permitted to cool for a period of time sufficient to produce the appropriate zeolite crystalline configuration. The proportions of reactants are extremely important—the ratio SiO_2 to Na_2O must be no greater than 1.

3,443,893

RECOVERY OF COPPER AND CYANIDE VALUES FROM CUPROUS CYANIDES

Arthur O. Rogers, Lewiston, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 427,489, Jan. 22, 1965. This application May 16, 1968, Ser. No. 729,589
Int. Cl. C01g 3/10
U.S. Cl. 23—125 5 Claims

Copper and cyanide values are recovered from cuprous cyanide, which is isolated in extracting copper from a copper-bearing ore, by reacting the cuprous cyanide with aqueous sulfuric acid and free oxygen in the presence of a catalytic amount of chloride ions to form cupric ion and liberate hydrogen cyanide.

3,443,894

PROCESS FOR PRODUCING KAPPA ALUMINA

Walter H. Gitzen, Belleville, Ill., and Leroy D. Hart, St. Louis, Mo., assignors to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Aug. 30, 1966, Ser. No. 575,968
Int. Cl. C01f 7/00
U.S. Cl. 23—142 5 Claims

Mixing a siliceous material and aluminum fluoride with particles of alumina trihydrate and heating the resultant mixture at a temperature of 1100° to 1275° C. to convert the alumina trihydrate to kappa alumina.

3,443,895

PROCESS FOR PRODUCING KAPPA ALUMINA

Walter H. Gitzen, Belleville, Ill., and Leroy D. Hart, St. Louis, Mo., assignors to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Aug. 30, 1966, Ser. No. 575,977
Int. Cl. C01f 7/00
U.S. Cl. 23—142 4 Claims

Mixing a siliceous material with particles of alumina trihydrate and heating the resultant mixture at a temperature of 950° to 1100° C. to convert the alumina trihydrate to kappa alumina.

3,443,896

CATALYTIC METHOD FOR THE RECOVERY OF SULPHURIC ACID IN A PLURALITY OF CONTACT-AND-ABSORPTION STEPS

Herbert Furkert, Grosskonigsdorf, Friedrich Mahler, Cologne-Nippes, Heinrich Peters, Lovenich, and Adolf Stauffer, Pulheim, Germany, assignors to Firma Chemiebau Dr. A. Zieren G.m.b.H., Cologne-Braunsfeld, Germany, a corporation of Germany

Filed Sept. 22, 1965, Ser. No. 489,310
Claims priority, application Germany, Sept. 25, 1964, C 33,961
Int. Cl. C01b 17/72
U.S. Cl. 23—168 3 Claims

Sulfuric acid is produced from sulfur dioxide containing gases utilizing a multi-stage catalytic sulfur dioxide oxidation and a two-stage sulfur trioxide absorption. The first absorption stage is arranged before the last oxidation stage and the second absorption stage is arranged after the last oxidation stage. The sulfur trioxide free exhaust gas leaving the first absorption stage is reheated to the starting temperature for the last oxidation stage with the heat obtained by combustion of sulfur or hydrogen sulfide, by roasting of sulfide ores, or by decomposition of waste sulfuric acid.

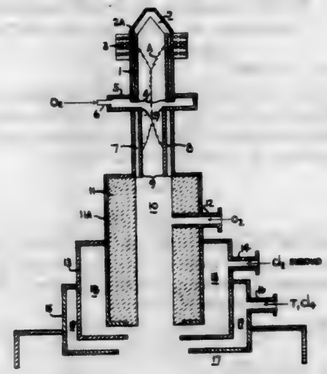
3,443,897

PROCESS FOR PREPARING PIGMENTARY METAL OXIDE

William L. Wilson and Franklin Strain, Barberton, and Howard H. Hookje, Akron, Ohio, assignors to PPG Industries, Inc., Pittsburgh, Pa., a corporation of Pennsylvania

Continuation-in-part of application Ser. No. 354,597, Mar. 25, 1964. This application Apr. 7, 1965, Ser. No. 446,313
Int. Cl. C01g 23/04; C09c 1/36
U.S. Cl. 23—202 10 Claims

Metal oxides, e.g., titanium dioxide, are prepared by vapor phase oxidation of metal halide, e.g., titanium tetrachloride, in a reaction space supplied with heat energy from a gaseous stream heated by electrical energy.



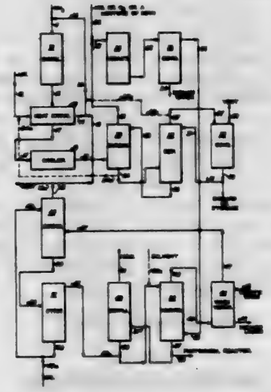
A method for heating gas with an electric arc and forwarding the heated gas to the reaction zone is described.

3,443,898

PREPARATION OF NITROSYL CHLORIDE

Martha B. Sherwin, Brooklyn, N.Y., Sherwood N. Fox, Stamford, Conn., and John White Colton, Pelham Manor, N.Y., assignors to Halcon International, Inc., a corporation of Delaware

Continuation-in-part of application Ser. No. 263,949, Mar. 8, 1963. This application July 5, 1966, Ser. No. 562,571
Int. Cl. C01b 21/52, 21/00
U.S. Cl. 23—203 10 Claims



This invention relates to a process for preparing nitrosyl chloride by oxidizing ammonia with from about 1.25 to about 1.55 moles of oxygen per mole of ammonia in the presence of from about 4.8 to about 25 moles of a diluent per mole of ammonia to form a mixture containing nitrogen compounds and nitrogen free compounds; separating the nitrogen compounds from the nitrogen free compounds; reacting the nitrogen compounds with chlorine, hydrochloric acid or a mixture thereof to form nitrosyl chloride; and recycling at least some of the nitrogen free compounds of the oxidation or at least some of the off gas from the chlorination or both, back to the oxidation step to supply at least part of the diluent for said oxidation step.

3,443,899

PROCESS FOR MAKING GRAPHITIC-TYPE FIBERS

Oliver E. Accountius, Tarzana, Calif., assignor to North American Rockwell Corporation

Filed July 22, 1966, Ser. No. 567,295
Int. Cl. C01b 31/04
U.S. Cl. 23—209.1 4 Claims

A process for making graphitic-like fibers by extruding parapolyphenylene into a fibrous shape and heating said para-polyphenylene fibers for a sufficient time at elevated temperatures to cause pyrolysis thereof.

3,443,900

DENSIFICATION OF ACETYLENE BLACK

Michael Bregazzi, Dorval, Quebec, Canada, assignor to Shawinigan Chemicals Limited, Montreal, Quebec, Canada, a corporation of Canada

No Drawing. Filed Sept. 28, 1966, Ser. No. 582,518
Int. Cl. C09c 1/48
U.S. Cl. 23—209.1 3 Claims

A method for increasing the stable apparent density of acetylene black to values greater than 20 lbs. per cu. ft. involving ball milling, pulverization, and tumbling as the critical sequence of processing stages.

3,443,901

HIGH VELOCITY PROCESS FOR MAKING CARBON BLACK

Charles B. Wendell, Canton, Merrill E. Jordan, Walpole, William G. Burbine, Whitman, and Richard B. Shelvey, Dorchester, Mass., assignors to Cabot Corporation, Boston, Mass., a corporation of Delaware

Filed June 27, 1966, Ser. No. 560,705
Int. Cl. C09c 1/48
U.S. Cl. 23—209.4 9 Claims

A substantially adiabatic process is provided for making carbon black in a laterally enclosed, frustoconical shaped, high temperature reaction zone maintained at reaction conditions with the aid of a combustion reaction between a fuel gas and an oxidant gas. In this process the fuel gas and oxidant gas are brought together as currently oriented high velocity spinning streams at the smaller, throat end of said reaction zone after passing at least one of them around the outside of said reaction zone, and then the resultant mixture is burned inside said zone to form a spinning mass of high temperature combustion products moving through said zone as it diverges toward the larger exit end thereof. The main hydrocarbon feedstock is then introduced to said reaction zone as an axial stream at a point intermediate the ends of said frustoconical, reaction zone.

3,443,902

CHLORINE PURIFICATION

Utah Tsao, Jersey City, N.J., assignor to The Lummus Company, New York, N.Y., a corporation of Delaware

Filed Aug. 5, 1966, Ser. No. 570,544
Int. Cl. C01b 7/06; B01d 53/00
U.S. Cl. 23—219 5 Claims

Process for more efficiently operating a wash zone for scrubbing gaseous chlorine with liquid chlorine from a chlorine liquefaction zone wherein gaseous chlorine from the wash zone is compressed and a portion thereof is passed in a heat transfer relationship with liquid chlorine retained in the wash zone after scrubbing the gaseous chlorine to condense the compressed gaseous chlorine. The condensed chlorine is passed to the wash zone to scrub the gaseous chlorine, thereby reducing liquefied chlorine requirements from the liquefaction zone.

3,443,903

CHEMICAL ANALYSIS TEST STRIPS

Erich Haack, Heidelberg, Hans-Georg Rey, Mannheim, and Peter Rieckmann, Mannheim-Waldhof, Germany, assignors to C. F. Boehringer & Soehne GmbH, Mannheim-Waldhof, Germany, a corporation of Germany

Filed Oct. 7, 1965, Ser. No. 493,686
Claims priority, application Germany, Nov. 12, 1964, B 59,646
Int. Cl. G01n 31/22
U.S. Cl. 23—230 13 Claims



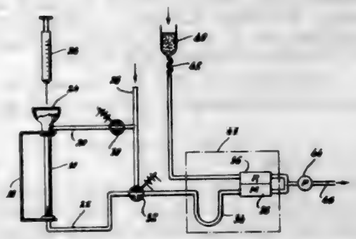
Chemical analysis test strips comprising a strip of porous material impregnated with a reagent for determining the presence of a biochemical or like substance in a fluid attached over a relatively minor portion thereof in end to end relationship with a strip of material which is inert to the medium in which the test is being carried out and which is substantially inert to the testing reagent.

3,443,904

BLOOD GAS ANALYSIS

Harold I. Hill, Fairfield, Conn., assignor to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York

Filed Sept. 27, 1965, Ser. No. 490,269
Int. Cl. G01n 33/16
U.S. Cl. 23—253 10 Claims



Apparatus for analyzing blood or other liquids for contained gases. A tubular reaction vial contains a support material, such as filter paper, which has wicking properties. The support material is impregnated with a reagent which, upon contact with the liquid sample, will release the gas of interest. The sample to be analyzed is injected into the vial and onto the support material, as by a syringe. A carrier gas is passed through the reaction vial and into a chromatograph where it is analyzed to reveal the presence of the released gas.

3,443,905

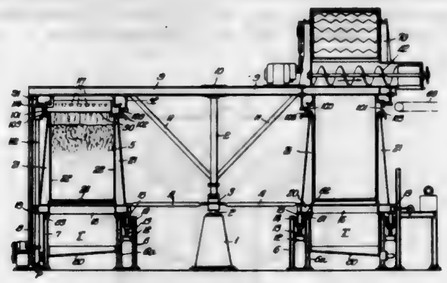
APPARATUS FOR SOLVENT EXTRACTION OF SUBDIVIDED SOLIDS

Harold F. Silver, Clarence R. Steele, and Frank B. Price, Denver, Colo., assignors to American Factors Associates, Limited, Honolulu, Hawaii, a corporation of Delaware

Continuation-in-part of application Ser. No. 489,022, Sept. 21, 1965. This application May 15, 1968, Ser. No. 729,348
Int. Cl. B01d 11/04
U.S. Cl. 23—269 11 Claims

Apparatus for continuously extracting sugar from

sugar cane. The apparatus has a circular chamber containing a bed of subdivided cane. The chamber and the



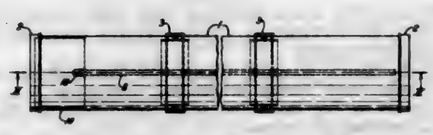
bed of cane are rotated as a unit while solvent is recirculated therethrough counter-current to the direction of rotation of the chamber.

3,443,906

AIR REGENERATION UNIT

Miles J. McGoff, Warrendale, John W. Mausteller, Evans City, and Charles H. Staub, Pittsburgh, Pa., assignors to MSA Research Corp., Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 19, 1965, Ser. No. 497,798
Int. Cl. B01d 53/34; B01j 7/00
U.S. Cl. 23—281 8 Claims



An air regeneration unit for use in a chamber containing a human being has a tubular housing open at its ends and contains a stack of closely spaced rigid alkali metal superoxide discs provided with a central passage formed by openings through them. Circumferentially spaced means around the discs form outer passages. Air is circulated through the housing through all of these passages and between the discs so that carbon dioxide will be removed and oxygen will be evolved.

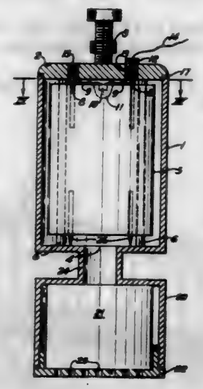
3,443,907

GAS-GENERATING DEVICE UTILIZING A CHEMICAL COMPOSITION CANDLE

John W. Mausteller, Evans City, Pa., assignor to Mine Safety Appliances Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed July 28, 1966, Ser. No. 568,656
Int. Cl. B01j 7/00; C01b 13/00
U.S. Cl. 23—281 7 Claims

A chemical composition candle having embedded therein a pair of metal contact members, at least one of which is a prong projecting from one end. The contact members are electrically connected to an igniter in the candle. The candle is placed in a housing having an outlet for gas liberated by the burning candle. An end wall of the hous-



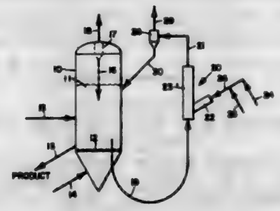
ing is provided with an electric socket receiving the prong when the wall is placed on the housing to close it.

3,443,908

APPARATUS FOR THE PRODUCTION OF PETROLEUM COKE HAVING AN IMPROVED PRECOMBUSTOR

Allen L. Chaney and Eldred N. Cart, Jr., Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed July 22, 1966, Ser. No. 567,149
Int. Cl. B01j 9/18; F27b 15/14
U.S. Cl. 23—284 7 Claims

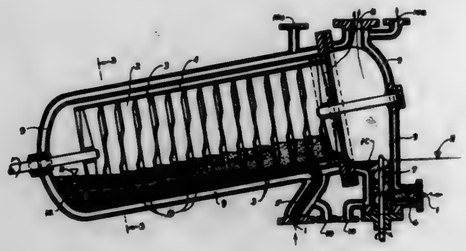


A transfer line heater-precombustor combination for use in providing process heat to a reactor used for the thermal cracking of hydrocarbons, especially where the hydrocarbons are cracked within the reactor by contact with particulate fluidized coke, and the reactor is heated by circulation of coke between the fluidized bed of the reactor and the heater. The heater-precombustor combination includes two communicating refractory lined tubular members, the first a vertically oriented tubular member constituting a heater and the second, an upwardly titled tubular member constituting a precombustor. The angle of inclination, of the precombustor relative to the heater measured from horizontal, is greater than 0° and preferably ranges from about 15° to 75°. Means are provided within said precombustor for introducing fuel and oxygen, and for burning said fuel in the presence of oxygen to provide, in said precombustor, hot combustion gases wherein essentially all of the oxygen is reduced to provide carbon dioxide and water. The procombusted gases which enter into the heater, preferably tangentially, thus provide heat to the particulate coke and, inter alia, suppresses coke burn-up and refractory damage. The length:diameter ratio of the precombustor chamber is greater than about 2:1, and preferably ranges from about 4:1 to about 6:1.

3,443,909
ROTARY DRUM REACTOR

Gunter Goossens, Rial, Switzerland, assignor to Inventa A.G., fur Forschung und Patentverwertung, Zurich, Switzerland

Filed Sept. 6, 1966, Ser. No. 577,320
Claims priority, application Switzerland, Sept. 8, 1965, 12,528/65
Int. Cl. F27b 7/08; B01j; C08g 35/00
U.S. Cl. 23—286 11 Claims



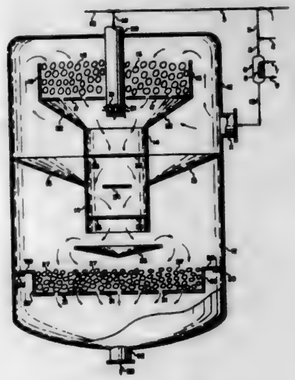
1. A rotary drum reactor suitable for use with highly viscous materials comprising a reaction vessel; a rotatable drum disposed therein being open at both ends and occupying most of the space of said vessel; a spiral rigidly connected to the inside of said drum and extending the full length thereof, said spiral forcedly transporting the reactants through said drum without leakage; means for rotating and controlling the speed of rotation of said drum; inlet means for the reactants on one end of said vessel leading the same between the wall of the vessel and that of said drum to the opposite end thereof; outlet means opposite said inlet means at the same end of the reactor; discharge means for the reacted materials within said outlet means; and a jacket surrounding the outer periphery of said reaction vessel for heating and cooling fluids.

3,443,910
APPARATUS FOR EXOTHERMIC CATALYTIC REACTIONS

Daniel J. Newman, Jackson Heights, and Louis A. Klein, Flushing, N.Y., assignors to Chemical Construction Corporation, New York, N.Y., a corporation of Delaware

Filed June 3, 1966, Ser. No. 555,108
Int. Cl. B01j 9/04
U.S. Cl. 23—288 17 Claims

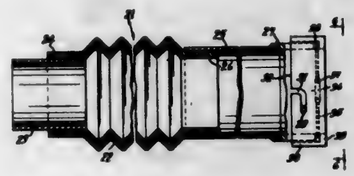
1. An apparatus for exothermic catalytic reactions which comprises a vertically oriented container, an annular partition baffle within said container, said partition baffle extending inwards from the vertical side wall of said container to a vertical conduit centrally disposed within said container, a first catalyst bed disposed in said container above the upper end of said conduit, said first catalyst bed being defined by an annular vertical partition, said vertical partition being spaced away from the side wall of said container so as to provide an annular vertical passage within said container, means to heat a first fluid stream to an elevated temperature of at least the minimum ignition temperature of said first catalyst bed, means to pass said heated first stream into said container above said partition baffle, whereby said first fluid stream flows upwards through the annular vertical passage between said vertical partition and side wall of said container and then flows downwards through said first catalyst bed and is catalytically reacted, a duct extending into said container and terminating below said first catalyst bed, means to pass a cold second fluid stream through said duct whereby said cold second fluid stream is added to the hot fluid stream discharged from said first catalyst bed, means to pass the resulting combined fluid stream into the upper end of said central vertical conduit, whereby the combined fluid stream flows downward through said central vertical conduit, said central vertical conduit being provided with a plurality of spaced apart and staggered horizontal internal baffles, whereby the combined fluid stream is uniformly mixed within said central vertical conduit, a second catalyst bed disposed in said container below the lower outlet of said central vertical conduit, whereby the combined fluid stream discharged from said central vertical conduit flows through said second catalyst bed and is catalytically reacted, and means to remove a reacted fluid stream from said container below said second catalyst bed.



3,443,911
APPARATUS AND SYSTEM FOR THE PURIFICATION OF INTERNAL COMBUSTION ENGINE EXHAUST GASES

Carl D. Keith, Summit, Charles E. Cunningham, East Orange, and Teunis Schreuders, Irvington, N.J., assignors to Engelhard Industries, Inc., Newark, N.J., a corporation of Delaware

Filed June 7, 1966, Ser. No. 555,740
Int. Cl. B01j 9/04
U.S. Cl. 23—288 7 Claims

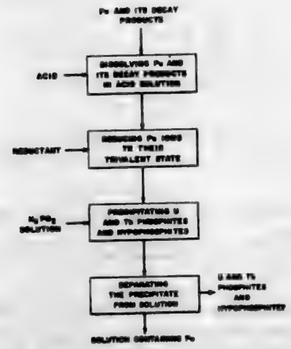


1. A system for the purification of internal combustion engine exhaust gases of vehicles passing through traffic tunnels, comprising an entrance station located at an entrance to a tunnel, a catalytic exhaust gas purifier unit, adapter means secured to the purifier unit for connecting the purifier unit to an exhaust gas outlet of a vehicle at the entrance station, a purifier unit removal station at a tunnel exit substantially adjacent the entrance station for the removal of the purifier unit from the exhaust gas outlet of a vehicle at the removal station, and means for pre-heating the purifier unit at a location prior to its transfer to an exhaust outlet of a vehicle at the entrance station.

3,443,912
SEPARATION OF URANIUM AND THORIUM FROM PLUTONIUM

Gary L. Silver, Centerville, Ohio, assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Apr. 26, 1968, Ser. No. 724,357
Int. Cl. C01g 56/00
U.S. Cl. 23—333 6 Claims



A precipitation process for use in purification of plutonium comprising dissolving the plutonium and its decay products in an acid solution, adding a suitable reducing agent to convert and maintain the plutonium ions in the plus three ionic state, slowly evaporating the solution to gradually and progressively precipitate uranium and thorium as phosphites and hypophosphites to form a homogeneous precipitate essentially devoid of trapped plutonium, and separating the precipitate from the solution.

3,443,913
PROCESS FOR PREPARING HIGH MOLECULAR WEIGHT LINEAR PHOSPHONITRILIC POLYMERS

Thomas Bieniek, Glen Burnie, and James M. Maselli, Ellicott City, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Oct. 12, 1967, Ser. No. 674,759
Int. Cl. C01b 25/00; C08f 13/00
U.S. Cl. 23—357 3 Claims

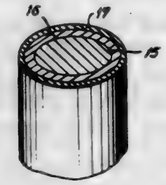
Soluble linear phosphonitrilic chloride polymers of high molecular weight are prepared which are hydrolytically stable and useful as high temperature hydraulic fluids. Additionally, these polymers can be reacted further with other compounds to give resins and elastomers with useful high temperature properties.

3,443,914
COMPOSITE METAL WIRE WITH A BASE OF IRON OR NICKEL AND AN OUTER COAT OF PALLADIUM

Kazutami Hayashi, Tokyo, Japan, assignor to Nippon Electric Company Limited, Tokyo, Japan

Filed July 25, 1966, Ser. No. 567,435
Claims priority, application Japan, July 31, 1965, 40/46,470
Int. Cl. B32b 17/06; H01j 5/26
U.S. Cl. 29—183.5 1 Claim

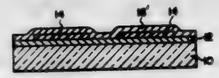
A composite metal material comprised of a wire of iron-nickel alloy or iron, an intermediate coating of a material taken from the group consisting of tin, copper, silver and gold, and an exterior coating of palladium to provide for good metal-to-glass seals to have the characteristic of low resistivity and to substantially equate the thermal expansion of the metallic composition to the glass or ceramic material is bonded thereto.



3,443,915
HIGH RESOLUTION PATTERNS FOR OPTICAL MASKS AND METHODS FOR THEIR FABRICATION

William H. Wood, Good Hope, Rockbridge, Ohio, and Melvin H. Poston, Annapolis, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 26, 1965, Ser. No. 442,921
Int. Cl. B44d 1/12; C03c 17/00
U.S. Cl. 29—194 2 Claims



High resolution optical masks, and methods of forming them, are provided wherein a continuous conductive layer is first deposited on a transparent support and an opaque pattern is formed by plating or deposition through a subsequently removed photoresist pattern.

3,443,916
COMPOSITION AND METHOD FOR REDUCING AIR POLLUTANTS

Andrew T. Rolfe, Fairfield, Conn., assignor to Rolfe Chemical Corporation, Stamford, Conn., a corporation of Connecticut

No Drawing. Continuation-in-part of application Ser. No. 567,398, July 25, 1966. This application May 7, 1968, Ser. No. 727,318
Int. Cl. C10l 10/00, 1/32; C07f 13/00
U.S. Cl. 44—4 32 Claims

A novel manganese complex is described. It is useful in controlling the combustion of fuels and to reduce the amounts of resulting noxious fumes and smoke. Among the noxious fumes and smokes reduced are sulfur trioxide and dioxide, sulfuric acid, carbon monoxide, the nitrogen oxides, unburnt hydrocarbons, carbon particles, and large ash agglomerates. The manganese complex is oil-soluble and is directly admixed when used with liquid fuels. It is dissolved and sprayed upon solid fuels. The manganese complex is useful for improving combustion in both internal and external combustion arrangements. Added benefits from the use of the novel manganese complex in fuels are reduction of combustion deposits, improved fuel utilization, better flame configuration and more uniform and higher flame temperatures. Specific details of the manganese complex and methods for making and using same are set forth in the specification.

3,443,917
FUEL OIL COMPOSITIONS HAVING IMPROVED POUR PROPERTIES

William M. Le Suer, Cleveland, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

No Drawing. Filed May 19, 1964, Ser. No. 368,742
Int. Cl. C10l *1/18*
U.S. Cl. 44—62 4 Claims

Fuel oil compositions incorporating interpolymers of ethylene and propylene have improved pour properties. The fuel oils present in these compositions have initial pour points above about −25° F. Interpolymers useful have a molecular weight of about 50,000–500,000, about 20–45 mole percent of propylene and about 55–80 mole percent of ethylene. These compositions provide for the process of operating a furnace on oil which is stored at low temperature.

3,443,918
GASOLINE COMPOSITION

George J. Kautsky, El Cerrito, and Peter R. Ballinger, San Rafael, Calif., assignors to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed Sept. 21, 1965, Ser. No. 489,044
Int. Cl. C10l *1/22*
U.S. Cl. 44—63 5 Claims

Fuel composition comprising a major portion of a liquid hydrocarbon boiling in the gasoline boiling range and in an amount sufficient to inhibit deposit formation, a mono- or bis-alkenyl succinimide of a bis- or tris-polymethylene polyamine wherein the alkenyl groups of the succinate moieties contain from about 50 to 250 carbon atoms and wherein the polyamine is of the formula:

$$(NH_2\text{—}R\rightarrow_s N\leftarrow H)_t$$

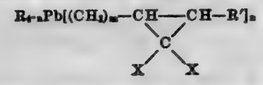
in which R is a polymethylene radical of 4 to 9 carbon atoms, s is 2 to 3, t is 0 to 1, and the sum of $s+t=3$.

3,443,919
GASOLINE COMPOSITION CONTAINING ORGANO-1,1-DIHALOCYCLOPROPYLLEAD COMPOUND

Hymin Shapiro and Russell L. Hudson, Baton Rouge, La., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Original application Feb. 23, 1965, Ser. No. 434,704, now Patent No. 3,382,265, dated May 7, 1968. Divided and this application Oct. 24, 1967, Ser. No. 684,093
Int. Cl. C10l *1/30, 1/20*
U.S. Cl. 44—69 6 Claims

A hydrocarbon fuel composition containing an organolead compound having the formula



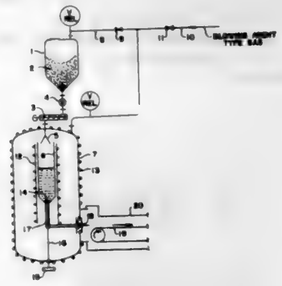
wherein R is an organic radical containing from 1 to about 5 carbon atoms, R′ is hydrogen, a halogen or an organic radical containing from 1 to about 3 carbon atoms, X is a halogen, n is an integer from 1 to 4 and m is an integer from 0 to 3.

3,443,920
METHOD OF PRODUCING FOAMED GLASS HAVING UNIFORM CELL SIZE

Robert H. Overcashier, Walnut Creek, Calif., Stephen A. Shain, Houston, Tex., and Charles M. Schlandt, El Cerrito, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Mar. 17, 1966, Ser. No. 535,242
Int. Cl. C03b *19/08*
U.S. Cl. 65—22 3 Claims

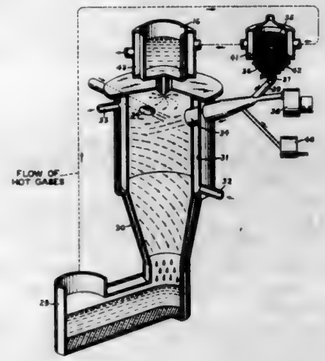
A method of forming foamed glass having uniform cell size and distribution formed by admixing raw glass with a blowing agent consisting of barium carbonate or strontium carbonate, heating said mixture under a highly pressurized atmosphere containing CO_2, and then reducing said pressure.



3,443,921
METHOD OF MELTING GLASS

Marcel Boivent, Villejuif, France, assignor to Compagnie de Saint-Gobain, Neuilly-sur-Seine, France

Filed Aug. 17, 1964, Ser. No. 389,881
Claims priority, application France, Aug. 22, 1963, 945,369
Int. Cl. C03b *5/16*
U.S. Cl. 65—134 5 Claims



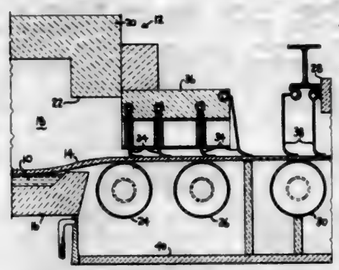
A method of making glass comprising melting a low-melting part of the glass, forming a cyclonic flame at melting temperature, introducing finely divided solid materials of the batch into the periphery of the cyclonic flame, and introducing the molten materials into the central part of the cyclonic flame as a stream, thereby subjecting it to disruption and centrifugal dispersion through the finely divided solids into the flame.

3,443,922
FLOAT GLASS TAKE-OUT ROLL

Frederick A. Settino, New Kensington, Pa., assignor to PPG Industries, Inc., Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 8, 1966, Ser. No. 532,751
Int. Cl. C03b *15/02*
U.S. Cl 65—193 6 Claims

In the float glass process, the take-out rolls are constructed of an alloy containing, by weight, not more than 2 percent iron, at least 10 percent cobalt and at least 3 percent tungsten, to which tin oxide does not adhere.



3,443,923
PROCESS FOR PELLETIZING PHOSPHATE ROCK

Erik Qvale Dahl, Kristiansand, Norway, assignor of one-half to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut, and one-half to Elektrokemisk, Inc., Newark, N.J., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 623,213, Mar. 15, 1967. This application Nov. 3, 1967, Ser. No. 680,338
Int. Cl. C05b *13/02*
U.S. Cl. 71—33 4 Claims

A process for pelletizing phosphate rock comprising: (a) mining and pulping the rock; (b) flowing the pulp to a washing zone; (c) washing, desliming, and grinding the pulp; (d) screening the ground pulp, collecting a fraction having a specific surface area of 7,000–25,000 cm.²/cm.³ and passing a 100 mesh screen, about 50–85% of said fraction passing a 200 mesh screen; (e) partially dewatering and pelletizing said fraction using bentonite or slime from the desliming step as binder; (f) drying the green pellets at about 150–450° C.; and (g) calcining, cooling, and recovering the calcined pellets, all as described hereafter.

3,443,924
METHOD FOR CONTROL OF ALGAE GROWTH

Grace Peters Papp, Stamford, Conn., and James Willington Clapp, Princeton, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Original application Oct. 23, 1965, Ser. No. 504,181. Divided and this application June 25, 1968, Ser. No. 739,618
Int. Cl. A01n *9/20*
U.S. Cl. 71—67 10 Claims

There is provided a method for controlling algae growth by applying thereto an effective amount of an amine cyanoferrate of the formula:

$$(R\text{—}NH_2)_m\cdot H_mFe(CN)_6$$

or

$$(R'\text{—}X\text{—}R''\text{—}NH_2)_m\cdot H_mFe(CN)_6$$

where R is an acyclic alkyl radical, R′ is an acyclic alkyl radical or an acyclic alkoxyalkoxyalkyl radical, R″ is an acyclic alkylene bridge, X is oxygen or sulfur and m is an integer from 3 to 4.

3,443,925
METHOD OF CONTROLLING WEED GROWTH

Kiyoshi Kitasaki, Garden Grove, Irving S. Bengelsdorf, Los Angeles, and Robert F. Crawford, La Mirada, Calif., assignors to United States Borax & Chemical Corporation, Los Angeles, Calif., a corporation of Nevada

No Drawing. Original application Dec. 16, 1964, Ser. No. 418,882, now Patent No. 3,395,153, dated July 30, 1968. Divided and this application Aug. 25, 1967, Ser. No. 663,240
Int. Cl. A01n *9/24, 9/22*
U.S. Cl. 71—92 9 Claims

3,5-dialkylhydantoins in which the alkyl group at the 3-position contains 3–6 carbon atoms and the alkyl group at the 5-position contains 1–4 carbon atoms. The compounds are useful as herbicides and can be formulated with conventional herbicide carriers.

3,443,926
HERBICIDAL COMPOSITION AND METHOD EMPLOYING 3-BENZYL HYDANTOINS

Kiyoshi Kitasaki, Garden Grove, and Robert F. Crawford, La Mirada, Calif., assignors to United States Borax & Chemical Corporation, Los Angeles, Calif., a corporation of Nevada

No Drawing. Original application Dec. 16, 1964, Ser. No. 418,866, now Patent No. 3,389,146, dated June 18, 1968. Divided and this application Sept. 25, 1967, Ser. No. 670,381
Int. Cl. A01n *9/22, 5/00*
U.S. Cl. 71—92 15 Claims

3-benzylhydantoins having a lower alkyl substituent at the 5-position of the hydantoin ring. The benzyl group can be chlorinated or it can have a lower alkyl radical on the α-carbon atom. The compounds are useful as herbicides.

3,443,927
HERBICIDAL MIXTURE AND METHOD OF CONTROLLING UNDESIRABLE PLANT GROWTH THEREWITH

Victor H. Unger, Willow Grove, Pa., assignor to Rohm and Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Mar. 24, 1967, Ser. No. 625,620
Int. Cl. A01n *9/14*
U.S. Cl. 71—103 10 Claims

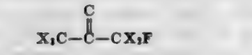
Herbicidal compositions which comprise a mixture of 3′,4′-dichloropropionanilide and 4-methylsulfonyl-2,6-dinitro-N,N-dipropylaniline, and a method of controlling undesirable plant growth with them.

3,443,928
METHOD FOR CONTROLLING THE GROWTH OF POTATO PLANT ORGANISMS

Gordon S. Batchelor, Mountain Lakes, N.J., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Apr. 25, 1966, Ser. No. 544,703
Int. Cl. A01n *9/24*; A23b *7/14*
U.S. Cl. 71—123 20 Claims

Perhalogenated acetones of the formula



wherein X may be a member independently selected from the group consisting of F and Cl, or a hydrate thereof, are useful as vine killers and as sprout inhibiting agents on a variety of plant organisms, particularly potato plants. The disclosed vine killing and sprout inhibiting agents have the unique property in that when they are applied to a growing plant to effect deterioration of the plant's

vines above surface, inhibiting effects will be created in the sub-surface root or tuber portion of the plant.

3,443,929

METHOD OF MANUFACTURING FIBER METAL

Kiyoshi Kishi, Shigeki Iwauchi, and Isamu Saito, Tokyo, Japan, assignors to Mitsuo Iwauchi, Tokyo, and Masako Shimizu, Takasaki, Japan

No Drawing. Continuation-in-part of application Ser. No. 354,389, Mar. 24, 1964. This application Nov. 30, 1966, Ser. No. 597,887
Claims priority, application Japan, June 11, 1963, 38/29,885
Int. Cl. C22b *15/00, 11/00*
U.S. Cl. 75—.5 5 Claims

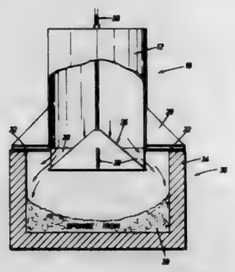
1. A method of manufacturing fiber metal which comprises mixing (1) at least one metal compound selected from the group consisting of oxides, hydroxides, carbonates and silicates of the metals copper, silver, nickel, cobalt and iron, with (2) a halogen source which can halogenate the metal compound, and (3) a solid finely-divided form of carbonaceous material, and applying heat thereto at a temperature lower than the melting point of said metal in a non-oxidizing atmosphere to halogenate said metal compound and to deposit a fibrous form of the metal on the carbonaceous material.

3,443,930

PERIPHERAL CHARGING OF SPONGE IRON

Harry F. Longley, Hamilton, Ontario, Peter E. Bedford-Jones, Edmonton, Alberta, and Thomas Battle, Sherwood Park, Alberta, Canada, assignors to The Steel Company of Canada, Limited, Hamilton, Ontario, Canada, a company of Canada, Metallgesellschaft A.G., Frankfurt am Main, Germany, a company of Germany, and Pickands Mather & Co., Cleveland, Ohio, a company of Delaware

Filed Aug. 29, 1966, Ser. No. 575,583
Claims priority, application Canada, Aug. 27, 1966, 968,961
Int. Cl. C21c *5/52*
U.S. Cl. 75—10 4 Claims



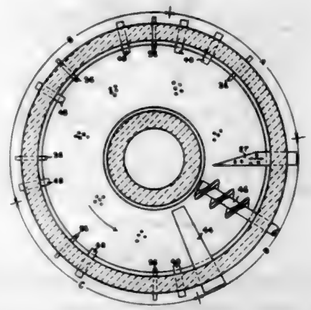
A method of melting a mixed charge of scrap material and discrete iron-bearing material such as sponge-iron pellets in amount up to about 90 percent of total charge weight within an electric-arc furnace including the steps of initially charging said discrete material to form a bed at the bottom of the furnace sloping upwardly outwardly in proximity to the walls thereof, at a height essentially lower than the ultimate level of the molten slag surface, loading said scrap material centrally onto said bed to substantially maintain said upwardly sloping bed walls, and initially melting said scrap material to gravitate downwardly over the bed away from the lower walls of the furnace forming a central bath of molten iron whereby effective control of the disposition of the molten iron within the furnace is obtained without the formation of wall accretions and clusters.

3,443,931

PROCESS FOR MAKING METALLIZED PELLETS FROM IRON OXIDE CONTAINING MATERIAL

Donald Beggs, Toledo, Ohio, and William A. Ahrendt, Lambertville, Mich., assignors to Midland-Ross Corporation, Toledo, Ohio, a corporation of Ohio

Filed Sept. 10, 1965, Ser. No. 486,345
Int. Cl. C21b *13/14*
U.S. Cl. 75—33 3 Claims



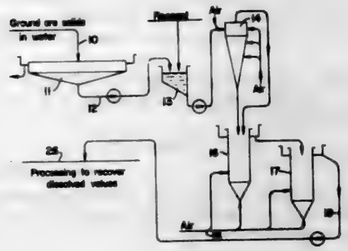
This invention is concerned with a method of metallizing compacts of iron oxide containing a carbonaceous material. The compacts are formed, dried, and preindurated up to a temperature between 1600–1800° F. The pellets are then rapidly heated by exposure to a radiant heat source which produces an environment at a temperature between 2300–2600° F. for a sufficient time so that a liquidous phase is formed within the compacts. After the liquidous phase is formed, the compacts tend to shrink and then are immediately chilled by exposure to a cold environment.

3,443,932

METALLURGICAL PROCESS AND APPARATUS

Deering D. Melin, Palo Alto, Calif., and Peter C. Wilson, Evergreen, Colo., assignors to Krebs Engineers, Palo Alto, Calif., a corporation of California

Filed Oct. 28, 1966, Ser. No. 590,423
Int. Cl. C22b *3/00*; B01d *11/00*; B01f *1/00*
U.S. Cl. 75—101 6 Claims



1. In a metallurgical process in which values are dissolved by contact of divided ore solids with an aqueous liquid solution, the steps of forming a pulp containing the divided ore solids and an aqueous solution comprising water and a chemical reagent, the solution being capable of dissolving metallurgical values in the ore solids, delivering the pulp under pressure to a confined swirling body of the same, whereby centrifugal and shear forces are developed within the swirling body, and continuously

introducing an oxygen-containing gas into the periphery of said swirling body to promote dissolution of metallurgical values.

3,443,933

METHOD OF PREPARING METAL BLACKS

Matthew B. Boyhan, Belton, Tex., and Peruvemba Swaminatha Venkatesan, Bronx, N.Y., assignors to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts

No Drawing. Filed June 11, 1964, Ser. No. 374,272
Int. Cl. C22b *3/00, 11/04*
U.S. Cl. 75—108 3 Claims

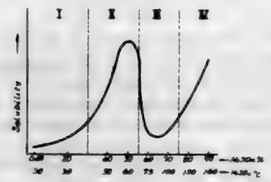
An improved method of preparing metal blacks is described. The method comprises precipitating the metal hydroxide from a salt solution of the metal by the addition of ammonium hydroxide and thereafter reducing the precipitated metal hydroxide to form the metal black. The metal blacks obtained have high catalytic activity, apparently as a result of the modified black surface.

3,443,934

STEEL ALLOYS RESISTANT TO SULFURIC ACID AND CONTAINING SMALL QUANTITY OF ALLOYING ELEMENTS OF COPPER, CHROMIUM, AND TIN OR ANTIMONY

Hirovuki Kubota, Tohru Mimino, Yuh Fukuda, Yoshio Ishizu, and Toshio Nago, Kawasaki-shi, Kanagawa-ken, Japan, assignors to Nippon Kokan Kabushiki Kaisha, Tokyo, Japan

Filed Apr. 5, 1966, Ser. No. 540,343
Claims priority, application Japan, Apr. 12, 1965, 40/21,173; Aug. 27, 1965, 40/52,245; Oct. 4, 1965, 40/60,675
Int. Cl. C22c *39/26, 39/22*
U.S. Cl. 75—125 8 Claims



A steel resistant to sulfuric acid consists essentially of carbon less than about .15%, silicon less than about .40%, manganese in an amount less than about .50% phosphorus in an amount less than .03, sulfur in an amount less than about .03, copper in an amount of about .2–.6%, chromium in amount 0.3–0.9% at least one substance selected from the group consisting of antimony and tin in an amount of about .05–0.5% and the balance iron.

3,443,935

BORON-CARBON-SILICON ALLOY AND METHOD OF PRODUCING THE SAME

Alfred Lipp, Heising, Bavaria, Germany, assignor to Elektroschmelzwerk Kempten G.m.b.H., Munich, Bavaria, Germany, a corporation of Germany

No Drawing. Filed Apr. 19, 1965, Ser. No. 449,306
Claims priority, application Germany, Apr. 30, 1964, E 26,952
Int. Cl. C22c *29/00*
U.S. Cl. 75—134 8 Claims

A very hard, highly refractory alloy of rhombohedral boron carbide crystalline structure consisting essentially of 78–85% by weight of boron, 9–14% by weight of carbon and 6–13% by weight of silicon, produced by heating to temperatures of at least 1000° C. a mixture of 8–16% by weight of sand, 65–75% by weight of boric acid, and 15–25% by weight of carbon.

3,443,936

PROCESS FOR THE PRODUCTION OF ELECTROPHOTOGRAPHIC IMAGES

Richard Menold, Leverkusen, Germany, assignor to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

Filed July 23, 1965, Ser. No. 474,387
Claims priority, application Germany, Aug. 20, 1964, F 43,790; Mar. 12, 1965, A 48,613
Int. Cl. G03g *17/00, 19/00*
U.S. Cl. 96—1 11 Claims

Electrophotographic layer sensitized with dye has the dye very effectively bleached or changed in color by corona discharge combined with illumination by light having wave-lengths outside the region of fundamental lattice absorption by the electrophotographic material. The bleaching or color change is most effective when the illumination light is in the region of the dye's maximum absorption. When the illumination light is in the region of fundamental lattice absorption the bleaching or color change of the dye is retarded. When the illumination light has components within and without the region of fundamental lattice absorption, bleaching or color change is also retarded but takes place preferentially where there is a sharp decay in the conductivity of the electrophotographic layer—that is at the outlines of an image. By projecting an image of a screen on the sensitized electrophotographic layer along with an image to be reproduced, the sharp decay areas are made coextensive with the image areas rather than the image outlines. Positive or negative dye images are obtained by appropriately arranging the exposures to either preferentially bleach the light or dark portions of the image to be reproduced.

3,443,937

IMAGE RESOLUTION

Joan R. Ewing, Rochester, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Apr. 20, 1965, Ser. No. 449,467
Int. Cl. G03g *13/12*
U.S. Cl. 96—1.1 14 Claims

An imaging plate for use in xerographic deformation imaging comprising an electrically conductive support substrate, a layer of vitreous selenium in intimate contact with said substrate, overlying and in intimate contact with said layer of vitreous selenium, an interlayer comprising an electron donor material and an electrically insulating resin, and, overlying and in intimate contact with said interlayer, a layer comprising a deformable resin.

3,443,938

FROST IMAGING EMPLOYING A DEFORMABLE ELECTRODE

Lloyd F. Bean, Rochester, and Robert W. Gundlach, Victor, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed May 18, 1964, Ser. No. 368,063
Int. Cl. G03g *5/04, 13/12*
U.S. Cl. 96—1.1 9 Claims

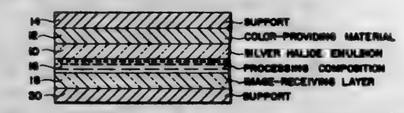


A deformation imaging member and method is described wherein a deformable organic conductive material serves as an electrode in the non-charge frost technique.

3,443,939
DIFFERENTIAL MOBILITY OF COLOR MOIETY IN COLOR TRANSFER

Stanley M. Bloom, Waban, and Robert K. Stephens, Burlington, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed July 24, 1967, Ser. No. 655,436
Int. Cl. G03c 7/00, 5/54
U.S. Cl. 96—3 13 Claims

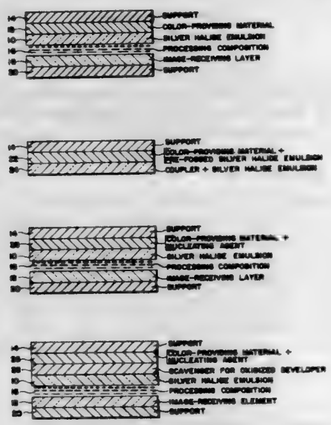


This invention relates to color photography wherein novel systems are provided for obtaining, as a function of development of an exposed photosensitive element, a differential in diffusibility or mobility of a color-providing material whereby an imagewise distribution of more mobile color-providing material may be transferred by imbibition to a superposed sheet material to provide thereon a negative color transfer image.

3,443,940
DIFFUSION TRANSFER EMPLOYING RING-CLOSURE TO RELEASE COLOR-PROVIDING MATERIAL FOR TRANSFER

Stanley M. Bloom, Waban, and Howard G. Rogers, Weston, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed July 24, 1967, Ser. No. 655,440
Int. Cl. G03c 7/30
U.S. Cl. 96—3 34 Claims



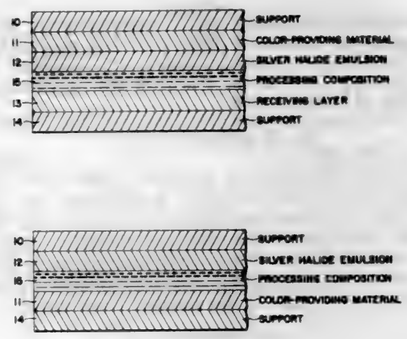
This invention relates to color photography wherein novel systems are provided for obtaining, as a function of development of an exposed photosensitive element, a differential in diffusibility or mobility of a color-providing material, whereby an imagewise distributon of more moble color-providing material may be transferred, by imbibition, to a superposed sheet material to provide thereon a color transfer image.

3,443,941
DYE TRANSFER CONTROL BY SILVER IONS

Howard G. Rogers, Weston, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed July 24, 1967, Ser. No. 655,502
Int. Cl. G03c 7/00, 5/54
U.S. Cl. 96—3 21 Claims

This application relates to color photography and it discloses photographic systems wherein silver ions formed as a function of development of an exposed light-sensitive silver halide emulsion are utilized to control transfer of



a color-providing substance to a stratum to form a color transfer image thereon.

3,443,942
COLORED PHOTOGRAPHIC DIRECT POSITIVE IMAGES

Walter Puschel, Leverkusen, Karl-Wilhelm Schranz, Opladen, Wolfgang Lassig, Cologne-Stammheim, Paul Marx, Leverkusen, and Hans-Heinrich Credner, Munich, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed July 8, 1965, Ser. No. 470,615
Claims priority, application Germany, July 24, 1964, A 46,672; June 24, 1964, A 49,534, A 49,535
Int. Cl. G03c 7/16
U.S. Cl. 96—20 4 Claims

This invention relates to a process for the production of colored photographic direct positive images by means of the simultaneous use of amidrazones which react with the oxidation products of a developer to form stable colorless products, and compounds which under the conditions of the conventional photographic processing either do not react with oxidized developers or only react therewith to form colorless products or products which become colorless during the photographic processing, the said compounds preferably having no developer action and being capable of reacting with the developer-modified amidrazone under oxidizing conditions (e.g., in conventional photographic bleaching baths) to form dyes, the processing of the exposed photographic material being carried out under otherwise usual conditions, using a black-and-white or color-forming developer.

3,443,943
PHOTOGRAPHIC PRODUCTS AND PROCESSES EMPLOYING RING-CLOSING 2-EQUIVALENT SILVER HALIDE DEVELOPING AGENTS

Howard G. Rogers, Weston, and Stanley M. Bloom, Waban, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

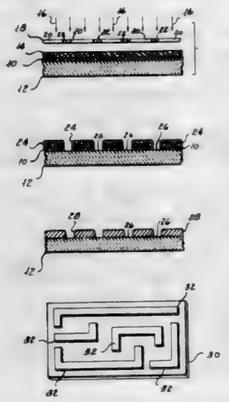
No Drawing. Filed July 24, 1967, Ser. No. 655,346
Int. Cl. G03c 5/54
U.S. Cl. 96—29 26 Claims

Two-equivalent silver halide developing agents capable of undergoing an intramolecular ring closure by oxidation in the development of exposed silver halide are used in novel processes and products for producing monochromatic and multicolor diffusion transfer pictures wherein separate negative and/or positive images are formed.

3,443,944
METHOD OF DEPOSITING CONDUCTIVE PATTERNS ON A SUBSTRATE

Ann R. Wise, Natick, Mass., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Oct. 23, 1963, Ser. No. 318,214
Int. Cl. G03c 5/00
U.S. Cl. 96—36.2 3 Claims



1. A method of producing a pattern of conductive material on a carrier including applying a thin film of clear photo-resist to said carrier, applying a layer of the mixture of a minor amount of finely divided metal and a major amount of photo-resist to said film, exposing said layers to light in the desired pattern, removing the said metal and photo-resist in the unexposed areas and then subjecting the remaining materials to heat to remove the photo-resist components and to form the desired pattern of metal.

3,443,945
PHOTOSENSITIVE COLOR-FORMING COMPOSITION

Harry L. Fichter, Jr., Lakewood, Ohio, assignor to Horizons Research Incorporated, a corporation of Ohio

No Drawing. Filed Oct. 22, 1965, Ser. No. 502,498
Int. Cl. G03c 5/24, 1/68
U.S. Cl. 96—48 7 Claims

A camera speed photosensitive printout composition comprising an N-vinyl amine, an organic halogen compound, a triaryl group V compound and a color-forming dye progenitor which is a carbinol base of a diaryl- or triaryl-methane dye.

This invention relates to a photographic film. More particularly, it relates to a novel film which is particularly useful in the duplication of an original subject, editing of said subject and subsequent reproduction of the edited subject.

3,443,946
PHOTOGRAPHIC MATERIAL HAVING A ROUGHENED PROTECTIVE LAYER

Herbert Grabhöfer, Cologne-Flittard, and Günter Meinhardt, Leverkusen, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed May 13, 1965, Ser. No. 455,605
Claims priority, application Germany, June 4, 1964, A 46,219
Int. Cl. G03c 1/72
U.S. Cl. 96—50 4 Claims

Protective layer for photographic material, which layer has a water-permeable binder containing particles of an acrylonitrile polymer plasticized with a beta-cyanoethyl ether of a polyhydric aliphatic alcohol or a phosphoric acid ester of pentaerythritol.

3,443,947
COLOUR BLEACHING CATALYSTS FOR THE SILVER DYESTUFF BLEACHING PROCESS

Rudolf Mory, Dornach, and Alfred Oetiker, Fribourg, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a Swiss company

No Drawing. Filed Nov. 16, 1965, Ser. No. 508,156
Claims priority, application Switzerland, Nov. 20, 1964, 14,974/64
Int. Cl. G03c 7/02
U.S. Cl. 96—53 7 Claims

Process for the production of coloured photographic images by the silver dyestuff bleaching method. The silver dyestuff bleaching operation is carried out in the presence of a catalyst containing a pyrazine ring and sulfonamide groups. These catalysts yield particularly good results as they are free from acid groups and auxochromic groups. Clean whites at points of high exposure are obtained.

3,443,948
PHOTOSENSITIVE SILVER HALIDE MICROCAPSULES

Thomas Toplica Bryan, White Bear Lake, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed July 12, 1965, Ser. No. 471,421
Int. Cl. G03c 3/00; G03 1/52
U.S. Cl. 96—67 5 Claims

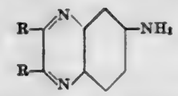
This invention relates to light sensitive microcapsules, the capsule wall comprising gelatin, silver halide and a water soluble color coupler or a bleachable dyestuff and having water immiscible materials encapsulated within.

3,443,949
DYESTUFF BLEACHING CATALYSTS FOR THE SILVER DYESTUFF BLEACHING PROCESS

Alfred Oetiker, Fribourg, and Rudolf Mory, Dornach, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a Swiss company

No Drawing. Filed Oct. 15, 1965, Ser. No. 496,663
Claims priority, application Switzerland, Oct. 22, 1964, 13,719/64
Int. Cl. G03 1/72
U.S. Cl. 96—73 4 Claims

The present invention relates to dyestuff bleaching catalysts for the photographic silver dyestuff bleaching process. The catalysts, which correspond to the formula



in which R represents an aryl, an alkyl, a cycloalkyl or a heterocyclic radical, is incorporated in a layer free from bleachable image dyestuff of a photographic material for the silver dyestuff bleaching process. This material contains on a support in addition at least two silver halide emulsion layers containing bleachable image dyestuffs. At areas of high exposure pure whites are obtained.

3,443,950
SEQUENTIAL POLYMERIZATION PROCESSES, COMPOSITIONS AND ELEMENTS

Stokes Smith Rawlins, Jr., Bound Brook, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 8, 1965, Ser. No. 494,257
Int. Cl. G03c 1/76
U.S. Cl. 96—87 9 Claims

A coating composition comprising a sequentially polymerized mixture of

(a) 90 to 60% by weight of a vinylidene chloride/alkyl acrylate/itaconic acid copolymer wherein the alkyl group contains 1–4 carbon atoms and wherein said components

are present in the respective amounts by weight of 35–96%, 3.5–64.5% and 0.5–25%, and

(b) 10 to 40% by weight of a polymer of an alkyl acrylate and/or methacrylate wherein the alkyl group contains 1–10 carbon atoms, formed by addition polymerization in the presence of said copolymer and photographic film base, and film embodying a layer of said composition.

3,443,951

PHOTOGRAPHIC LIGHT-SENSITIVE MATERIALS CONTAINING PHOSPHORIC ACID ESTER OF ALIPHATIC POLYOLS

Jozef Willems, Wilrijk-Antwerp, Edwin Frans Hendrickx, Boechout, Robrecht Julius Thiers, Brasschaat, and Jozef Jan Ooghena, Heverlee, Belgium, assignors to Gevaert-Agfa N.V., Mortsel, Belgium, a Belgian company

No Drawing. Filed June 30, 1965, Ser. No. 468,614
Claims priority, application Great Britain, July 2, 1964, 27,346/64
Int. Cl. G03c *1/34*
U.S. Cl. 96—94 7 Claims

The formation of spots in radiation-sensitive silver halide material due to the presence of particles of heavy metals, compounds of heavy metals and the corrosion products of such metals or the compounds inhibited by the incorporation in the material of at least one water-soluble phosphoric acid ester of an aliphatic polyol, which per molecule contains at least two phosphoric acid groups from the class of the primary and secondary phosphoric acid groups. Preferably, the polyol is an aliphatic hydrocarbon polyol.

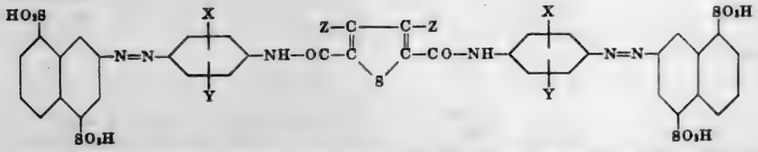
3,443,952

PHOTOGRAPHIC MATERIALS FOR THE SILVER DYESTUFF BLEACHING PROCESS

Walter Anderau, Marly-le-Grand, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a Swiss company

No Drawing. Filed Oct. 26, 1965, Ser. No. 505,235
Claims priority, application Switzerland, Nov. 9, 1964, 14,432/64
Int. Cl. G03c *1/10*
U.S. Cl. 96—99 4 Claims

Photographic material for the silver dyestuff bleaching process. This material contains on a support a layer containing silver halide and at least one yellow dyestuff of the formula



in which X represents a hydrogen atom, an alkyl, alkoxy, hydroxyalkoxy or alkoxyalkoxy group, Y represents a hydrogen atom or an alkyl group and Z represents a hydrogen atom or a methyl group. These dyestuffs have an absorption maximum between 430 and 450 mμ, are highly transparent above 450 mμ and behave well during casting, drying and processing.

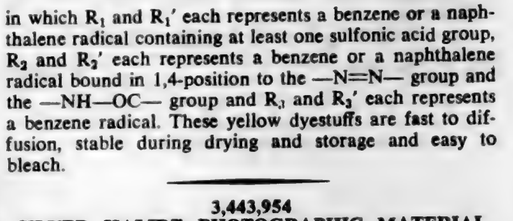
3,443,953

PHOTOGRAPHIC MATERIALS FOR THE SILVER DYESTUFF BLEACHING PROCESS

Hansrolf Loeffel, Bern, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a Swiss Company

No Drawing. Filed Nov. 30, 1965, Ser. No. 510,672
Claims priority, application Switzerland, Dec. 2, 1964, 15,506/64
Int. Cl. G03c *1/10*
U.S. Cl. 96—99 6 Claims

Photographic materials for the silver dyestuff bleaching process. These materials are characterized in that they contain on a support a layer containing silver halide and at least one yellow dyestuff of the formula



in which R_1 and R_1' each represents a benzene or a naphthalene radical containing at least one sulfonic acid group, R_2 and R_2' each represents a benzene or a naphthalene radical bound in 1,4-position to the —N=N— group and the —NH—OC— group and R_3 and R_3' each represents a benzene radical. These yellow dyestuffs are fast to diffusion, stable during drying and storage and easy to bleach.

3,443,954

SILVER HALIDE PHOTOGRAPHIC MATERIAL CONTAINING 3-ACYLAMINO-PYRAZOLONE COUPLERS

Karl-Heinz Menzel, Vaihingen (Enz), and Erich Böckly, Leverkusen, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed May 7, 1965, Ser. No. 454,197
Claims priority, application Germany, May 23, 1964, A 46,126
Int. Cl. G03c *7/34*; C07d *49/20*
U.S. Cl. 96—100 6 Claims

1-(3'-sulfo-4'-ethoxyphenyl)-3-acylamino-5-pyrazolones make unusually effective magenta color couplers for color development.

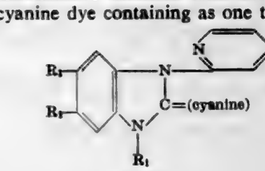
3,443,955

SENSITIZED SILVER HALIDE EMULSIONS

Mario Gandino, Ferrania, Savona, Paolo Merli, Carcare, Savona, and Oreste Turilli, Rome, Italy, assignors to Ferrania S.p.A., Milan, Italy

No Drawing. Filed May 20, 1966, Ser. No. 551,512
Claims priority, application Italy, May 21, 1965, 17,465/65
Int. Cl. G03c *1/08*
U.S. Cl. 96—102 12 Claims

1. A photosensitive emulsion sensitized with a cyanine dye, said cyanine dye containing as one terminal radical:



wherein R_1 is alkyl or allyl, R_2 and R_3 are hydrogen, halogen, acetyl or carboxamido.

3,443,956

SILAGE AID CONTAINING SODIUM, CALCIUM AND MAGNESIUM PHOSPHATES

Frank H. Muller, Zugspitzstr. 106a, Vaterstetten, Germany and Carl Clemente, Marktplatz, Altenmarkt (Alz), Germany

No Drawing. Filed July 11, 1966, Ser. No. 563,973
Claims priority, application Germany, July 17, 1965, M 66,000
Int. Cl. A23k *3/02*
U.S. Cl. 99—8 10 Claims

A silage aid having fodder aiding properties, and also supplying the animal's physiological requirements containing calcium, sodium, and magnesium phosphates to provide the proportions Ca:Na=1:0.9 to 1.3, Ca:Mg =1:0.5 to 0.65 and Ca:P=1.0 to 4.5.

3,443,957

ARABINOGALACTAN AS AN IMPROVER OF BEER FOAM ADHESION

Edward Segel and Paul R. Glenister, Chicago, Ill., assignors to J. E. Siebel Sons Company, Inc., Chicago, Ill., a corporation of Illinois

No Drawing. Filed Sept. 12, 1966, Ser. No. 578,496
Int. Cl. C12h *1/00*
U.S. Cl. 99—48 10 Claims

The foam adhesion of carbonated alcoholic malt beverages is improved by dissolving in the beverage arabinogalactan alone or in combination with a heptyl ester of p-hydroxybenzoic acid.

3,443,958

METHOD OF PREPARING GROUND CEREAL GRAINS IN THE PRODUCTION OF BREWERY MASH

George E. Dennis, 404 Wortley Road, London, Ontario, Canada, and Kenneth R. Robinson, Cooksville, Ontario, and Richard C. Quittenton, London, Ontario, Canada; said Robinson and said Quittenton assignors to John Labatt Limited, London, Ontario, Canada

Filed Feb. 18, 1966, Ser. No. 528,604
Int. Cl. C12c *7/04*
U.S. Cl. 99—52 3 Claims

A process for producing brewers' wort in which cereal grains are dehulled, the dehulled grain is ground to form a fine grist and at least part of the hulls removed before grinding are recombined with the ground dehulled grain and passed through the mashing stage in the usual manner.

3,443,959

PROCESS FOR THE TREATMENT OF POWDERED PRODUCTS

Jacques Jean Ciboit, Paris, France, assignor to Etablissements Laguilharre, Courbevoie, Hauts-de-Seine, France, a corporation of France

Filed Mar. 11, 1965, Ser. No. 438,991
Claims priority, application France, Mar. 13, 1964, 967,330; Mar. 1, 1965, 7,459
Int. Cl. A23c *9/08*
U.S. Cl. 99—56 12 Claims

The wettability of dry powders is improved by producing a stream of the powder and at least one stream of a humidifying fluid which are substantially in parallel and coaxial relation, and a stream of drying air which is substantially parallel and coaxial with the first two streams and surrounding the first two streams, and rapidly contacting these different streams thus to instantaneously humidify the powder and immediately subsequently drying.

3,443,960

SOUR CREAM WHIP

Peter P. Noznick, Evanston, and Charles W. Tatter, Homewood, Ill., assignors to Beatrice Foods Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Aug. 10, 1965, Ser. No. 478,769
Int. Cl. A23c *9/12*
U.S. Cl. 99—59 20 Claims

A whippable, acid flavored sour cream organism cultured food product is prepared comprising a fat, caseinate or soy protein, a calcium source, a buffer and a polyhydric alcohol partial ester of a higher fatty acid. The use of the calcium source gives a product having a firm body and which in powder form is stable on prolonged storage.

3,443,961

METHOD OF FREEZE-DRYING COFFEE

William W. Kaleda, Westwood, N.J., and Joe W. Johnson, Port Chester, N.Y., assignors to General Foods Corporation, White Plains, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 29, 1965, Ser. No. 429,118
Int. Cl. A23f *1/08*; F26b *5/06*
U.S. Cl. 99—71 3 Claims

Freeze-dried coffee which has been aromatized is made more stable by reducing the vacuum to below 100 microns for at least 4 hours while drying to a terminal moisture of between 1% and 1.7%.

3,443,962

METHOD OF FREEZE-DRYING COFFEE

Byron Everett Elerath, Mountain Lakes, N.J., assignor to General Foods Corporation, White Plains, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 29, 1965, Ser. No. 429,156
Int. Cl. A23f *1/08*; F26b *5/06*
U.S. Cl. 99—71 1 Claim

The rate of vacuum freeze-drying frozen slabs of coffee, or other solids-containing liquids, is appreciably increased by scraping or disrupting the surface of said frozen slabs prior to freeze-drying the slabs.

3,443,963

PROCESS FOR FREEZING COFFEE EXTRACT

Herman R. Simon, Woodcliff Lake, N.J., and Stanley Barnett, Pearl River, N.Y., assignors to General Foods Corporation, White Plains, N.Y., a corporation of Delaware

No Drawing. Filed May 5, 1965, Ser. No. 453,471
Int. Cl. A23f *1/08*; F26b *5/06*
U.S. Cl. 99—71 8 Claims

Freeze-dried coffee having a dark color is produced by controlling the freezing rate of the extract within a critical temperature range depending on the concentration of the extract.

3,443,964

PULPY TEXTURED FOOD SYSTEMS CONTAINING INHIBITED STARCHES

Nicholas G. Marotta, Milltown, Paolo C. Trubiano, Dunellen, and Kenneth S. Ronal, Ridgewood, N.J., assignors to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 21, 1966, Ser. No. 544,068
Int. Cl. A23l *1/10*
U.S. Cl. 99—83 6 Claims

Preparation of starch containing food products exhibiting a grainy, pulpy texture, by admixing the non-starch ingredients of said food product with a gelatinized, amylose containing starch product which has been inhibited by reaction with a cross-linking agent and pulverized to within a certain particle size range and thereafter heating the resulting mixture at a temperature of at least about 160° F. so as to effect the swelling of the starch particles therein.

3,443,965

EMULSIFIER FOR USE IN MAKING YEAST-RAISED BAKED GOODS

Hermann Birnbaum, Pittsburgh, Pa., assignor to Star-Kist Foods, Inc., McKees Rocks, Pa., a corporation of California

No Drawing. Filed Apr. 5, 1966, Ser. No. 540,207
Int. Cl. A21d *2/16*
U.S. Cl. 99—91 5 Claims

There is disclosed an additive for use in baking yeast raised products combining monoglycerides of fat-forming fatty acids having a low iodine value with monoglycerides of fat-forming fatty acids of high iodine value in combination with diacetyl tartaric acid ester of mono and diglycerides of edible vegetable oils of commerce.

3,443,966
PAN AND GRILL FRY SHORTENING
Edward J. Reid, Brea, Calif., assignor to Hunt Foods and Industries, Inc., Fullerton, Calif., a corporation of Delaware
No Drawing. Filed Feb. 23, 1966, Ser. No. 529,271
Int. Cl. A23d 5/02
U.S. Cl. 99—118 10 Claims

A pumpable pan and grill fry shortening having, for example, a consistency of unhydrogenated peanut butter at room temperature, is produced by slowly chilling a mixture of hydrogenated soybean oil and coconut oil to obtain an intermediate product having most of its crystals in excess of 200 microns in their largest dimension. This intermediate product is milled to produce a shortening in which most of the crystals are less than 20 microns in their largest dimension. The shortening is stable at relatively high storage temperature. In use it is further characterized by a reduced level of spattering and a reduced amount of sticking when foods are fried.

3,443,967
SALAD OIL FROM ZERO-ERUCIC ACID RAPESEED OIL
Barton F. Teasdale, Islington, Ontario, Canada, assignor to Canada Packers Limited, Toronto, Ontario, Canada
No Drawing. Filed Oct. 18, 1965, Ser. No. 497,548
Int. Cl. A23d 5/02
U.S. Cl. 99—118 4 Claims

Zero-erucic acid rapeseed oil is hydrogenated in the presence of a nickel hydrogenation catalyst to a linolenic acid content between about 0.1 and 1.5% and winterized to provide a salad oil in unexpectedly high yields.

3,443,968
FLAN-TYPE MILK PUDDING AND METHOD AND GELLING AGENT FOR MAKING SAME
Arthur L. Moirano, Mountainside, N.J., assignor to Marine Colloids, Inc., Springfield, N.J., a corporation of Delaware
No Drawing. Filed Jan. 12, 1966, Ser. No. 520,068
Int. Cl. A23l 1/34, 1/04
U.S. Cl. 99—139 3 Claims

A flan-type milk pudding with minimal or no syneresis produced by adding to heated milk carrageenan having a high water gel strength and a phosphate selected from the group consisting of sodium hexametaphosphate tetrasodium pyraphosphate, sodium tripolyphosphate and trisodium phosphate in an amount sufficient to decrease the influence of the calcium content of the milk on the carrageenan.

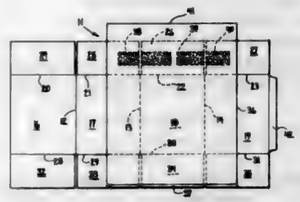
3,443,969
METHOD FOR PREPARING CONDIMENTS FROM YEASTS
Nobuo Nakajima, Nishinomiya, Koichi Miyata, Fuse, Shyozo Wada, Minoo, and Hirao Shimazono, Nishinomiya, Japan, assignors to Takeda Chemical Industries, Ltd., Osaka, Japan
No Drawing. Filed Mar. 11, 1966, Ser. No. 533,439
Claims priority, application Japan, Mar. 15, 1965, 40/15,133
Int. Cl. A23l 1/22
U.S. Cl. 99—140 7 Claims

Method for preparing condiments containing 5'-nucleotides by treating yeast with an enzymatic system capable of hydrolyzing nucleic acid into 5'-nucleotides at pH 8.0–11.0 and an enzymatic system capable of solubilizing organic materials at pH 2.5–7.0 both enzymatic systems originating from a microorganism of the genus Trametes.

3,443,970
FATS PROTECTED AGAINST RANCIDITY
Paul A. Wolf and Allen K. Prince, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 102,932, Apr. 14, 1961. This application Jan. 6, 1965, Ser. No. 423,852
Int. Cl. A23d 5/04; B01j 1/16; C11b 5/00
U.S. Cl. 99—163 8 Claims

Fats are protected from rancidity by incorporating therein a small amount of an acylacetone, the acyl group of which contains from 10 to 26 carbon atoms, optionally with the inclusion of a very small amount of a free radical acceptor. The acylacetone vary strongly suppresses the formation of free radicals, which initiate rancidity. Consequently, the capacity of a very small amount of a free radical acceptor in inhibiting development of rancidity is greatly enhanced.

3,443,971
SHORTENING CONTAINER DEVICE
Robert N. Wood, Indianapolis, Ind., assignor to Inland Container Corporation, Indianapolis, Ind., a corporation of Indiana
Filed Apr. 26, 1967, Ser. No. 633,995
Int. Cl. B65d 85/74, 85/72
U.S. Cl. 99—171 2 Claims

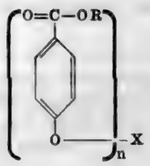


A container particularly well adapted to receive bulk quantities of shortening and the like having a plastic bag in the form of a tube having a single sealed seam closing its lower end. The tube is received inside a carton of corrugated fibreboard and one-half of the perimeter of the bag is secured to the upper flaps of the carton to assure that it will remain in position during filling. After filling, the bag is detached from the flaps so that the end user can dump the bag and product from the carton as a single unit.

3,443,972
METHOD FOR PRESERVING CANNED FOODSTUFFS
Gabriel Robert Di Marco, Kendall Park, N.J., John F. Hogan, Jr., San Francisco, Calif., and Hyman L. Schulman, Oradell, and Frede B. Strandskov, North Caldwell, N.J., assignors of one-half to the F & M Schaefer Brewing Company, and one-half to Washine Chemical Corporation, both corporations of New York
No Drawing. Continuation-in-part of application Ser. No. 384,793, July 23, 1964. This application Aug. 16, 1967, Ser. No. 660,935
Int. Cl. A23b
U.S. Cl. 99—182 2 Claims

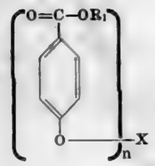
A method is provided for the preservation of canned foodstuffs. The process comprises:

(a) Adding to the foodstuffs a compound of the formula:



wherein

R represents an n-alkyl group of 7 to 8 carbon atoms;
X represents a member selected from the group consisting of hydrogen, alkali metal and alkaline earth metal; and
n is an integer equal to the valence of X; or at least one compound of such formula in admixture with at least one compound of the formula:



wherein

R_1 represents an n-alkyl group of from 1 to 6 carbon atoms; and

X and *n* have the previously indicated significances;

(b) Placing the foodstuff containing the said compound(s) into a container;

(c) Hermetically sealing said container; and

(d) Heat processing the container at a temperature and for a time period such that the amount of heat imparted to the foodstuff is significantly lower than that normally employed in preserving the foodstuff in the absence of the said compound.

3,443,973
COMPOSITE VITREOUS ENAMELS AND THEIR PREPARATION
John Bugosh and Lewis C. Hoffman, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Nov. 24, 1964, Ser. No. 413,627
Int. Cl. C03c 5/00; C09c 1/36, 1/10
U.S. Cl. 106—49 13 Claims

A method of preparing composite pigment-vitreous enamel powders, useful in electrostatic aplications, which method involves the steps of:

(a) preparing an aqueous slurry having a pH of at least 8 of a lead borosilicate frit powder;

(b) preparing an aqueous slurry having a pH not higher than 5 of a refractory inorganic pigment more finely divided than the frit powder of step (a), which pigment it titanium oxide, a spinel type pigment, cadmium sulfide or a cadmium sulfoselenide type pigment;

(c) mixing the two slurries whereby agglomeration of the frit and pigment particles results;

(d) separating the agglomerated particles from the aqueous phase of the mixture;

(e) heating the agglomerated particles at 460–650° C. for a time sufficient to develop a firm bond between the frit and pigment particles and to form a loosely bonded cake of the agglomerated particles, the temperature and time of heating being insufficiently high or long to sinter the agglomerated particles; then

(f) breaking up the cake to separate it into individual composite frit-pigment particles.

3,443,974
REFRACTORY COMPOSITION
Jacques R. Martinet, San Jose, Calif., assignor to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
No Drawing. Continuation of application Ser. No. 373,541, June 8, 1964. This application Apr. 21, 1967, Ser. No. 632,830
Int. Cl. C04b 35/12, 35/04
U.S. Cl. 106—59 10 Claims

A fired product of chromite and periclase, and a batch and process for making such a product are provided, the fired product exhibiting excellent hot strengths after firing at temperatures obtainable by commercially available means, the product containing as adjuvant from 0.2% to 1% alumina, and in one embodiment also from 1% to 10%, based on the amount of alumina added, of titania-yielding material.

3,443,975
VINYL ACETATE GRINDING AID
Frank G. Serafin, Peabody, Mass., assignor to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut
No Drawing. Filed Aug. 23, 1965, Ser. No. 481,900
Int. Cl. C04b 7/54, 7/02
U.S. Cl. 106—90 10 Claims

A composition containing a solid material and, intimately admixed therewith, vinyl acetate. The vinyl acetate effects a more efficient grinding of the solid material when such is ground in a mill. Further, the ground composition is enhanced with respect to resistance to pack set. The solid material can be a naturally occurring inorganic mineral, a partially processed mineral, cement clinker or ceramic. When the solid material is, for instance, portland cement, concrete prepared from the resulting interground composition exhibits increased compressive strength.

3,443,976
MINERAL GRINDING AIDS
Vance H. Dodson, Needham, and Frank G. Serafin, Peabody, Mass., assignors to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut
No Drawing. Filed Oct. 14, 1965, Ser. No. 496,144
Int. Cl. C04b 7/52
U.S. Cl. 106—90 3 Claims

In the grinding of minerals (e.g., Portland cement) an additive which can be morpholine, N-methylmorpholine or a byproduct from the continuous commercial production of heterocyclic amines consisting predominantly of 4-(2-aminoethoxy) ethylmorpholine, 2-(4-morpholethoxy) ethanol, and bis-2-(4-morpholinyl) ethyl ether is added to increase the efficiency of the grinding operation.

3,443,977
ANTICORROSION PIGMENTS
Leonard M. Bennetch, Bethlehem, Pa., assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 471,746, July 13, 1965. This application Nov. 13, 1967, Ser. No. 682,626
Int. Cl. C09c 1/34
U.S. Cl. 106—302 5 Claims

Metal phosphate compositions useful as pigments are prepared by oxidizing a soluble ferrous salt with a soluble chromate salt in the presence of phosphate ions. These pigments are then used in coating compositions to inhibit corrosion of ferrous metal surfaces.

3,443,978
METHOD OF COATING METALS WITH A SILICIDE LAYER AND AN OUTER LAYER OF ALUMINA-SILICATE
James Edward Restall, Cove, Farnborough, England, assignor to Power Jets (Research and Development) Limited, London, England
No Drawing. Filed Aug. 2, 1965, Ser. No. 476,715
Claims priority, application Great Britain, Aug. 14, 1964, 33,187/64
Int. Cl. C23c 9/02, 1/10; B44d 1/12
U.S. Cl. 117—21 6 Claims

An article of niobium or other refractory metal alloy,

having a mixture of metal powders such as iron, silicon, or chromium packed around it, is heated in an iodine-hydrogen atmosphere whereby the metals become reacted together and become diffused into the surface of the article, thereby forming a dense coating, for example of niobium disilicide. In a further step, alumina or an alumina-silicate is deposited on the silicide coating.

3,443,979

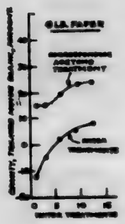
METHOD OF RENDERING SHADOWMARK OPAQUE BY SOLVENT TREATMENT

Bruce D. Skofronick, Appleton, Wis., assignor to Customark Corporation, Appleton, Wis., a corporation of Wisconsin

Continuation-in-part of application Ser. No. 536,487, Feb. 7, 1966. This application Jan. 22, 1968, Ser. No. 699,664

Int. Cl. B44d *1/44;* **D21h** *1/48*

U.S. Cl. 117—37 **29 Claims**



A paper article is provided with areas which are opaque relative to the original light transmission of the paper. The opaque area may extend throughout the entire paper or may be a limited area of a selected design to attain a shadowmark. The opaque area is provided in an improved manner by employing an organic solvent treatment step to subsequently contact a resin and water treated area on the paper. A resin is used which can be laid down as a wet film and which impregnates the paper fibers or paper web. The resin is applied in a liquid composition which may or may not include an organic solvent and a chemical curing agent. A series of steps provide applying the resin to the paper, contacting the resin with water, drying the paper, and then contacting with an organic solvent. A plurality of successive water treatment, drying and organic solvent treatment steps may be selected in some embodiments to develop or enhance the appearance of the opaque area.

3,443,980

PROCESS OF PRODUCING LAMINAR FILM STRUCTURES

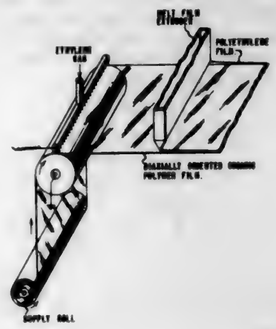
Richard T. McBride, Buffalo, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Apr. 15, 1966, Ser. No. 542,830

Int. Cl. H01t *19/04;* **B32b** *31/04, 31/30*

U.S. Cl. 117—47 **4 Claims**

1. The process which comprises subjecting the surface of a biaxially oriented film of an organic polymer to the action of a pulsating electrical discharge between spaced electrodes at substantially atmospheric pressure and an ambient temperature between about 20° and about 60° C., in an atmosphere consisting of a gaseous olefin hydrocarbon selected from the group consisting of ethylene and propylene, the electrical discharge being produced by a high frequency spark generator and characterized by voltages of from 1000 to pulsating peak voltages of 100,000 volts and above at a frequency of at least 200,000 cycles per second, the extent of treatment by said discharge being between about 1 watt-second and 100 watt-seconds per square inch of film surface; and thereafter extrusion coating onto the treated surface a layer of an ethylene polymer at a temperature between about 75°



C. and no higher than 10° C. below the deorientation temperature of said film.

3,443,981

METHOD OF FORMING PROTECTIVE COATINGS FROM CLAY-TYPE EMULSIONS OF BITUMINOUS MATERIAL

Arnold J. Hoiberg, Montville, John P. Orsulak, Short Hills, and Philip C. Bick, Passaic, N.J., assignors to The Flintkote Company, New York, N.Y., a corporation of Massachusetts

No Drawing. Filed June 15, 1965, Ser. No. 464,213

Int. Cl. B44d *1/44;* **B01j** *13/00*

U.S. Cl. 117—62 **9 Claims**

The normal rate of coagulation and setting-up of an aqueous emulsion of bituminous material, made with colloidal clay as the emulsifying agent, is accelerated by diffusing a relatively small amount of an organic amine through the deposited layer on the surface of a substrate. Thereby the layer reaches a condition of resistance to the effects of rainfall more rapidly than is otherwise the case.

3,443,982

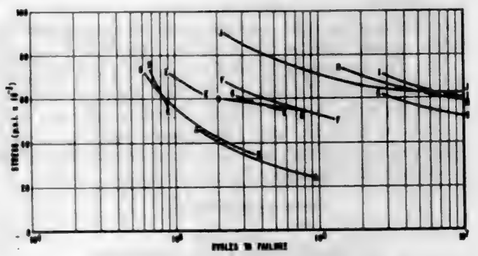
COATINGS FOR RENDERING CORRODIBLE METAL CORROSION RESISTANT

Eric W. Kjellmark, Jr., Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed July 1, 1965, Ser. No. 468,832

Int. Cl. B44d *1/42, 1/36, 1/14*

U.S. Cl. 117—75 **7 Claims**



Corrodible metal such as in the form of wire is made corrosion resistant by having applied to it a coating of a corrosion inhibitor containing a reducing agent such as sodium nitrite, a dispersing agent, a hydrocarbon oil, and water, followed by a coating of a high molecular weight polymer having a low saturation moisture content, e.g., polyhexamethylene sebacamide.

3,443,983

FILM FORMING COMPOSITION AND PROTECTED METAL ARTICLES UTILIZING THE SAME

Sherwin A. Golding, Pittsburgh, and John E. Summers, McMurray, Pa., assignors to H. H. Robertson Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 28, 1966, Ser. No. 590,375

Int. Cl. B32b *15/08;* **C23f** *11/14*

U.S. Cl. 117—75 **9 Claims**



1. A metal sheet having on at least one surface thereof a firmly adherent flexible protective resin film coating which comprises a high temperature reaction product of a mixture of

(a) a polyamide resinous material containing terminal amine groups;

(b) an epoxy resinous material containing terminal epoxy groups in a proportion of about 1 to 4 parts by weight epoxy resinous material for every one part by weight of polyamide resinous material;

(c) fatty-acid pitch in the proportion of about 0.2 to 1.0 part by weight fatty-acid pitch for every one part by weight of components (a) and (b);

(d) finely divided inert particulate inorganic filler in the proportion of about 0.05 to 0.50 part by weight of said filler for every one part by weight of components (a), (b) and (c).

3,443,984

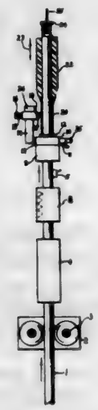
METHOD OF COATING TUBULAR OBJECT WITH POLYURETHANE FOAM

Sherman Alan Stewart, Louisville, Ky., assignor to The Martin Sweets Company, Inc., Louisville, Ky., a corporation of Kentucky

Filed Mar. 27, 1964, Ser. No. 355,293

Int. Cl. B44d *1/36;* **F16l** *9/14*

U.S. Cl. 117—94 **6 Claims**



Discloses a process for dispensing a foamable mixture of polyurethane onto a moving elongated tubular object, so as to form, in situ, a concentric foam layer of uniform thickness for insulation or other purposes. The tubular member or pipe is moved through a low pressure dispensing head in true vertical orientation, to prevent slumping, and the foamable mixture is flowed onto the surface of the pipe to wet same and thereafter is foamed and cured.

3,443,985

METAL PLATING BY A WET MECHANICAL PROCESS

John E. Cutcliffe, St. Paul, Minn., assignor to Peen Plate, Inc., Baltimore, Md., a corporation of Maryland

Continuation-in-part of application Ser. No. 682,847, Sept. 9, 1957. This application Apr. 2, 1964, Ser. No. 356,868

Int. Cl. B05c *3/04;* **C23c** *1/04, 1/08*

U.S. Cl. 117—109 **12 Claims**

A wet process for mechanically plating metal powder on metal articles wherein an impactor material consisting of hard bodies having entirely microscopically smooth non-metallic and non-ionizable outer surfaces resistant to metal coating in a liquid carrier, for example glass balls, is utilized in the presence of a liquid carrier to forcibly impact a coating of the metal powder onto the articles to be plated.

3,443,986

PROCESS FOR IMPROVING THE ADHESION OF FIBROUS MATERIALS TO RUBBER

Jun Watanabe, Soji Arakawa, and Tokuji Fukuoka, Ujishi, Japan, assignors to Nippon Rayon Co., Ltd., Kyoto-fu, Japan, a corporation of Japan

No Drawing. Filed Aug. 24, 1964, Ser. No. 391,783

Int. Cl. B32b *25/02;* **D06m** *13/14, 13/16*

U.S. Cl. 117—138.8 **2 Claims**

A process for the adhesion of fibrous materials to rubber by dipping the fibrous materials in a mixture of a wax and/or paraffin containing resorcinol, formalin and a rubber latex so as to improve adhesive strength of the fibrous materials.

3,443,987

PROCESS FOR TREATING FIBROUS MATERIAL WITH ALDEHYDE CONDENSATION PRODUCTS AND THE RESULTING MATERIAL

Gerald R. Ferrante, Metuchen, N.J., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 29, 1965, Ser. No. 517,479

Int. Cl. C21h *5/14;* **C08j** *1/44;* **C08h** *19/02*

U.S. Cl. 117—139.4 **18 Claims**

A process for treating fibrous materials to improve their properties which comprises contacting the fibrous material with an aqueous solution containing (1) a crease-proofing amount of a reaction product of (a) an aldehyde having attached to a carbon atom involving the alpha to beta carbon atom relative to the



group a member of the group consisting of a —OH, —SH, and —NH_2 radical and a carbon-to-carbon unsaturated linkages, and (b) a dissimilar aldehyde containing the

group as the only reactive group, and (2) a dual catalyst system consisting of a catalytically effective amount of magnesium chloride and acidic salt of a metal of the group consisting of sodium, potassium, aluminum and zinc.

3,443,988

PRINTED CIRCUITS, WORK HOLDERS AND METHOD OF PREVENTING ELECTROLESS METAL DEPOSITION

John F. McCormack, Rosyln Heights, and Frederick W. Schneble, Jr., Oyster Bay, N.Y., assignors to Photocircuits Corporation, Glen Cove, N.Y., a corporation of New York

No Drawing. Filed May 6, 1965, Ser. No. 453,836

Int. Cl. B44d *1/20;* **C23c** *3/02;* **H05k** *3/18*

U.S. Cl. 117—212 **24 Claims**

A method is provided for substantially preventing the

extraneous deposition of electroless metal on selected areas of an insulating substrate which comprises providing the insulating substrate in said selected areas with a poison capable of lowering the catalytic activity in the vicinity of surface imperfections which are present in said areas.

3,443,989

PROCESS FOR PROVIDING SUPERCONDUCTIVE LAYERS OF NIOBIUM-TIN

Gunther Wilhelm, Burlafingen, near Neu-Ulm, Germany, assignor to Siemens Aktiengesellschaft, Erlangen, Germany, a corporation of Germany

Filed Apr. 28, 1965, Ser. No. 451,572

Claims priority, application Germany, Apr. 30, 1964, S 90,862

Int. Cl. C23c *11/02*; C22c *13/00*; B32b *15/02*

U.S. Cl. 117—227 7 Claims

Described is a process for providing a coating of niobium-tin on a support. The process comprises reacting at a given temperature in one location of evacuated apparatus, a niobium-tin with a material which undergoes reaction with the niobium-tin to form reaction products which are gaseous at said given temperature and which undergoes a reverse dissociation reaction at a temperature higher than said given temperature, while concurrently heating at another location of said apparatus, said support to a temperature at least equal to said higher dissociation temperature but less than the melting point temperature of the material constituting said support, the gaseous reaction products being transported by gas diffusion from said colder one location to said hotter other location, said gaseous reaction products thermally dissociating at said other location and said niobium-tin compound dissociation product depositing upon said support.

ERRATUM

For Class 127—5 see:
Patent No. 3,443,549

3,443,990

COLD-WATER-DISPERSIBLE STARCH PRODUCT

Coenraad Decnop, Bussum, Netherlands, assignor to Amylo Chemie N.V., Koog aan de Zaan, Netherlands, a Dutch company

No Drawing. Filed Sept. 2, 1965, Ser. No. 484,735

Claims priority, application Netherlands, Sept. 7, 1964, 6410374

Int. Cl. C13l *1/08*

U.S. Cl. 127—33 17 Claims

A cold-water-dispersible starch product is made by intimately mixing an aqueous suspension of a starch material with an effective amount up to 4% of an antiagglomeration and antidegradation additive consisting essentially of a finely divided mono- or diglyceride of a saturated higher fatty acid (e.g. glycerol mono- or distearate), and then subjecting the mixture to a normal heat treatment for causing gelatinization and drying of the starch. Said starch material may have a special addition of carboxymethyl cellulose or natural gums while said glyceride additive may include up to 3% by weight of triglycerides. The resulting end product evidences no lump formation on addition with water and no undesired gel formation or retrogradation on aging and cooling of pastes made therefrom.

3,443,991

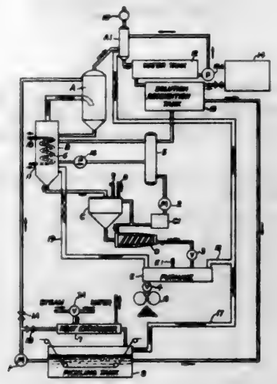
PROCESS FOR PICKLING METAL

Georges F. Kremm, 10 E. Erie St., Chicago, Ill. 60611; Virginia Kremm, executor of said Georges F. Kremm, deceased

Filed Dec. 6, 1965, Ser. No. 511,761

Int. Cl. B08b *3/08, 3/04*

U.S. Cl. 134—3 8 Claims



A continuous cyclic process for pickling iron, steel and alloys thereof, and recovering iron from the used pickling solutions wherein a portion of used pickling solution comprising hydrochloric acid and iron chloride is removed from a pickling tank through which the metal is being passed, the used pickling solution is passed counter current to hydrochloric acid vapors in an absorber to absorb hydrochloric acid so as to raise the chloride concentration, then into a chiller vessel to lower the temperature and bring about crystallization and deposition of hydrous iron chloride crystals, separating the iron chloride crystals from the mother liquid, and depositing them in a furnace where the crystals are heated and reduced with hydrogen or other reducing agent to iron and hydrogen chloride, recovering the iron, passing the hydrogen chloride gas into the absorber, and recycling the mother liquor to maintain a substantially uniform and chemically active pickling solution by the addition only of make-up acid and water in sufficient amount to offset drag-out and fume losses.

3,443,992

CLEANING EVAPORATOR TUBES

Richard Lee Schmidt, North Little Rock, and Richard Henry Featherston, Benton, Ark., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

No Drawing. Filed Oct. 23, 1964, Ser. No. 406,177

Int. Cl. B08b *3/08*

U.S. Cl. 134—41 8 Claims

A composition adapted for the removal of sodium aluminum silicate scale from processing equipment employed in the alkaline extraction of alumina from aluminous ores comprises an aqueous solution containing a mineral acid such as sulfuric acid, and an organic acid capable of forming a complex with aluminum, such as acetic acid, said solution having a pH not greater than about 4.

3,443,993

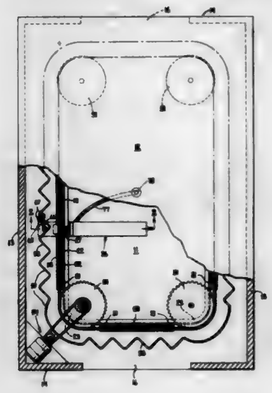
CAR WASH APPARATUS

William J. Lynn, Indianapolis, and James P. Loop, Kokomo, Ind., assignors to Launders of Indiana Inc., Indianapolis, Ind., a corporation of Indiana

Filed Aug. 16, 1967, Ser. No. 660,943

Int. Cl. B60s *3/04*; B08b *3/02*

U.S. Cl. 134—123 9 Claims



Apparatus for washing cars and the like having a serpentine cam track, a cam follower piloting on the serpentine cam track, and linkage means coupling the cam follower to vertically and horizontally directed pivotally mounted nozzles.

3,443,994

ELECTRODE ARRANGEMENT IN HIGH ENERGY GALVANIC BATTERIES

Pentti J. Tamminen, Otaniemi, Finland, assignor to Oy Airam AB, Helsinki, Finland, a corporation of Finland

Filed Dec. 28, 1965, Ser. No. 516,935

Claims priority, application Finland, Dec. 31, 1964, 2,798/64

Int. Cl. H01m *35/06*

U.S. Cl. 136—69 1 Claim

An electrode arrangement for high energy galvanic batteries having large elongated duplex electrodes with U-shaped ribbons of flexible plastic fitted tightly along their longitudinal edges. A number of such electrodes are assembled in overlying relationship with one of them serving as the terminal electrode and having tapes of aluminum foil secured along the borders of that electrode and folded over the plastic bordering ribbons. The assembly, or a plurality of them axially aligned, are secured within a cylindrical metal casing and provision is made for electrolyte to be introduced through a center hollow axis and to be forced to flow outwardly through the intervening spaces between the electrodes of one assembly, then axially and back inwardly through the intervening spaces between the electrodes of the adjacent assembly.

3,443,995

BATTERY CONSTRUCTION

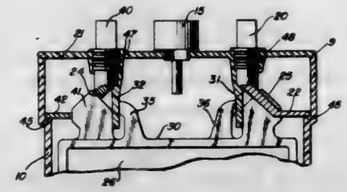
Vincent Michael Halsall, Bayside, and Roy Erving Hennen, Mequon, Wis., assignors to Globe-Union Inc., Milwaukee, Wis., a corporation of Delaware

Filed Oct. 13, 1966, Ser. No. 586,400

Int. Cl. H01m *39/02, 35/32*

U.S. Cl. 136—79 4 Claims

A plate suspending structure for a storage battery is described in detail. Both the positive and negative plates of the battery have two projections extending from their upper portions, one projection near the corner of the plate and the other projection spaced from the corner and in proximity to the corner projection of the opposite polarity plate. The projections at the corners are mechanically and electrically connected to two conducting posts mounted in the cover. Two nonconducting rib members project vertically from the battery cover. One rib member fits between the corner projections on the positive plates and the spaced projections on the negative plates; the other rib member fits between all the corner projections on the negative plates and the spaced projections on the positive plates. Two ledges in the battery container support two conductive straps which connect the positive and negative plates, respectively. With this construction, torsion at the corner projections is prevented. In addition, this construction allows for changes in size of the plates.



3,443,996

APPARATUS FOR CONTINUOUS MANUFACTURE OF ELECTRODES FOR SINTERED PLATE ACCUMULATOR CELLS

Sven Uno Falk, Erik Jönsson, and Sven Gunnar Söredal, Oskarshamn, Sweden, assignors to Svenska Ackumulator Aktiebolaget Jungner, Oskarshamn, Sweden, a corporation of Sweden

Filed Apr. 29, 1966, Ser. No. 546,359

Int. Cl. H01m *35/30, 35/28*

U.S. Cl. 136—82 6 Claims

An apparatus for the continuous manufacture of electrodes for sintered plate accumulator cells is disclosed. The apparatus consists of a means for sintering a metal powder on a metal substrate, a plurality of narrow curved container means for impregnating, washing, drying and precipitating a solution of a salt of an active metal on the band, means for electrolyzing the active metal on the band, and rollers to feed the band to and remove it from the plurality of curved containers. When producing negative electrodes cathodizers replace the precipitation means, the cathodizer being a rotating or stationary cage-like drum having insulating rods or rollers.

3,443,997

SOLID STATE ELECTROCHEMICAL DEVICES

Gary R. Argue, Woodland Hills, and Boone B. Owens, Calabasas, Calif., assignors to North American Rockwell Corporation, a corporation of Delaware

Continuation-in-part of application Ser. No. 526,839, Feb. 11, 1966. This application Aug. 1, 1966, Ser. No. 573,743

Int. Cl. H01m *11/00, 13/06, 13/00*

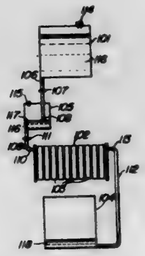
U.S. Cl. 136—83 14 Claims

A solid state electrochemical device having an ionically conductive solid electrolyte element. The conductivity-imparting component of the solid electrolyte element has the formula MAg_4I_5, where M represents K, Rb, NH_4, or Cs, and combinations thereof, Cs being present only as a minor constituent of M.

3,443,998
FUEL CELL WITH Pt-Au ANODE AND MOLYBDATE-CONTAINING ELECTROLYTE
Joseph A. Shropshire, Westfield, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed July 5, 1963, Ser. No. 293,155
Int. Cl. H01m 27/10
U.S. Cl. 136—86 4 Claims

1. In a fuel cell the improvement comprising in combination therewith an anode comprising an electrically conductive substrate having a physical mixture of platinum and gold thereon, said gold being about 45 to 55 wt. percent of said mixture, said electrode being immersed in an anolyte comprising aqueous sulfuric acid containing 0.1 to 2.5 wt. percent of a water soluble molybdate.

3,443,999
FUEL CELL SYSTEMS
Masataro Fukuda, Takatsuki-shi, Taketsugu Hirai, Hiraoka-shi, Takashi Hino, Neyagawa-shi, Tomizo Shiramoto, Osaka, and Isoo Sawada and Nobuyuki Yanagihara, Moriguchi-shi, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan
Filed June 16, 1964, Ser. No. 375,495
Claims priority, application Japan, June 19, 1963, 38/32,399
Int. Cl. H01m 27/12
U.S. Cl. 136—86 4 Claims

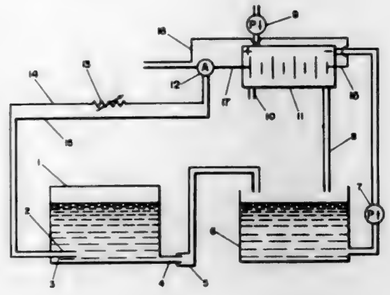


A liquid fuel cell system comprising a fuel cell containing an oxidizing electrode and a fuel electrode is supplied with a liquid fuel from a liquid fuel supply tank connected to the fuel cell through a flow circuit, characterized by means provided in a portion of the flow circuit for maintaining the height (pressure head) of the liquid fuel being supplied relative to the fuel cell substantially constant to continuously supply the liquid fuel while applying a constant liquid fuel pressure thereto. In such a fuel cell it is required to maintain the amounts of oxidizing agent and the liquid fuel constant in order to make the output of the fuel cell constant. The present invention is intended to maintain a liquid fuel pressure applied to the fuel cell constant by a liquid level controlling means.

3,444,000
METHOD OF OPERATING FUEL CELL WITH A TAPE FEED CARRYING THE REACTION COMPONENTS OF A THERMAL CELL
Bernard A. Gruber, Boxford, Mass., assignor to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware
Continuation-in-part of application Ser. No. 232,144, Oct. 22, 1962. This application Mar. 29, 1966, Ser. No. 538,286
Int. Cl. H01m 17/06, 21/14
U.S. Cl. 136—86 5 Claims

1. The method of operating a fuel cell comprising moving a dry electrolytically permeable tape separator cell feed carrying the reaction components of a thermal cell past current collectors at which heat melts a solid electrolyte carried by the separator.

3,444,001
FUEL CELL AND ELECTROLYSER SYSTEM AND METHOD OF OPERATING SAME
Peter L. Terry and Kurt W. Klunder, Melrose, Mass., assignors to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware
Filed May 17, 1966, Ser. No. 550,770
Int. Cl. H01m 27/00
U.S. Cl. 136—86 6 Claims



A novel fuel cell system and method of operating same. The system and method relate to fuel cell systems having fuel cell stacks operating on dissolved hydrazine as a fuel supply. In accordance with the practice of the invention, the fuel is pumped from the fuel storage area to the cell stack by way of pressure generated by the electrolysis of hydrazine thereby eliminating mechanical pumps for this purpose.

3,444,002
PRIMARY CELL WITH PERSULFATE DEPOLARIZER
Marinus Dirk Wijnen and Pieter Abraham Boter, Emmasingel, Eindhoven, Netherlands, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed June 14, 1966, Ser. No. 557,489
Claims priority, application Netherlands, June 24, 1965, 6508091
Int. Cl. H01m 21/10, 15/04
U.S. Cl. 136—112 9 Claims

A primary cell which employs a storable flexible foil which can be placed between a pair of metal plates constituting the electrodes and which can be activated by being moistened or by the addition of an aqueous liquid. The foil includes a depolarizer consisting of a porous carrier layer of insulating material, e.g., paper, the pores of which are filled with a mixture of potassium, sodium, or ammonium persulfate and a catalyst, e.g., carbon.

3,444,003
MULTILAYER CATALYTIC ELECTRODE HAVING A LAYER OF NOBLE METAL AND LEAD AND A SURFACE LAYER FREE OF LEAD AND METHOD OF CONSTRUCTING SAME
James R. Moser, Bolton, Conn., assignor, by mesne assignments, to Leesona Corporation, Cranston, R.I., a corporation of Massachusetts
Filed Sept. 30, 1965, Ser. No. 491,762
Int. Cl. H01m 27/10
U.S. Cl. 136—120 6 Claims

1. A method of constructing an electrode for use in an

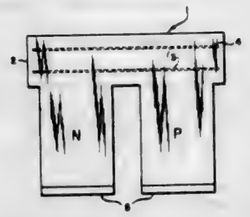
electrochemical device comprising the steps of electrodepositing a layer of catalytic metal from a aqueous solution consisting essentially of a catalytic noble metal and lead onto a base substrate having a conductive surface, said catalytic metal being present in said solution in a major amount and said lead being present in said solution in a minor amount, and thereafter electrodepositing a second layer upon said first electrodeposited layer from a solution of a catalytic noble metal free of lead.

4. An electrode structure for use in an electrochemical device comprising a base substrate having a conductive surface and having a first layer, said first layer consisting essentially of a catalytic noble metal in a major amount and lead in a minor mount, and a second layer electrodeposited on said first layer, said second layer being free of lead.

3,444,004
ELECTROCHEMICAL CELL HAVING AT LEAST ONE NON-CONSUMABLE ELECTRODE COMPRISING A POROUS METAL SUPPORT HAVING INTERNAL VOIDS SEALED WITH A HYDROPHOBIC POLYMER
Stanley W. Smith, Talcottville, Conn., assignor, by mesne assignments, to Leesona Corporation, Cranston, R.I., a corporation of Massachusetts
No Drawing. Filed Sept. 30, 1965, Ser. No. 491,884
Int. Cl. H01m 27/10
U.S. Cl. 136—120 22 Claims

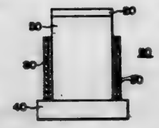
Lightweight electrodes for use in an electrochemical device are described. The electrodes comprise a porous metal support in which the internal voids of the support are filled with a hydrophobic polymer and an intimate admixture of catalytic metal and hydrophobic polymer with the catalytic metal being in conductive contact with a surface of the filled metal support.

3,444,005
THERMOELECTRIC HOT SHOE CONTACTS
Leonard E. Avis, Joppatowne, and Donald B. Evans, Baltimore, Md., assignors to Martin-Marietta Corporation, New York, N.Y., a corporation
Filed Jan. 4, 1965, Ser. No. 423,229
Int. Cl. H01v 1/12
U.S. Cl. 136—205 10 Claims



1. A thermoelectric device for high temperature operation comprising two thermoelements of thermoelectrically complementary material said thermoelements being joined at one end by a common conductor to form a high temperature thermoelectric junction, said common conductor comprising (1) a semiconductor shoe material having physical chemical and electrical properties that are similar to the physical, chemical and electrical properties of said thermoelements, and (2) metallic material embedded in said semiconductor shoe material to increase the electrical conductivity and strength of said shoe.

3,444,006
THERMOELECTRIC ELEMENT HAVING A DIFFUSION BONDED COATING
Charles S. Duncan and Samuel J. Scuro, Penn Hills, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 16, 1963, Ser. No. 331,043
Int. Cl. H01v 1/02
U.S. Cl. 136—238 8 Claims



1. A thermoelectric element suitable for use in a thermoelectric device comprising a body having opposite end portions defining a vertical length and a horizontal portion; said body comprising a thermoelectric material selected from the group consisting of metallic sulfides, selenides, antimonides, and tellurides; metal contact members; said metal contact members being thermally and electrically conductive metals; said metal contact members being joined to said opposite end portions; a thin walled diffusion bonded coating of metal; said metal selected from the group consisting of tin, lead, indium, zinc, gallium, and alloys thereof; said thin walled coating completely surrounding the horizontal portion of said thermoelectric material and extendng from 25% to 95% of the vertical length of said body of thermoelectric material; said thin walled coating being diffusion bonded to said thermoelectric material so as to enable the device to be used above the melting point of said metal and above the vaporization temperature of said thermoelectric material.

6. A thermoelectric element comprising a body having opposite end portions defining a vertical length and a horizontal portion; said body comprising lead telluride; a thin walled diffusion bonded coating of lead; said lead coating completely surrounding the horizontal portion of said lead telluride body and extending from 25% to 95% of the vertical length of said lead telluride body; said thin walled coating of lead being diffusion bonded to said lead telluride body so as to enable said element to be used above the melting point of said lead and above the vaporization temperature of said lead telluride.

7. A thermoelectric element comprising a body having opposite end portions defining a vertical length and a horizontal portion; said body comprising germanium bismuth telluride; a thin wall diffusion bonded coating of tin; said tin coating completely surrounding the horizontal portion of said germanium bismuth telluride body and extending from 25% to 95% of the vertical length of said germanium bismuth telluride body; said thin walled coating of tin being diffusion bonded to said germanium bismuth telluride body so as to enable said element to be used above the melting point of said tin and above the vaporization temperature of said germanium bismuth telluride.

3,444,007
PROCESS OF FORMING PAINT-BASE COATINGS ON ZINC AND ZINC ALLOY SURFACES
James I. Maurer, St. Clair Shores, and Vinod D. Shah, Detroit, Mich., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Continuation of application Ser. No. 310,877, Sept. 23, 1963. This application Mar. 13, 1967, Ser. No. 623,515
Int. Cl. C23c 1/10, 3/00
U.S. Cl. 148—6.15 9 Claims

A process for coating zinc and zinc alloy surfaces, wherein the surface is contacted with an aqueous alkaline solution which contains at least one metal ion other than

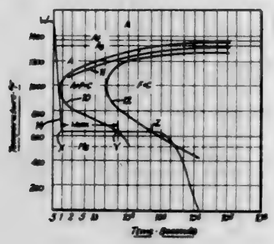
an alkali metal ion, which ion is selected from the group consisting of silver, magnesium, cadmium, aluminum, tin, titanium, antimony, molybdenum, chromium, cerium, tungsten, manganese, cobalt, ferrous and ferric iron, and nickel, and a complexing agent which is present in the solution in a sufficient quantity to hold the other metal ions in the solution. The solution is maintained in contact with the surface for a period sufficient to form on the surface a paint-based coating. The metal ion selected from the indicated group is present in the solution in an amount which is sufficient to produce a coating quality which enables the thus-produced coating to function as a base for paint. In the most preferred embodiment, in addition to the metal ion from the indicated group, the solution also contains at least one alkali metal ion.

3,444,008

CONTROLLED ATMOSPHERE PROCESSING

William R. Keough, Birmingham, Mich., assignor of forty-five percent to Multifastener Company, Detroit, Mich., a partnership

Filed May 9, 1966, Ser. No. 548,554
Int. Cl. C21d *7/14, 1/60, 9/52*
U.S. Cl. 148—12.4 9 Claims



A method of heat treating steel objects which includes heating the steel to an austenitic state, quenching the object in liquid to reduce the temperature of the object to a lower temperature at which the steel remains austenitic for a substantial time and then transforms to another crystalline form with the quenching being done sufficiently fast to avoid transformation of the steel to another crystalline form, working the object at the lower temperature in said liquid, maintaining the object at the lower temperature while the steel thereof transforms to the other crystalline form, and ultimately cooling the object to room temperature.

3,444,009

METHOD OF HEAT-TREATING BETA TITANIUM-BASE ALLOYS

Evan William Evans, Hagley, near Stourbridge, and Miles Edward Rotherham, Sutton Coldfield, England, assignors to Imperial Metal Industries (Kynoch) Limited, Birmingham, England, a corporation of Great Britain

No Drawing. Filed June 17, 1966, Ser. No. 558,240
Claims priority, application Great Britain, June 23, 1965, 26,600/65
Int. Cl. C22f *1/18;* C22c *15/00*
U.S. Cl. 148—12.7 12 Claims

Beta titanium-base alloys containing 15–35% molybdenum, 15–35% vanadium, up to 5% zirconium, .01–0.2% boron, 0.1–5% hafnium, .01–.2% carbon, up to 5% of at least one element selected from the group consisting of W, Ta, Nb, Cr and Al and the balance Ti are strengthened by heating the alloy to a temperature between 1300° C. and 1500° C. at which the precipitate-forming elements dissolve in a beta matrix, cooling the alloy to retain the precipitate-forming elements in solution in the matrix and subsequently ageing the alloy at a temperature between 500° C. and 950° C. to form a very fine precipitate.

3,444,010

FLUID-MOLD CASTING SLAG

James E. Roberts, Huntington, W. Va., assignor to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware

Filed Oct. 3, 1966, Ser. No. 583,911
Int. Cl. C23c *1/12*
U.S. Cl. 148—22 5 Claims

1. A fluid-mold casting slag composition consisting essentially of, by weight, about 20% to 40% alumina, about 25% to 50% calcium oxide, with the alumina content not exceeding the calcium oxide content by more than 5 weight percent, about 5% to about 20% magnesium oxide, about 3% to about 10% sodium oxide, and about 10% to about 30% of an alkaline earth fluoride.

3,444,011

LOW-TEMPERATURE TOUGH STEEL

Shinichi Nagashima, Kitakyushu, Takayuki Ooka, Tokyo, Hiroshi Mimura, Kawasaki, and Toshiyuki Fujishima, Kitakyushu, Japan, assignors to Yawata Iron & Steel Co., Ltd., Tokyo, Japan, a corporation of Japan

Filed Nov. 18, 1964, Ser. No. 412,111
Claims priority, application Japan, Nov. 18, 1963, 38/61,988
Int. Cl. C22c *39/44, 41/02;* C21d *1/18*
U.S. Cl. 148—31 6 Claims



The present invention relates to a heat-treated low-temperature tough steel which contains 0.01 to 0.15% C, 0.05 to 0.40% Si, 4.50 to 7.50% Ni, 0.50 to 3.5% Mn, 0.001 to 0.050% N and less than 0.05% acid-soluble Al, the rest being Fe and accompanying impurities, the structure of the steel being that of a finely dispersed austenite structure in a ferrite matrix. In the composition of the present invention, Mo may be preferably added thereto, and Al may be replaced by a member of the group of Zr, Ti, Be, Hf, Ta and B.

3,444,012

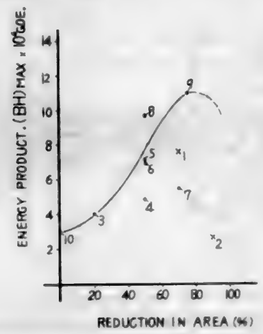
PROCESS FOR TREATING PLATINUM-IRON PERMANENT MAGNET ALLOYS FOR IMPROVING THEIR MAGNETIC PERFORMANCE

Shotaro Shimizu and Kuniyoshi Watai, Tokyo, Japan, assignors to Citizen Tokei Kabushiki Kaisha, Shinjuku, Tokyo, Japan, a corporation of Japan

Filed June 22, 1965, Ser. No. 465,894
Claims priority, application Japan, July 10, 1964, 39/39,397
Int. Cl. H01f *1/04;* C22c *5/00;* C22f *1/14*
U.S. Cl. 148—101 8 Claims

A process for treating platinum-iron alloys of the super lattice type for improving their magnetic characteristics comprising the steps of cold working a platinum-iron alloy body, to transform it from an ordered crystalline state to a substantially fully disordered state, and then subjecting said body to aging at a temperature between 400° C. and 500° C. during a predetermined period to produce in said body a final state which is partially ordered and partially disordered. Said body may include from 1–8% by weight of one or more of the elements selected

from the group composed of Li, Os, Pd, Rb, Ni, Co, Au, Ag, Cu and H. Comminuting said body into a powder,



forging, rolling, and swaging are disclosed as methods of cold working.

3,444,013

HIGH-VELOCITY GUN PROPELLANTS CONTAINING SOLID NITROGEN HYDRIDES OR BORON COMPOUNDS

Joseph Green, Dover, and Paul F. Schaeffer, Denville, N.J., assignors to Thiokol Chemical Corporation, Trenton, N.J., a corporation of Delaware

No Drawing. Filed Dec. 3, 1964, Ser. No. 416,683
Int. Cl. C06b *15/00*
U.S. Cl. 149—22 5 Claims

1. A gun propellant comprising granules of a mixture of a gas-forming constituent consisting of at least one member selected from the group consisting of hydrogen-nitrogen-boron compounds and normally solid nitrogen hydrides and a minor amount of a molding lubricant.

3,444,014

GELLED AQUEOUS NITRIC ACID COMPOSITION AND METHOD OF MAKING SAME

Joseph D. Chrisp, Ashbourne Hills, Claymont, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 8, 1967, Ser. No. 659,034
Int. Cl. C06b *1/00*
U.S. Cl. 149—45 14 Claims

Nitric acid compositions gelled by reacting in situ an acrylic polymer, and preferably polyacrylamide, with a metal ion having a postive valence of from 2 to 6 and selected from chromium, vanadium, manganese, titanium, antimony, zirconium and scandium. Explosive compositions are provided by the presence of fuels and/or sensitizers in the gelled nitric acid to form compositions having an oxygen balance of about from −25 to +10%.

3,444,015

METHOD OF ETCHING TANTALUM

Evelyn B. Baker, West Chester, and Walter O. Freitag, Conshohocken, Pa., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 4, 1965, Ser. No. 437,290
Int. Cl. C23f *1/02*
U.S. Cl. 156—11 1 Claim

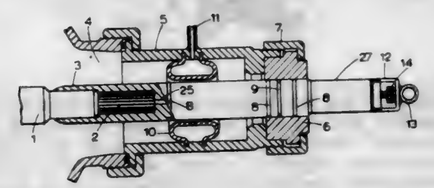
In accordance with this invention it has been found that fuming sulfuric acid or oleum is an improved etchant for tantalum. More particularly, in accordance with this invention it has been found that in an operation wherein a tantalum surface, such as a tantalum surface presented by metallic tantalum deposited on an inert substrate, is etched by the application of a liquid etchant thereto, improved results are obtained by employing fuming sulfuric acid as the etchant.

3,444,016

SHEATHING OF ELECTRIC CABLES

John Alfred Baskwell, St. Cross, Winchester, Hants, England, assignor to Pirelli General Cable Works Limited, London, England, a British company

Filed Sept. 9, 1963, Ser. No. 307,486
Claims priority, application Great Britain, Sept. 19, 1962, 35,658/62
Int. Cl. H01b *13/06, 13/22, 17/34*
U.S. Cl. 156—48 3 Claims



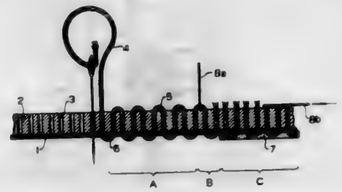
Process for producing sheathed oil-filled electric cables by attaching plugs to both ends of a cable core, inserting the cable core in a tank to effect drying thereof under vacuum, passing the dried cable from the tank through an evacuated tube and a sheathing machine and extruding a sheath around the core while maintaining the core under vacuum. The sheathed core is then filled with oil through the plug.

3,444,017

PROCESS FOR MAKING A PILE FABRIC

Hubert Kleinermanns, 21–23 Bogenstrasse, 2057 Reinbek, Germany

Filed Oct. 21, 1965, Ser. No. 499,765
Claims priority, application Germany, Oct. 24, 1964, K 54,344; Apr. 23, 1965, K 55,897; Sept. 30, 1965, K 57,265
Int. Cl. D04h *11/04, 11/08*
U.S. Cl. 156—72 8 Claims



Method of making pile thread rugs, comprising repeatedly passing in opposite directions a continuous length of pile thread through adjacent perforations in a plate member having a thickness corresponding to the length of the desired pile to thereby form a plurality of rows of loops on both sides of the plate member, glueing together the loops on one side of the plate member to form a pile thread web, severing the loops on the other side of the plate member along a predetermined plane and withdrawing the thread web from the plate member.

3,444,018

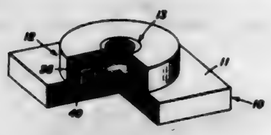
METHOD OF MOUNTING FASTENING ELEMENTS ON THERMOPLASTIC MATERIALS BY FRICTION WELDING

Eugene E. Hewitt, Walkerton, Ind., assignor to Uniroyal, Inc., a corporation of New Jersey

Filed Feb. 25, 1966, Ser. No. 530,128
Int. Cl. B32b *31/10, 7/08;* B29c *27/08*
U.S. Cl. 156—73 6 Claims

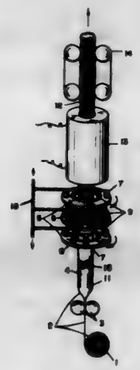
1. A method of mounting a fastening element to the surface of a first thermoplastic member, comprising the steps of embedding said fastening element in a second ther-

moplastic member; pressing a surface of said second thermoplastic member against said surface of said first thermoplastic member; rotating one of said thermoplastic members relative to the other of said members while maintaining said contacting surfaces under pressure to



frictionally heat said surfaces to a molten condition; and, thereafter, stopping said rotation while maintaining said contacting surfaces under pressure until the molten thermoplastic materials solidify, whereby said second thermoplastic member and said fastening element become fixedly joined to said first thermoplastic member.

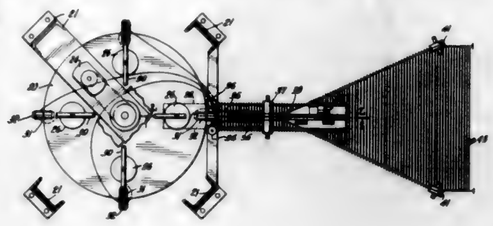
3,444,019
METHOD FOR THE MANUFACTURE OF REINFORCED PLASTIC PIPES
Frederik W. Storm van Leeuwen, Delft, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Feb. 3, 1964, Ser. No. 341,933
Claims priority, application Netherlands, Feb. 8, 1963, 288,716
Int. Cl. B65h *81/04*; B65c *3/26*; B29c *17/02*
U.S. Cl. 156—156 **5 Claims**



2. A method for the continuous manufacture of plastic pipes comprising moving a tubular film vertically upwards, closing the tubular film at the lower end portion thereof, filling said closed film portion over at least a part of the path to be traversed by the tubular film with a non-cohesive weighting material, and applying threads impregnated with a hardenable synthetic resin around the tubular film, at the point of circular cross-section of the expanded tubular film which resin is subsequently hardened.

3,444,020
METHOD AND APPARATUS FOR CROSS-LAYING FIBROUS MATERIAL
Frank Kalwaites, Somerville, N.J., assignor to Johnson & Johnson, a corporation of New Jersey
Filed July 16, 1965, Ser. No. 472,503
Int. Cl. B32b *5/12*
U.S. Cl. 156—169 **7 Claims**

Method and apparatus for manufacturing a layer of cross-laid fibrous material by forming a series of horizontal loops of material and conveying these loops in a straight path. The leading edge of each loop is raised out of the plane of the trailing edge and the leading edge is gripped at two points on the loop in close proximity



to each other. The loops are cut between the gripped points and the cut ends moved in a diverging path to open the loop and form a flat strand.

3,444,021
SINTERING METHOD
William George Bilbe, Sutton-at-Hone, near Faringham, England, assignor to Istag A.G. Suhr/AG, Suhr, Aargau, Switzerland
No Drawing. Filed Apr. 5, 1966, Ser. No. 540,184
Claims priority, application Great Britain, Apr. 6, 1965, 14,536/65
Int. Cl. B32b *15/04, 31/26*
U.S. Cl. 156—242 **13 Claims**

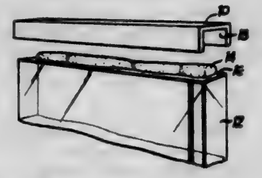
The present invention concerns a process for obtaining a sintered article having a refractory backing layer. This layer makes it possible to bond the article by means of an adhesive to a substrate, e.g., a glass or a metal surface. According to the process, a first layer, consisting of refractory particles in a matrix of an organic binder capable of carbonizing upon heating to a temperature below 385° C., e.g. an oil, is contacted with a second layer, consisting of granular polytetrafluorethylene, under sufficient pressure to create a physical adherent bond between the said first and second layers, and thereafter the resultant bonded layers are heated at an elevated temperature below 385° C. to carbonize the binder and sinter the bonded layers.

3,444,022
METHOD OF ALUMINUM-PLASTIC LAMINATE FORMING
Heinz F. Bichsel, Neuhausen am Rheinfall, Switzerland, assignor to Swiss Aluminium Ltd., Chippis, Switzerland, a corporation of Switzerland
No Drawing. Filed Sept. 27, 1965, Ser. No. 490,646
Claims priority, application Switzerland, Sept. 29, 1964, 12,665/64
Int. Cl. C09j *5/00*
U.S. Cl. 156—281 **8 Claims**

Preparation for forming of a plastic coated aluminum alloy sheet, which latter includes 2–8% zinc and .3–5% magnesium and that can be hardened by solution annealing, quenching or aging, has the steps of coating the metal sheet with a thermoplastic layer, and immediately before the forming heating at least the metal sheet for a short time to a temperature of at least 180° C.

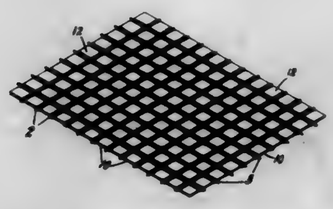
3,444,023
METHOD FOR BEDDING PANELS INTO FRAMES
Howard J. Shockey, Elkhart, Ind., assignor to Excel Corporation, Elkhart, Ind., a corporation of Indiana
Filed Mar. 16, 1966, Ser. No. 534,910
Int. Cl. B29d *23/04*; B29c *17/14, 27/16*
U.S. Cl. 156—293 **9 Claims**

1. A method of bedding a panel into a frame member comprising the steps of forming a tubular mass of bedding material having a liquid core and a solid membrane surrounding and encasing said liquid core, placing said tubular mass of bedding material between a marginal edge of said panel and a frame member having a recess in which said panel is to be bedded, said bedding material being curable by heat to a solid form wherein it is adherent to said panel and said frame member, inserting



said marginal edge of said panel into said recess of said frame member with said tubular mass of bedding material contacting said panel edge and the surface of said frame member within said recess, and heating the bedding material in said frame member to cure the same to a solid form throughout and thereby bond the bedding material to said panel member and to said frame member to provide a bed for said panel in said frame member.

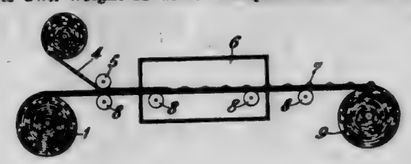
3,444,024
PROCESS FOR BONDING NON-WOVEN SCRIM
Kenneth M. Hillas, Boonton, N.J., assignor to Union Carbide Corporation, a corporation of New York
Filed Dec. 21, 1965, Ser. No. 515,409
Int. Cl. B32b *31/26*
U.S. Cl. 156—306 **6 Claims**



1. A process for bonding non-woven scrim which comprises covering a non-woven scrim composed of at least two unbonded layers of essentially parallel spaced-apart strands with a layer of thermoplastic resin and then, while said resin covered scrim rests on a flat surface, heating said layer of thermoplastic resin at a temperature above the heat deformation temperature and below the melting temperature of the resin for a period of time sufficient to cause the layer of resin to deform under its own weight so as to conform to the upper surfaces of the strands of the scrim without the formation of openings in said resin layer, said flat surface preventing said resin sheet from sinking below the plane of said scrim, and then cooling the covered scrim below the heat deformation temperature of the resin.

3,444,025
METHOD OF BONDING NON-WOVEN SCRIM
Kenneth M. Hillas, Boonton, N.J., assignor to Union Carbide Corporation, a corporation of New York
Filed Dec. 21, 1965, Ser. No. 515,474
Int. Cl. B32b *31/26*
U.S. Cl. 156—306 **7 Claims**

1. A process for bonding non-woven scrim which comprises covering a non-woven scrim composed of at least two unbonded layers of essentially parallel spaced-apart strands with a layer of thermoplastic resin and then heating said layer of thermoplastic resin at a temperature above the melting temperature of the resin for a period of time sufficient to cause the layer of resin to deform under its own weight so as to collapse around and thus

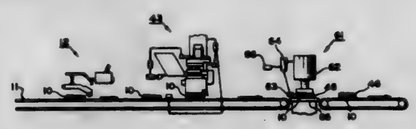


coat the strands of said scrim, thereby forming openings in the resin layer between the thus-coated strands of scrim, and then cooling the coated scrim below the heat deformation temperature of the resin.

3,444,026
ADHESIVE PROPERTIES OF AMINE TERMINATED POLYAMIDE RESINS
Dwight E. Peerman, Minneapolis, Minn., assignor to General Mills, Inc., a corporation of Delaware
No Drawing. Filed Jan. 12, 1966, Ser. No. 520,092
Int. Cl. C09j *3/12*
U.S. Cl. 156—331 **10 Claims**

There is disclosed a method of adhesively bonding non-leather materials such as rubber, neoprene, Neolite and chlorosulfonated polyethylene to itself as well as to other substrates, by the use of amine-terminated polymeric fat acid polyamides.

3,444,027
APPARATUS FOR ADHESIVELY BONDING A METAL PLATE TO A REFRACTORY BRICK
Charles C. Smith, Mexico, Mo., and Everett E. Ely, Salinas, Calif., assignors to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
Filed Apr. 23, 1965, Ser. No. 450,456
Int. Cl. B05c *5/02*; B32b *15/04*
U.S. Cl. 156—357 **4 Claims**

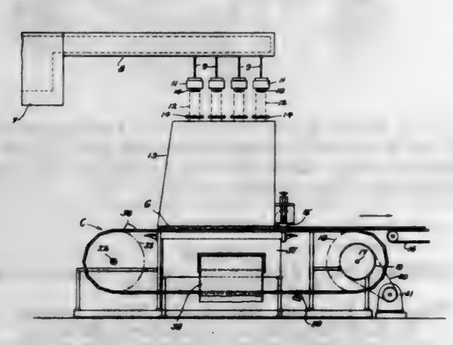


An apparatus for applying a metal plate, especially an L-plate, to a refractory brick or block, in a continuous mode whereby an adhesive is applied to the surface thereof, the brick then draws an L-plate onto its adhesive-bearing surface in its forward motion from a supply or magazine of such plates, and thereafter pressure means maintain the plate against the brick until the adhesive is set.

3,444,028
EQUIPMENT FOR USE IN LAYING DOWN GLASS FIBER BLANKET
Robert E. Belfield, East Islip, and Arthur C. Vogel, Glen Cove, N.Y., assignors to Certain-Teed Saint Gobain Insulation Corporation, Ardmore, Pa., a corporation of Maryland
Continuation of abandoned application Ser. No. 183,301, Mar. 28, 1962. This application Oct. 1, 1964, Ser. No. 400,853
Int. Cl. B29j *1/00*; B65g *45/00*
U.S. Cl. 156—371 **10 Claims**

Conveyor for use in collecting glass fibers to which a heat hardenable liquid resin binder has been applied. An endless conveyor is comprised of pivotally inter-

connected flights, each formed of a plurality of supporting bars arranged in spaced apart, side-by-side relationship. The spaces between the bars provide open channels extending throughout the conveyor loop and through which gases can pass. One end of each bar is beveled and the axes of pivotal interconnection between adjacent

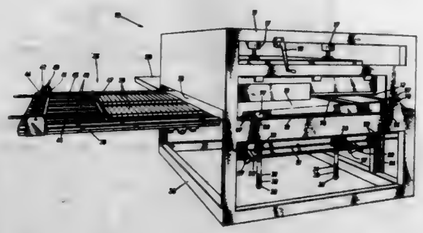


flights lie substantially in the plane of the fiber supporting surfaces of the bars, so that the fiber supporting surface is uninterrupted in the direction of conveyor travel. Toothed elements project into the open channels in the return run of the conveyor in order to dislodge any accummulations of resin and fiber glass from the flights.

3,444,029
WOOD PANEL PRESS

Edward H. Renaud, Waterloo, Ontario, and William W. R. Gilpin, Kitchener, Ontario, Canada, assignors, by mesne assignments, to Radyne Ltd., Workingham, England

Filed Mar. 16, 1966, Ser. No. 534,706
Int. Cl. B30b *7/04*
U.S. Cl. 156—380 **9 Claims**

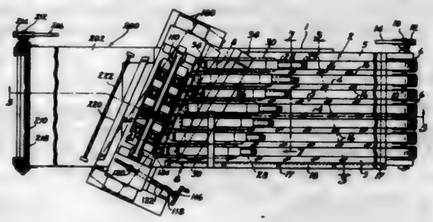


1. A press for laterally compressing together elongated panel components, the press comprising:
a frame,
a generally horizontal upper platen mounted on the frame and capable of being adjusted to and fixed at different vertical locations with respect to the frame,
a lower platen parallel with the upper platen and vertically movable upwardly toward and downwardly away from the upper platen,
feed means adapted to introduce panel components between said platens along a substantially horizontal plane which is fixed with respect to the frame,
the lower platen being adapted to rest, during the introduction of panel components between the platens, at a vertical location wherein it is substantially aligned with said plane, in which condition the platens are open,
first means for selectively exerting an upward force upon the lower platen for selectively displacing the latter from said vertical location upwardly toward the upper platen to close the platens, thereby vertically to compress between the platens panel components introduced therebetween,
and second means for selectively horizontally compressing together panel components that are between the closed platens.

3,444,030
CONVEYER LENGTH ADJUSTMENT MECHANISM

Virgil E. Henley, Akron, Ohio, assignor to The General Tire Rubber Company, a corporation of Ohio

Continuation-in-part of application Ser. No. 317,556, Oct. 21, 1963. This application May 19, 1966, Ser. No. 551,314
Int. Cl. G03d *15/04*
U.S. Cl. 156—507 **5 Claims**

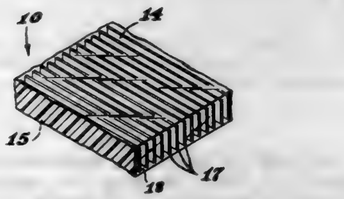


A mechanism is provided for use with a conveyer and which permits ready adjustment of the length of the conveyer. This mechanism includes a pair of length adjustment rollers which are adapted to be moved together in the direction of the conveyer surface, and an additional spring-biased roller adapted to maintain uniform tension on the conveyer belt at all times.

3,444,031
LIGHT SCREENS AND METHOD OF MAKING THE SAME

Walter J. Schrenk, Bay City, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Apr. 22, 1964, Ser. No. 361,686
Int. Cl. B44f *1/04*; **B32b** *27/30, 27/36*
U.S. Cl. 161—3.5 **9 Claims**

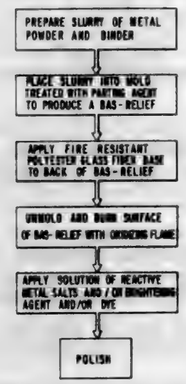


A method and the resulting article of forming a light diffusing panel which includes, extruding a plurality of elongated parallel strips of an optically different synthetic thermoplastic resinous composition in a thermoplastic resinous matrix so as to encapsulate said strips.

3,444,032
METALLIC SCULPTURED BAS-RELIEF ARTICLE AND METHOD OF FORMING THE SAME

George J. Kreier, Jr., 1524 Cambridge St., Philadelphia, Pa. 19130

Filed Jan. 20, 1966, Ser. No. 521,901
Int. Cl. B32b *15/14, 11/16*; **B29d** *27/00*
U.S. Cl. 161—18 **18 Claims**



A method and the resulting article of forming a decorative panel which includes, applying a slurry of metal powder and binder to the recesses of a patterned mold treated with a parting agent, applying a fire-resistant panel to the back of the molded slurry, curing said slurry and fire-resistant panel to form a bas-relief pattern and flame treating the surface of the cured slurry, after removing the composite panel from the mold, to burn away the binder so as to form a porous metallic pattern upon the fire-resistant panel.

3,444,033
LIGHTWEIGHT ARMOR WITH LAMINATED BASE MEMBER RESISTANT TO DELAMINATION

Harry A. King, Covina, Calif., assignor to Aerojet-General Corporation, Azusa, Calif., a corporation of California

Filed June 22, 1964, Ser. No. 376,935
Int. Cl. B32b *25/14, 27/28*
U.S. Cl. 161—38 **8 Claims**



This disclosure concerns lightweight armor which includes a laminate base member highly resistant to delamination. The laminate base member is formed from a plurality of substantially parallel fibrous reinforcing layers embedded in a resilient polymeric composition. The resilient polymeric composition comprises a resin selected from the group consisting of epoxy resins and phenol-formaldehyde resins and a compatible high molecular weight elastomer selected from the group consisting of acrylonitrile-butadiene copolymers and polyurethane rubbers. A layer of ceramic tiles is adhered to the base member on the side thereof exposed to the impact of a projectile, the ceramic tiles being effective to absorb a substantial portion of the kinetic energy of a projectile by respectively shattering upon the impact of a projectile thereagainst. The projectile then continues into the laminate base member where its remaining kinetic energy is spent. The base member may also have a fire retardant material incorporated therein so that the armor will be highly resistant to combustion thereby being self-extinguishing upon being impacted by an incendiary projectile.

3,444,034
SYNTHETIC RESIN STRUCTURAL PANEL AND METHOD OF MAKING THE SAME

Oscar C. Hewett, Denver, Colo., assignor, by mesne assignments, to Samsonite Corporation, Denver, Colo., a corporation of Colorado

Filed Feb. 1, 1965, Ser. No. 429,586
Int. Cl. B32b *3/02*; **B29c** *17/04*
U.S. Cl. 161—44 **8 Claims**



A structurally rigid panel, comprising opposing, spaced synthetic resin sheet walls having inturned, interconnected peripheral rim portions enclosing an edge of the panel and an array of indrawn knobs extending from each wall to and fused to the inner face of the opposite wall, the array of knobs extending from one wall being a complementary array of the knobs extending from the other wall in alternating sequence thereto in two different directions. Each indrawn knob may be in the general form of a frusto-pyramid, while the array of knobs are preferably in uniformly spaced-apart rows and columns, with the knobs extending from one wall being at the center of the spaces of the knobs extending from the other wall. The process of forming the panels includes forming the knobs by differential air pressure and bringing the knobs against the opposite sheet, to heat weld the ends of the knobs to the opposite sheet. In addition, heat is applied to each sheet from between the sheets, while the sheets are being drawn into molds, which later produce the pressure for fusion or heat welding.

3,444,035
BREATHABLE FABRICS AND METHODS OF PRODUCING THE SAME

Lester P. Bushnell, South Bend, Ind., assignor to Uniroyal, Inc., a corporation of New Jersey

Filed Sept. 13, 1965, Ser. No. 486,724
Int. Cl. D03d *3/04*; **B32b** *3/02, 5/22*
U.S. Cl. 161—73 **26 Claims**



A laminar breathable fabric composed of a top layer constituted by a plated knit fabric of thermoplastic and non-thermoplastic fiber materials, and a bottom layer constituted by a back-up fabric of non-thermoplastic fiber material, bonded to one another by an intermediate layer of adhesive. The plated fabric is so knit that substantially only the thermoplastic fiber component is exposed at one face and substantially only the non-thermoplastic component at the other face of the plated fabric, and the back-up fabric is bonded to the face of the plated fabric constituted by the non-thermoplastic component. The entire laminate may be embossed under heat and pressure to produce a pattern of impressions and raised portions at the top face, imparting thereto a three-dimensional character.

3,444,036

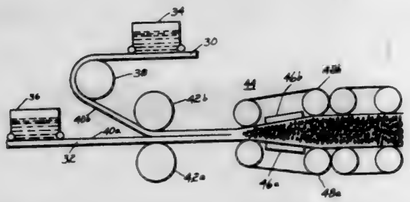
STRUCTURE HAVING AN INTERNAL CELLULAR CORE AND ITS MANUFACTURE

David A. Russell, Wilbraham, Mass., and Edgar E. Hardy, Kettering, Ohio, assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Continuation-in-part of application Ser. No. 272,540, Apr. 12, 1963. This application May 10, 1966, Ser. No. 548,905

Int. Cl. B32b *5/18, 3/26*

U.S. Cl. 161—161 4 Claims



Lightweight structures having an improved combination of insulating and structural characteristics are prepared by exposing a plastic surface to a volatile, absorbable medium until the medium is absorbed partially through the plastic, intimately contacting at least a portion of the treated plastic surface with a second plastic surface which may or may not have been similarly treated, and subjecting the resulting assembly to a temperature at least as high as the gas transition temperature of the volatile medium to form an integral unit comprising a pair of substantially non-cellular plastic layers and an internal cellular core.

3,444,037

WATER RESISTANT POLYVINYL ACETATE ADHESIVE COMPOSITIONS

Walter B. Armour, Plainfield, N.J., assignor to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 8, 1965, Ser. No. 462,393

Int. Cl. B32b *27/04, 27/06*

U.S. Cl. 161—198 11 Claims

An adhesive composition capable of yielding dry films characterized by their optimum water resistance; said composition comprising a mixture of a vinyl acetate polymer emulsion, a sulfonated B-stage phenolic resin and an acidic, metal salt curing agent.

3,444,038

NUCLEAR POWER STATION WITH CARBON DIOXIDE COOLING SYSTEM

Hans-Peter Schabert, Eriangen, Germany, assignor to Siemens Aktiengesellschaft, a corporation of Germany

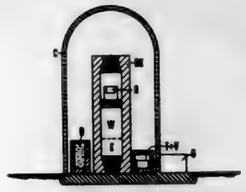
Filed July 7, 1967, Ser. No. 651,876

Claims priority, application Germany, July 9, 1966, S 104,720

Int. Cl. G21d *1/04*

U.S. Cl. 176—60 15 Claims

Nuclear power station with carbon dioxide cooling system for producing electrical energy includes at least one gas turbine connected to a compressor and disposed upstream of the coolant gas inlet to the reactor, a regenerative heat exchanger connected in the coolant gas line between the compressor and the gas turbine, the primary loop of the regenerative heat exchanger being traversed by heated coolant issuing from the reactor either directly or after being relatively slightly reduced in pressure, the coolant further traversing a cooler connected in the primary loop, the coolant entering the compressor



having a pressure within a range of at least 40 atmospheres absolute and 130 atmospheres absolute.

3,444,039

FREEZABLE LIVE CELL DILUENT AND PROCESS

Ambrose Harry Jesudasan Rajamannan, Anoka, Minn. (103 Landmark Drive, Eastern Heights, Ithaca, N.Y. 14850)

No Drawing. Filed Dec. 14, 1964, Ser. No. 418,304

Int. Cl. C12k *9/00;* A01n *1/02*

U.S. Cl. 195—1.8 18 Claims

This disclosure provides new and freezable diluent preservative material for live cells. The preservative material comprises dry and water soluble preparations of buffered polysaccharides, for example derivatives of partially hydrolyzed starches and essentially such water soluble buffered polysaccharides with or without modification, as including a water soluble extract of dried egg yolk solids therewith.

3,444,040

PROCESS FOR PRODUCING PURINE NUCLEOSIDE-5'-TRIPHOSPHATES

Takashi Nara, Tokyo, Masanaru Misawa, Kawasaki-shi, and Toshio Komuro, Machida-shi, Japan, assignors to Kyowa Hakko Kogyo Co., Ltd., Tokyo, Japan, a corporation of Japan

No Drawing. Filed Feb. 3, 1966, Ser. No. 524,827

Claims priority, application Japan, Feb. 11, 1965, 40/7,288

Int. Cl. C12b *1/00*

U.S. Cl. 195—28 12 Claims

An improvement in the production of purine nucleoside-5'-triphosphates by the cultivation of microorganisms belonging to *Brevibaceterium ammoniagenes* which comprises conducting the fermentation in the presence of an organic carboxylic acid, such as citric acid, acetic acid, succinic acids, phthalic acid and the like, an organic solvent, such as an organic alcohol, ester, ketone, ether or aromatic hydrocarbon, a purine base, such as 8-azadenine,8-chloroxanthine, 2-thioadenine or 2-thio-6-hydroxypurine, or a surfactant, or mixtures thereof. The fermentation may be conducted under aerobic conditions with the addition of adenine or adenosine, or guanine or guanosine.

3,444,041

IN VITRO SYNTHESIS OF RIBONUCLEIC ACIDS AND ENZYME THEREFOR

Solomon Spiegelman and Ichiro Haruna, Champaign, Ill., assignors to University of Illinois Foundation, Urbana, Ill., a corporation of Illinois

Continuation-in-part of application Ser. No. 509,458, Sept. 29, 1965. This application Mar. 18, 1966, Ser. No. 535,596

Int. Cl. C12d *13/06*

U.S. Cl. 195—28 18 Claims

Biologically active nucleic acids are synthesized in vitro in an enzymatic system from nucleotide bases and a biologically active nucleic acid template.

3,444,042

PURIFIED REPLICASES AND THEIR USES

Solomon Spiegelman and Ichiro Haruna, Champaign, and Norman R. Pace, Urbana, Ill., assignors to University of Illinois Foundation, Urbana, Ill., a corporation of Illinois

Filed June 23, 1966, Ser. No. 559,933

Int. Cl. C08b *19/00;* C12k *1/10;* C12d *13/10*

U.S. Cl. 195—28 17 Claims

Biologically active nucleic acids are synthesized in vitro from nucleotide bases and a purified replicase free of detectable destructive contaminants and substantially free of viral infectivity.

3,444,043

INTERFERENCE WITH BIOLOGICALLY ACTIVE RNA FORMATION

Solomon Spiegelman, Champaign, Ill., assignor to University of Illinois Foundation, Urbana, Ill., a corporation of Illinois

Filed Sept. 30, 1966, Ser. No. 583,365

Int. Cl. C12k *1/10*

U.S. Cl. 195—28 6 Claims

The formation of homologous intact viral RNA is interfered with by an inhibiting compound which interferes with the recognition mechanism between said RNA the specific replicase for said RNA.

3,444,044

REPLICATION OF MUTANT NUCLEIC ACIDS

Solomon Spiegelman, Champaign, Ill., assignor to University of Illinois Foundation, Urbana, Ill., a corporation of Illinois

Filed Apr. 21, 1967, Ser. No. 632,740

Int. Cl. C12d *13/06;* C08b *15/06*

U.S. Cl. 195—28 15 Claims

Biologically active mutants of nucleic acids are synthesized in vitro in an enzymatic system from nucleotide bases, and a biologically active nucleic acid template.

3,444,045

PROCESS FOR PURIFYING STREPTOKINASE

Edward Clarence Derenzo, Hillsdale, and Paul Hadley Bell, Ridgewood, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Sept. 20, 1966, Ser. No. 580,584

Int. Cl. C12d

U.S. Cl. 195—66 10 Claims

Streptokinase is purified by partially purifying impure streptokinase by admixing with a phosphate buffer (0.15–0.25 M), contacting the mixture with DEAE-cellulose whereby some of the impurities are removed on the DEAE-cellulose while the streptokinase is retained in the filtrate, repeating the first treatment using a 0.1–0.15 M phosphate buffer whereby a pure streptokinase is eluted.

3,444,046

METHOD FOR PRODUCING COKE

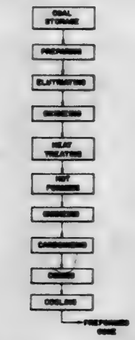
Earl V. Harlow, Towson, Md., assignor to Koppers Company, Inc., a corporation of Delaware

Filed Feb. 4, 1965, Ser. No. 430,360

Int. Cl. C10l *5/02;* C10b *45/02*

U.S. Cl. 201—6 5 Claims

In accordance with the invention, coal, which may be a low-grade variety, is dried and pulverized to a suitable particle size. The coal is then elutriated to remove undesirable fines and is then partially oxidized. Thereafter the coal is heated to reduce volatile matter, is hot-formed into briquettes or other shapes, is oxidized again to produce a thin surface layer on the shape, is carbonized, and finally is cooled.



3,444,047

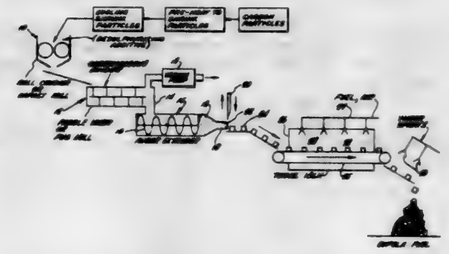
METHOD FOR MAKING METALLURGICAL COKE

Thomas J. Wilde, 3300 Greenmeadow Drive, Fullerton, Calif. 92631

Continuation-in-part of application Ser. No. 547,683, April 1, 1966. This application Mar. 4, 1968, Ser. No. 714,398

Int. Cl. C10b *53/08, 49/04*

U.S. Cl. 201—6 10 Claims



Metallurgical coke is made from carbon particles by heating the particles to shrink them. Thereafter, the shrunk carbon particles are mixed with a carbonaceous binder and formed into lumps which are heated in a nonoxidizing atmospher to drive off volatiles and carbonize the binder.

3,444,048

CONTINUOUS COKING APPARATUS

Gerhard Schmeling, Cologne-Dellbruck, Werner Peters, Wattenscheid, and Kurt Kleisa, Essen-Frintrop, Germany, assignors to Bergwerksverband G.m.b.H., Essen, Germany

Filed Jan. 19, 1967, Ser. No. 610,451

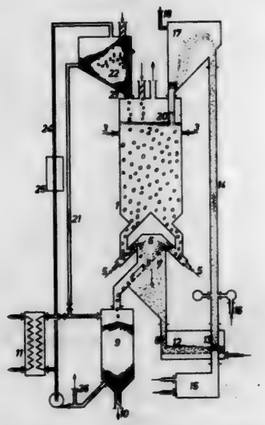
Claims priority, application Germany, Jan. 20, 1966, B 85,477

Int. Cl. C10b *49/04, 1/04*

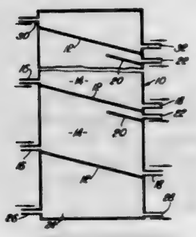
U.S. Cl. 202—121 14 Claims

An apparatus for coking coal briquettes and the like by means of finely particulate solid heat exchange material moving in a closed cycle wherein a mixture of the material to be coked and of hot heat exchange material is formed in the upper portion of an upright shaft so that coking is carried out during downward movement of the mixture through the shaft, the coked briquettes or the like are separated from the particulate, now somewhat cooled heat exchange material and the separated

heat exchange material is pneumatically conveyed to the upper portion of the shaft by means of a hot conveying gas so that during movement of the particulate heat exchange material towards the upper portion of the shaft, the heat exchange material is again heated in contact with the hot conveying gas.

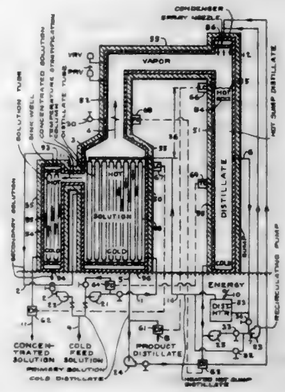


3,444,049
VERTICAL MULTISTAGE DISTILLATION APPARATUS
Roy Starmer and Malcolm Hutchinson, Northumberland, England, assignors, by mesne assignments, to Weir Westgarth Limited, Glasgow, Scotland, a British company
Filed Aug. 23, 1962, Ser. No. 219,012
Int. Cl. C02b *1/06*; B01d *3/28*
U.S. Cl. 202—172 11 Claims



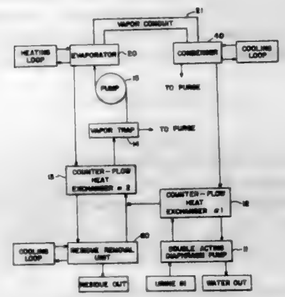
1. Distillation apparatus comprising a vessel, partitions in said vessel dividing it into a series of distillation compartments disposed one above the other, with each succeeding compartment maintained at a lower pressure than the lower one preceding it, said partitions providing heat transfer surfaces between the compartments, liquid flow-controlling means feeding a moving film of liquid to be evaporated onto a first surface of each of said partitions, and distillate-collecting means disposed to receive distillate condensing on a second surface of each of said partitions at the opposite side of said partition to said first surface, said first and second surfaces of each partition constituting respective bounding walls of two consecutive compartments in the series of which two consecutive compartments that which is bounded by said first surface is maintained at a lower pressure than that which is bounded by said second surface, vapor generated in each compartment except the bottom, from the liquid film on said first surface of the respective partition whose first surface bounds said compartment, traversing the compartment and condensing on said second surface of the next partition in series thereby to evaporate liquid at a lower pressure from the film on said first surface of said next partition in the next upper compartment and means for heating the first surface of the lowermost partition.

3,444,050
DISTILLAND HEATING WITH HOT DISTILLATE
Charles T. Sundquist, 12566 SE. 53rd St., Bellevue, Wash. 98004
Filed Aug. 29, 1966, Ser. No. 575,689
Int. Cl. C02b *1/06*; B01d *3/00*
U.S. Cl. 202—177 18 Claims



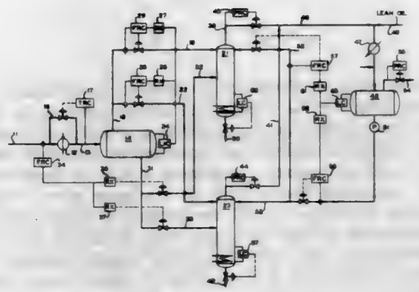
Hot distillate recovered from a distillation process is further heated to a temperature close to its boiling point and employed as the heating medium for distillation of a sea water feed. The feed concentrate is then heat exchanged with cold feed for preheating the latter. A portion of the distillate is recycled in direct contact with the vapor of distillation to condense the vapor.

3,444,051
RECOVERY OF POTABLE WATER FROM HUMAN WASTES IN BELOW-G CONDITIONS
Dan C. Popma, Hampton, and Vernon G. Collins, Poquoson, Va., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Mar. 8, 1967, Ser. No. 621,715
Int. Cl. C02c *1/00, 3/00*; B01d *3/00*
U.S. Cl. 202—182 9 Claims



This invention relates to a phase change system for recovering potable water from human waste fluids and wash water under gravitational conditions of from zero to one G and relates in particular to a unique water still system free of any moving parts and having a zero-G capability and the provision for continuous removal of dissolved solids from the waste waters.

3,444,052
FLASH VAPORIZATION WITH VAPOR FLOW STREAMS CONTROLLED BY LIQUID LEVEL
Robert C. Bracken and De Wayne Maddox, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Dec. 11, 1967, Ser. No. 689,548
Int. Cl. B01d *3/42*
U.S. Cl. 203—1 4 Claims



Flash vapor flow is controlled in response to the liquid level in the flash zone and flash liquid flow is controlled in response to flow of feed to the flash zone.

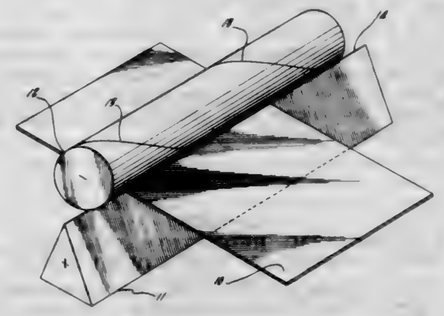
3,444,053
DISTILLATION OF 2-PHENYLALLYL ALCOHOL AT REDUCED PRESSURE AND IN PRESENCE OF AN INHIBITOR
Donald L. de Vries, South Holland, and Carl E. Nygren, Markham, Ill., assignors to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed May 3, 1968, Ser. No. 726,543
Int. Cl. B01d *3/10, 3/34*; C07c *29/26*
U.S. Cl. 203—6 12 Claims

On distillation of 2-phenylallyl alcohol from a mixture containing 2-phenylallyl alcohol and a high boiling chlorohydrocarbon, such as a hydrolysate mixture resulting from hydrolysis of the product obtained from partial chlorination of alpha-methylstyrene, the 2-phenylallyl alcohol is isomerized and becomes contaminated with the isomerization product, 2-phenylpropionaldehyde, thereby reducing the yield of 2-phenylallyl alcohol. This isomerization is decreased and the 2-phenylallyl alcohol separated and purified by distillation from the hydrolysate mixture under reduced pressure below 760 mm. to about 20 mm. Hg, preferably below about 200 to about 100 to 20 mm. Hg, and in contact with a small, effective amount of an alkaline metal carbonate, such as sodium carbonate, potassium carbonate and the like or a trialkanolamine of higher boiling point then 2-phenylallyl alcohol, such as triethanolamine, as an isomerization inhibitor. Fractional distillation can be initially employed or the crude alcohol distilled off and then fractionally distilled, with each distillation being carried out under reduced pressure in contact with the isomerization inhibitor, usually in amount of about 0.4 to 6 or more weight percent, and preferably about 2 or 3 to 5 weight percent, based on the 2-phenylallyl alcohol being distilled.

3,444,054
EVAPORATOR SALINE FEED WATER TREATMENT FOR SCALE CONTROL
Murrell L. Salutsky, Highland Park, Ill., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
No Drawing. Filed Nov. 23, 1966, Ser. No. 596,405
Int. Cl. C23f *14/02*; B01d *1/00*
U.S. Cl. 203—7 9 Claims

Process for evaporating saline water comprising maintaining a scale-inhibiting water-soluble salt of a meth-acrylic acid polymer in the said water, and evaporating the said water.

3,444,055
ELECTROLYTIC RECORDING MEDIUM
Irving Lieblich, Elmhurst, N.Y., assignor to Hogan Faximile Corporation, Los Angeles, Calif., a corporation of New York
Filed Oct. 27, 1966, Ser. No. 590,019
Int. Cl. B41m *5/20*
U.S. Cl. 204—2 11 Claims



1. An electrolytic recording medium comprising a sheet impregnated with an electrolytically-conducting solution containing at least 0.4 percent of catechol oxalate.

3,444,056
NICKEL ELECTROPLATING ELECTROLYTE
Carl Richter, Schaffhausen, Switzerland, and Raymond Erdmann, Saint-Mande, France, assignors to Cilag-Chemie, a corporation of Switzerland
No Drawing. Filed June 24, 1966, Ser. No. 560,107
Int. Cl. C23b *5/08, 5/46*
U.S. Cl. 204—49 4 Claims

An electrolyte for electrodepositing levelled and lustrous nickel comprising as additive either N-methyl-pyridine-3-sulfonic acid betaine or N-allyl-pyridine-3-sulfonic acid betaine.

3,444,057
ELECTROLYTIC REDUCTION OF AROMATIC STEROIDS
Lewis J. Throop, Los Altos, Calif., assignor to Syntex Corporation, Panama, Panama, a corporation of Panama
No Drawing. Filed June 29, 1966, Ser. No. 561,362
Int. Cl. B01k *1/00*
U.S. Cl. 204—59 10 Claims

1. A process for the production of 19-nor-3-oxo steroids which comprises reducing an aromatic steroid by electrochemical reduction at a cathode selected from the group consisting of aluminum, carbon, copper, lead, graphite and platinum in an electrolytic medium comprising a solvent selected from the group consisting of a lower aliphatic amine, liquid ammonia, and mixtures thereof and an electrolyte selected from the group consisting of lithium

chloride, lithium bromide and lithium iodide to obtain the corresponding 2,5(10)-diene steroid, and subjecting said 2,5(10)-diene to acid hydrolysis to obtain said 19-nor-3-oxo steroid.

3,444,058

ELECTRODEPOSITION OF REFRACTORY METALS

Geoffrey W. Mellors, Strongsville, and Seymour Senderoff, Fairview Park, Ohio, assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 609,683, Jan. 16, 1967. This application Apr. 8, 1968, Ser. No. 724,677

Int. Cl. C22d *3/20, 3/14*

U.S. Cl. 204—71 19 Claims

Zirconium, tantalum, columbium, chromium, hafnium, tungsten, molybdenum, vanadium and alloys thereof can be electrodeposited as dense, structurally coherent plates from a solution of the refractory metal fluoride in a molten alkali-fluoride eutectic mixture, having no appreciable concentrations of chlorides, bromides and oxides. The process obeys Faraday's law and provides a coating essentially unalloyed with the substrate material. A soluble anode comprising the metal to be deposited is used. The metal to be deposited must first be present in the melt prior to producing the deposit as an ion in a sufficiently low valence state wherein said metal ion will not attack the deposited metal.

3,444,059

ELECTROLYTIC REDUCTION OF CYCLOPENTANOPHENANTHRENE DERIVATIVES

Lewis J. Throop, Los Altos, Calif., assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed June 27, 1966, Ser. No. 560,800

Int. Cl. B01k *1/00*

U.S. Cl. 204—72 6 Claims

1. A process for the reduction of a conjugated steroidal ketone into a conjugated desoxy polyene steroid which comprises subjecting a conjugated steroidal ketone to electrochemical reduction at a cathode of low hydrogen overvoltage in an electrolytic medium comprising mineral acid electrolyte, water and water miscible, inert organic solvent.

3,444,060

METHOD OF ELECTROLYTICALLY PRECIPITATING CHROMIUM METAL FROM AQUEOUS CHROMIUM (VI) OXIDE SOLUTIONS

Hans Rothmann and Werner Keil, Nuremberg, and Heinz Richter, Furth, Bavaria, Germany, assignors to Gesellschaft fur Elektrometallurgie m.b.H., Dusseldorf, Germany

No Drawing. Filed July 28, 1964, Ser. No. 385,777

Int. Cl. C22d *1/24, 1/00*

U.S. Cl. 204—105 4 Claims

There is provided a process for producing substantially pure chromium for metallurgical purposes by electrolytic deposition. Into an electrolytic solution of chromium (VI) oxide is added an activated, hydrated chromium (III) oxide which is substantially sulphur-free and alkali-free. The rate of addition of the chromium (III) oxide substantially corresponds to the rate of deposition of metallic chromium in the process. The chromium (III) oxide dissolves in the chromium (VI) oxide and is oxidized at the anode to form chromium (VI) oxide and functions as a chromium supplier to the electrolytic solution.

3,444,061

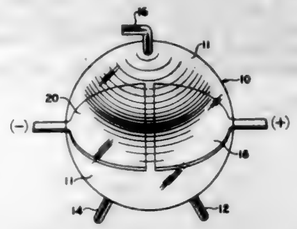
METHOD OF CONDUCTING CHEMICAL REACTIONS IN A GLOW DISCHARGE

Emil J. Hellund, South Laguna, Calif., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

Filed Aug. 22, 1966, Ser. No. 573,928

Int. Cl. B01k *1/00*

U.S. Cl. 204—164 9 Claims



1. A method of subjecting gases to an electrical glow to an edge of the other, said edges comprising major reaction chamber is comprised of a reactant inlet means and a reactant outlet mens separated by electrode means, said electrode means comprising a pair of substantially flat conductive sheets lying in the same plane with an straight line edges of said electrodes and being positioned substantially parallel and equidistant from each other over substantially the entire opposing length thereof, said trode means and a field gradient of about 100 to 10,000 volts per centimeter, passing said gaseous reactant electrode means substantially dividing said reactor into two parts, producing a glow discharge between said electhrough said glow discharge, and subsequently exhaustdischarge comprising the steps of feeding at least one gaseous reactant to a reaction chamber, wherein said ing said gases from said reaction chamber.

3,444,062

HIGH VOLTAGE LIQUID PURIFIER AND METHOD

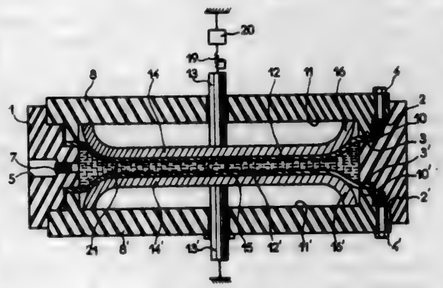
Noel J. Felici, 13 Rue Charles Peguy, and Georges B. Briere, 1 Boulevard Mareschal Joffre, both of Grenoble, France

Filed Apr. 26, 1966, Ser. No. 545,419

Claims priority, application France, Apr. 28, 1965, 4,799

Int. Cl. B01d *13/02*

U.S. Cl. 204—180 18 Claims



A high voltage capacitive assembly having a static body of polar liquid permanently sealed in a fluid-tight container. Two electrically conductive membranes are disposed within the container and are provided with rigid backing members in direct contact with the membranes. The membranes are respectively permeable to positive and negative ions and serve as the electrodes for the assembly.

Upon the application of a high potential across the membranes, an intense field is produced in the polar liquid, and selective migration of positive and negative impurity ions into the membranes takes places, bringing about a depletion of the impurity ions in the liquid. The thus purified liquid exhibits an extremely high dielectric constant.

3,444,063

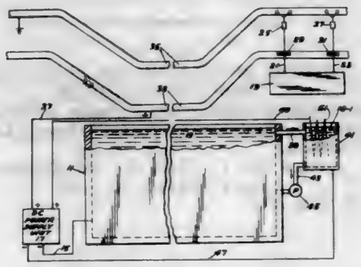
METHOD FOR IMPROVING OPERATIONAL STABILITY OF ELECTROCOATING BATH

George E. F. Brewer, Novi, and Gilbert L. Burnside, Oak Park, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Dec. 6, 1966, Ser. No. 599,438

Int. Cl. C23b *13/00*

U.S. Cl. 204—181 10 Claims



1. In a method for coating an electrically conductive object in an aqueous bath with an organic resin having ionized sites thereon and intimately dispersed within said bath, said method comprising immersing said object within said bath, utilizing said bath as the aqueous electrolyte and said object as a first electrode of an electrical circuit comprising said bath, said first electrode, and a second electrode in contact with said bath and spaced apart from said object, providing a difference of electrical potential between said first electrode and said second electrode sufficient to cause a direct current of electrical energy through said bath and between said first electrode and said second electrode having direction and sufficiency to effect electrodeposition of a coating of said resin upon said object, and removing the resultant coated object from said bath and wherein said bath accumulates an increasing concentration of ionized inorganic materials with continued use, the improvement which comprises placing at least a portion of said bath in contact with and between a cathode and an anode and maintaining a difference of electrical potential between said cathode and said anode which is below the potential required to effect electrodeposition of said resin upon either said anode or said cathode and above that difference of electrical potential required to effect removal from said bath of ionized inorganic material.

3,444,064

METHOD FOR IMPROVING OPERATIONAL STABILITY OF ELECTROCOATING BATH

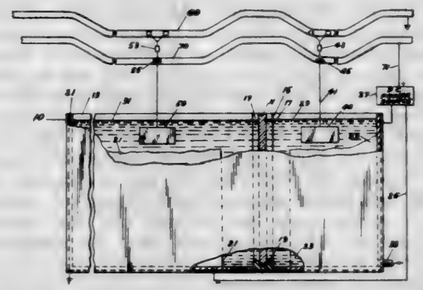
Olin B. Johnson, Livonia, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Dec. 6, 1966, Ser. No. 599,474

Int. Cl. C23b *13/00;* B01k *5/02*

U.S. Cl. 204—181 6 Claims

1. In a method for painting an electrically conductive object in an aqueous coating bath with an electrodepositable paint comprising an organic resin having ionized sites thereon and intimately dispersed within said bath, said method comprising immersing said object within said bath, utilizing said bath as the aqueous electrolyte and said object as a first electrode of an electrical circuit comprising said bath, said first electrode, and a second electrode in contact with said bath and spaced apart from said object, providing a difference of electrical potential between said first electrode and said second electrode sufficient to cause a direct current of electrical energy through said bath and between said first electrode and said second electrode having direction and sufficiency to effect electrodeposition of a coating of said resin upon said object, and removing



the resultant coated object from said bath and wherein said bath accumulates an increasing concentration of ionized inorganic materials with continued use, the improvement which comprises separating said plant from a remainder of said bath, placing said remainder in contact with and between a cathode and an anode, and maintaining a difference of electrical potential between said cathode and said anode which is above the potential required to effect electrodeposition of said resin and returning the thus treated remainder to said bath.

3,444,065

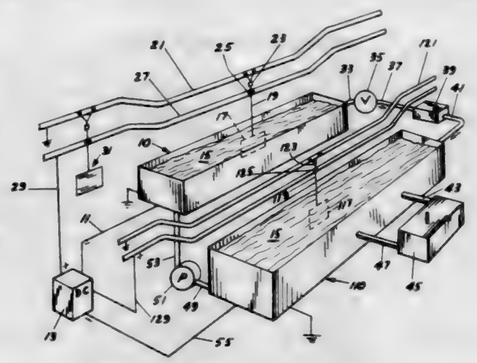
METHOD FOR ELECTRODEPOSITION OF PAINT

Gordon G. Strosberg, Oak Park, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Dec. 7, 1966, Ser. No. 599,958

Int. Cl. B01k *5/02*

U.S. Cl. 204—181 14 Claims



1. In a process for coating a first electrode in an electrical circuit comprising said first electrode, a second electrode of opposite polarity with respect to said first electrode, and an aqueous coating bath between and in contact with said first electrode and said second electrode, which process comprises applying a difference of electrical potential between said first electrode and said second electrode with resultant initiation of direct current of electrical energy through said circuit while there is

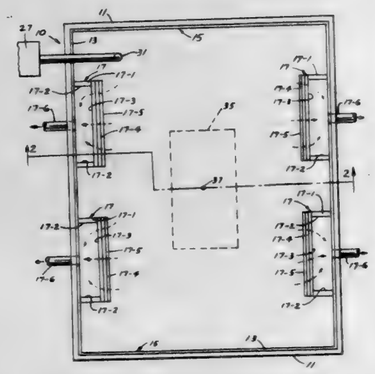
dispersed within said bath in ionized form an organic film-forming resin characterized in that it deposits as a film of essentially even depth upon said first electrode substantially directly proportional to said current and the resultant film deposit exhibits an increase in electrical resistance to said current in direct proportion to the thickness of said film deposit, the improvement which comprises charging a first coating tank with a portion of said coating bath, charging a second coating tank with a second portion of said bath, circulating said coating bath between said first tank and said second tank on a time cycle and at a rate sufficient to prevent the establishment of any substantial chemical or physical gradient between the portion of said bath in said first tank and the portion of said bath in said second tank, positioning said first electrode and said second electrode in spaced apart relationship and in contact with said bath within said first tank, providing a first difference of electrical potential between said first electrode and said second electrode sufficient to cause a direct current of electrical energy through said bath between said first electrode and said second electrode and effect electrodeposition of a film of said resin upon said second electrode, and positioning a third electrode and a fourth electrode in spaced apart relationship and in contact with said bath within said second tank, providing a second difference of electrical potential between said third electrode and said fourth electrode sufficient to cause a direct current of electrical energy through said bath between said third electrode and said fourth electrode and effect electrodeposition of a film of said resin upon said fourth electrode, the polarity relationship of said third electrode to said fourth electrode being the same as the polarity relationship of said first electrode to said second electrode.

3,444,066

METHOD OF ELECTRICALLY INDUCED DEPOSITION OF PAINT ON CONDUCTORS

George E. F. Brewer, Novi, Gilbert L. Burnside, Oak Park, Arnulf F. Mohar, Dearborn Heights, and Gordon G. Strosberg, Oak Park, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Dec. 7, 1966, Ser. No. 599,959
Int. Cl. B01k *5/02*
U.S. Cl. 204—181 **10 Claims**



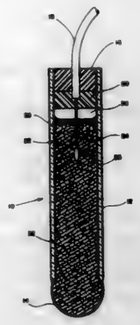
1. In a method for coating an electrically conductive object in an aqueous bath with a paint comprising an organic resin having ionized sites thereon and intimately dispersed within said bath with an ionized dispersal assistant, said method comprising immersing said object within said bath, utilizing said bath as the aqueous electrolyte and said object as a first electrode of an electrical circuit comprising said bath, said first electrode, and a second electrode in contact with said bath and spaced apart from said object, providing a difference of electrical potential between said first electrode and said second electrode sufficient to cause a direct current of electrical energy through said bath and between said first electrode and said second electrode having direction and sufficiency to effect electrodeposition of a coating of said paint upon said object from said bath, the improvement which comprises interposing a diffusion barrier admitting of liquid flow therethrough between said first electrode and said second electrode forming a bath-withdrawal zone, withdrawing from said zone aqueous electrolyte of reduced paint concentration and increased concentration of dispersal assistant relative to the corresponding concentrations of said bath where said bath is in contact with said first electrode, admixing said electrolyte with replenishment paint for said bath and returning the resultant replenishment feed to said bath.

3,444,067

METHOD OF FILLING AN ELECTRODE TUBE WITH LIQUID

Hideo Watanabe and Edmund E. Buzza, Fullerton, Calif., assignors to Beckman Instruments, Inc., a corporation of California

Filed July 12, 1965, Ser. No. 471,366
Int. Cl. B01k *3/04, 3/00*
U.S. Cl. 204—195 **2 Claims**



The specification discloses an electrochemical electrode comprising a tube for containing electrolyte and having an ion sensitive bulb at one end partially or substantially filled with a porous body such as packed glass wool, quartz wool or asbestos fibers to prevent movement of gas bubbles to the bulb if the electrode is reoriented from its usual vertical position or if the electrode is within a zero gravitational environment. Methods of filling the electrode tube with a liquid are also disclosed. One of the methods comprises filling the tube with a solvent having a boiling point below that of the liquid, positioning the porous body in the tube, submerging the tube into a body of the liquid, and heating the liquid to the boiling point of the solvent whereby the liquid displaces the solvent which escapes as a vapor.

3,444,068

ELECTRODE AND METHOD OF MAKING SAME

Lynn B. Leonard, Fullerton, and Arne J. Petersen, Balboa, Calif., assignors to Beckman Instruments, Inc., a corporation of California

Filed Jan. 3, 1966, Ser. No. 518,278
Int. Cl. B01k *3/06*
U.S. Cl. 204—195 **5 Claims**

A glass electrode structure and method for making the same in which a single glass ring seals together the ends of inner and outer concentric glass tubes and an ion sensitive glass bulb. The ring is formed in a single step by applying a gob of molten ion sensitive glass to spaced apart ends of the two glass tubes to fill the annular passage therebetween and form a droplet of the ion sensitive glass across the inner tube. Air is blown through the inner tube to form a bulb of ion sensitive glass from the droplet.

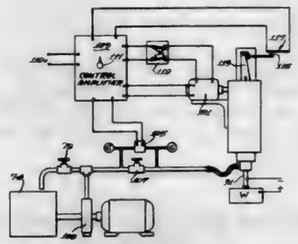


3,444,069

ELECTROLYTIC SHAPING APPARATUS

Lynn A. Williams, Winnetka, Ill., assignor to Anocut Engineering Company, Chicago, Ill., a corporation of Illinois

Application Dec. 8, 1961, Ser. No. 158,042, which is a division of application Ser. No. 772,960, Nov. 10, 1958, now Patent No. 3,058,895, dated Oct. 16, 1962. Divided and this application July 25, 1966, Ser. No. 567,556
Int. Cl. B23p *1/14*
U.S. Cl. 204—224 **10 Claims**



1. In an apparatus for electrolytically shaping an electrically conductive and electrochemically erodible workpiece, the combination including, mounting means for the workpiece, an electrode having a conductive working face adapted to be brought into close spacing relationship with the workpiece to define a work gap of predetermined narrow spacing between the workpiece and said electrode working face, means connected for pumping an electrolyte to and through the work gap, electric circuit means connected for supplying an electrolyzing current between the workpiece and said electrode working face, power means connected to said workpiece mounting means and to said electrode for positively moving the workpiece and said electrode working face relatively toward each other as material is removed from the workpiece, and control means for said power means for automatically adjusting the rate of relative advance of the workpiece and said electrode working face.

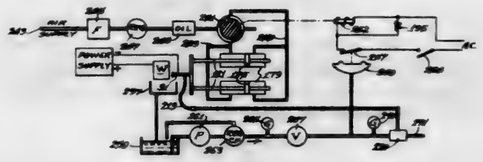
3,444,070

ELECTROLYTIC SHAPING APPARATUS

Lynn A. Williams, Winnetka, Ill., assignor to Anocut Engineering Company, Chicago, Ill., a corporation of Illinois

Application Dec. 8, 1961, Ser. No. 158,042, which is a division of application Ser. No. 772,960, Nov. 10, 1958, now Patent No. 3,058,895, dated Oct. 16, 1962. Divided and this application July 25, 1966, Ser. No. 567,690
Int. Cl. B23p *1/14*
U.S. Cl. 204—224 **11 Claims**

1. In an electrolytic apparatus for removing material from an electrically conductive and electrochemically erodible workpiece by means of an electrode having one or more electrolyte passages therethrough and a conductive working face, the workpiece and said electrode being relatively movable toward each other to define a work gap between the workpiece and said electrode working face, means connected to said electrode for pumping electrolyte through said electrode and to and through the work gap at a superatmospheric pressure so that the electrolyte is adapted to push said electrode and the workpiece apart with a variable hydraulic force which increases as the electrode-to-workpiece spacing decreases, means for applying a substantially constant force between said electrode and the workpiece in a direction to urge said electrode and the workpiece together closely to space said electrode working face from the workpiece, the last said means being adapted to apply a force appreciably less than said variable hydraulic force under conditions where said electrode would touch the workpiece, whereby the electrode-to-workpiece spacing will be maintained substantially constant in dynamically stable equilibrium, and circuit means connected to said electrode and the workpiece for passing an electrolyzing current between the workpiece and said electrode working face.



3,444,071

PROCESS FOR THE HYDROGENATIVE CRACKING OF A HYDROCARBON OIL TO PRODUCE LUBRICATING OIL

Wouter C. Van Zijll Langhout, The Hague, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 18, 1966, Ser. No. 535,354
Claims priority, application Netherlands, Mar. 31, 1965, 6504066
Int. Cl. C10g *37/02, 23/02*
U.S. Cl. 208—59 **7 Claims**

High quality lubricating oil is prepared from high boiling oils by hydrocracking in a first stage to a conversion of 5–65% weight to products boiling below 525° C., removing the low boiling products and converting the high boiling residue in a second hydrocracking zone to provide a 20–75% high boiling residue in the second stage liquid product, and recovering from the second stage product lubricating oil boiling in the range from 370–525° C.

3,444,072

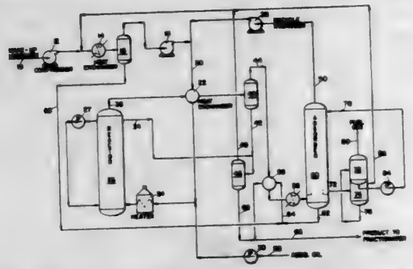
METHOD FOR MINIMIZING HYDROGEN LOSSES IN HIGH PRESSURE PROCESSES

Leon M. Lehman, Brooklyn, N.Y., assignor to Hydrocarbon Research, Inc., New York, N.Y., a corporation of New Jersey

Continuation of application Ser. No. 413,503, Nov. 24, 1964. This application Sept. 25, 1967, Ser. No. 683,422
Int. Cl. C10g *13/00, 13/24, 23/00*
U.S. Cl. 208—102 **10 Claims**

A method for minimizing the losses of hydrogen dissolved in the liquid effluent in high pressure hydrogenation processes by separating the vaporous effluent from

the liquid effluent at substantially reaction temperature and pressures and subsequently flashing the liquid effluent



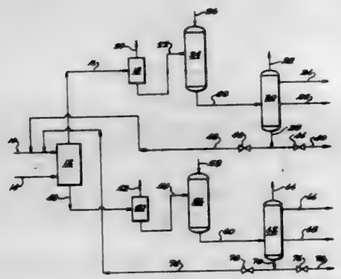
at substantially reaction temperature but at pressures intermediate to the reaction pressure and the pressures at which the vent gas is released.

3,444,073

PROCESS OF HYDROGEN TREATING ASPHALTIC AND MALTENE CONTAINING FRACTIONS

Harold Beuther, Gibsonia, and Bruce K. Schmid, McCandless Township, Allegheny County, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

Filed Sept. 13, 1966, Ser. No. 579,032
Int. Cl. C10g *23/02*
U.S. Cl. 208—212 **11 Claims**



A process for the hydrogen treatment of asphaltic containing hydrocarbons which comprises separating the hydrocarbons into an asphaltene fraction and a maltene fraction and thereafter separately subjecting the asphaltene fraction to comparatively mild hydrogen treatment and separately subjecting the maltene fraction to comparatively severe hydrogen treatment.

3,444,074

HYDRODENITROGENATION PROCESS WITH A CATALYST CONTAINING SILICA-ZIRCONIA GEL, A METAL FLUORIDE AND A HYDROGENATION COMPONENT

Tsoung-Yuan Yan, Gloucester, N.J., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed May 2, 1966, Ser. No. 546,568
Int. Cl. C10g *23/02*; **B01j** *11/78, 11/32*
U.S. Cl. 208—254 **7 Claims**

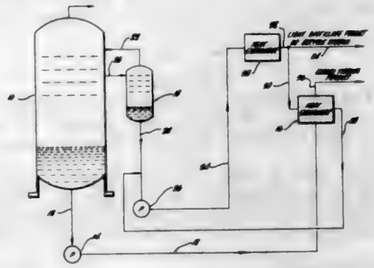
A catalyst is formed with (1) a silica-zirconia gel containing 75–90% by wt. silica and 10–25% by wt. zirconia intimately admixed with (2) 0.1–25% by wt. of said gel of a hydrogenation component, (3) the composite containing 0.1–10% by wt. of a metal fluoride, in which the metal may be bismuth, aluminum, gallium, indium, thallium or a rare earth and (4) the composite catalyst having a sulfur content of 1–15% by wt. The catalyst is utilized in a hydrodenitrogenation reaction at a temperature of 400–950° F.

3,444,075

METHOD FOR COOLING VISCOUS FLUIDS

David K. Beavon, Long Beach, and Norman E. Jentz, Garden Grove, Calif., assignors to The Ralph M. Parsons Company, Los Angeles, Calif., a corporation of Nevada

Filed Mar. 20, 1967, Ser. No. 624,585
Int. Cl. C10g *7/00*; **B01d** *3/42*
U.S. Cl. 208—347 **4 Claims**



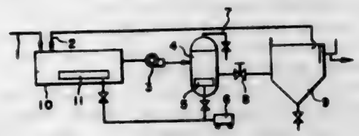
A feed material such as crude oil is fractionated in a fractionating or rectifying column to produce as a first product a viscous or waxy product and at least one second product of substantially lower viscosity. The first and second products separately leave their respective sources at temperatures substantially above ambient. The second product stream is cooled in a heat exchanger and passes in indirect heat exchange relationship with the first product in a second heat exchanger to cool the latter for storage.

3,444,076

METHOD OF TREATING ORGANIC WASTE WATER

Yasuhiro Sekikawa and Ikuo Tanaka, Yokohama, Japan, assignors to Kurita Industrial Co., Ltd., Koraibashi, Higashi-ku, Osaka-shi, Japan, a corporation of Japan

Filed Oct. 17, 1966, Ser. No. 587,265
Claims priority, application Japan, Oct. 20, 1965, 40/64,294; Oct. 22, 1965, 40/64,852; Sept. 14, 1966, 41/60,350
Int. Cl. C02c *1/10, 5/00*
U.S. Cl. 210—6 **4 Claims**



A method of treating organic waste water in which a mixture of organic waste water and recycled activated sludge is aerated in at least two zones, the first zone being under atmospheric pressure and the second zone being under superatmospheric pressure, following which the activated sludge is separated and is recycled to the beginning of the process.

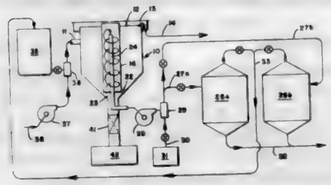
3,444,077

LIQUID CLARIFYING METHOD

Harvey E. Finch, San Bruno, Calif., assignor of one-half to Richard Redlick, Portola Valley, Calif.

Filed Jan. 21, 1965, Ser. No. 426,941
Int. Cl. B01d *11/02*
U.S. Cl. 210—28 **2 Claims**

A method for clarifying a slurry containing water and granular material and for removing oil from oil contaminated water. The slurry (including the oil contamination) is delivered tangentially into the upper portion of a body that is annular in section. Granular material is deposited in a collecting zone below the body. Separated liquid progresses upwardly through an inner isolated column and is removed from the upper part of the column. The water and granular material enter the collecting zone through



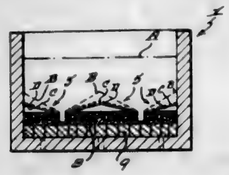
a restricted annular space at the lower end of the column. Some separation takes place in both the outer body and inner column. Also in one embodiment the effluent from the above hydraulic separating operation is passed through a filter having a filter aid, and the filter aid when spent is mixed with raw oil contaminated water to force the feed to the hydraulic separating operation.

3,444,078

CARBON REMOVAL

Donald B. Erskine, Coraopolis, Pa., assignor, by mesne assignments, to Calgon Corporation, a corporation of Delaware

Filed Dec. 9, 1966, Ser. No. 600,608
Int. Cl. C02b *1/76*; **B01d** *15/06*
U.S. Cl. 210—33 **3 Claims**



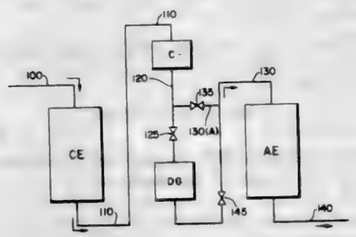
A carbon filter supported on a gravel underdrain. The carbon is removed from the filter via gutters within the gravel. The carbon is removed in the form of a slurry by first draining then by backwashing and finally by washing the gutters.

3,444,079

METHOD AND APPARATUS FOR DEMINERALIZING WATER

Herbert L. Bowers, Fair Lawn, N.J., assignor to Ritter Pfaudler Corporation, Rochester, N.Y., a corporation of New York

Filed Nov. 14, 1966, Ser. No. 593,944
Int. Cl. C02b *1/56, 1/42*
U.S. Cl. 210—37 **5 Claims**



An arrangement of cation and anion exchangers and an activated carbon filter for use in the demineralization of water containing organic foulants which has the activated carbon filter interposed between the cation exchanger and the anion exchanger so that the low pH effluent of the cation exchanger is used to increase the capacity of the activated carbon for removing organic foulants from the cation exchanger effluent.

3,444,080

LUBRICANT FOR ROLLING METALS

Jerry E. Berger, Edwardsville, Ill., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 14, 1967, Ser. No. 630,811
Int. Cl. C10m *1/32, 1/20, 1/06*
U.S. Cl. 252—49.5 **10 Claims**

Soluble oil compositions comprising lubricating oil containing a fatty acid, a morpholine, and an alkylene polyol are useful in hot rolling of metals.

3,444,081

SYNTHETIC LUBRICANTS ON THE BASIS OF DIORTHOSILICIC ACID ESTERS

Herbert Göthel, Oberhausen-Sterkrade, and Hans Feichtinger, Dinslaken, Germany, assignors to Ruhrchemie Aktiengesellschaft, Oberhausen-Holten, Germany, a corporation of Germany

Filed July 27, 1966, Ser. No. 568,272
Int. Cl. C10m *1/52, 3/46, 5/26*
U.S. Cl. 252—49.6 **10 Claims**

A diorthosilicic acid ester of the formula:

$$A—(OSi)_2—(OR)_{6-(n+m)}(OR')_n(OR'')_m$$

in which A represents a pentaerythrite-dicarboxylic-acid ester or di-pentaerythrite-tetra-carboxylic-acid ester radical suitable for use as a lubricant for extremely high performance aircraft jet engines.

3,444,082

ACID-AMIDE POUR POINT DEPRESSANTS

George J. Kautsky, El Cerrito, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

No Drawing. Continuation-in-part of applications Ser. No. 525,375, Feb. 7, 1966, and Ser. No. 579,201, Sept. 14, 1966. This application Apr. 8, 1968, Ser. No. 719,701
Int. Cl. C10m *1/36*; **C10l** *1/22*
U.S. Cl. 252—51.5 **10 Claims**

Pour point depressants for waxy hydrocarbonaceous fuels and oils having as the pour point depressant an alkenyl succinamic acid disubstituted on the nitrogen and the amine salts, the succinamic acid having a total of at least 50 carbon atoms. The succinamic acid or salt is preferably used in combination with a relatively low molecular weight ethylene-olefin copolymer.

3,444,083

ELECTROPHOTOGRAPHIC TONERS

Keith Meridith Oliphant, Westbourne Park, South Australia, Australia, assignor to Research Laboratories of Australia Limited, Adelaide, South Australia, Australia

Continuation of application Ser. No. 195,064, Feb. 16, 1962. This application Sept. 19, 1966, Ser. No. 580,499
Int. Cl. G03g *9/00*
U.S. Cl. 252—62.1 **3 Claims**

Electrostatic images are developed using a liquid developer presenting pigment particles coated with an agent having wetting properties with respect to a fixing agent, the fixing agent being soluble in a carrier liquid which is part of the developer.

3,444,084
GARNET COMPOSITIONS
Seymour Geller, Camarillo, Calif., and Ethan A. Nesbitt, Berkeley Heights, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Sept. 30, 1964, Ser. No. 400,508
Int. Cl. C04b 35/40
U.S. Cl. 252—62.57 3 Claims

The hysteresis loop squareness ratio of yttrium, iron, garnet (YIG) and related compositions containing limited amounts of gallium and aluminum is improved by partial substitution of europium or terbium for yttrium. Both single crystal and polycrystalline materials are included.

3,444,085
AZEOTROPIC COMPOSITION
Bernhardt J. Eiseman, Jr., Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed July 28, 1966, Ser. No. 568,665
Int. Cl. C09k 3/02
U.S. Cl. 252—67 1 Claim

An essentially constant boiling composition of 30% to 90% by weight CH_2F_2 and 70% to about 10% by weight perfluorocyclobutane; and the process of transferring heat in a refrigeration cycle by evaporating, compressing and condensing the composition.

3,444,086
DETERGENT COMPOSITIONS
Thomas B. Hilton, Cincinnati, Ohio, and Gilbert J. McEwan, St. Louis, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 332,854, Dec. 23, 1963. This application Dec. 5, 1966, Ser. No. 598,964
Int. Cl. C11d 3/065
U.S. Cl. 252—138 4 Claims

A built detergent composition is described containing a water soluble alkali metal polyphosphate and a water soluble alkali metal mono-higher alkylbenzene sulfonate, said alkylbenzene sulfonate characterized by the alkyl group having n-hexene-1-trimer type structure containing from about 70% to about 85% in the form of methylene groups, having branching on from about 5% to about 25% of its alpha-carbon atoms, and containing an average of from about 16 to about 20 carbon atoms as well as detergent compositions containing, in addition to the foregoing, a water soluble normally high foaming mono-higher alkyl aromatic sulfonate such as alkylbenzene, alkyltoluene and alkylxylene sulfonates and characterized by the alkyl group having branching on at least about 45% of the alpha-carbon atoms, containing at most about 45% of the carbon atoms in the form of methylene groups and averaging from about 10 to about 20 carbon atoms.

3,444,087
DETERGENT COMPOSITIONS
Raymond D. Eccles, James E. Yates, and Ted P. Matson, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
No Drawing. Original application July 22, 1963, Ser. No. 296,458. Divided and this application Jan. 4, 1968, Ser. No. 698,093
Int. Cl. C11d 3/065; C07c 139/00
U.S. Cl. 252—138 3 Claims

Liquid light-duty and liquid heavy-duty detergent formulations are provided which contain a biodegradeable surface active composition composed principally of a mixture of n-alkene and gamma hydroxy n-alkyl sulfonate.

3,444,088
PROCESS FOR PREPARING HIGH DENSITY URANIUM DIOXIDE PARTICLES AND COMPOSITIONS
Frederick T. Fitch, Shaker Heights, Ohio, and Robert D. Shoup, Silver Spring, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
No Drawing. Filed Feb. 24, 1967, Ser. No. 618,336
Int. Cl. G21c 19/42
U.S. Cl. 252—301.1 13 Claims

A process for preparing sintered, high density, uranium, dioxide particles from uranium trioxide aquasols by treating the aquasol with hydrogen peroxide or a polyhydric alcohol before drying or drying the uranium trioxide particles and rehydrating before reduction and sintering, or a combination of these process steps.

3,444,089
EXCIMER SCINTILLATORS
James G. Carter and Loukas G. Christophorou, Oak Ridge, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed July 18, 1966, Ser. No. 566,090
Int. Cl. C09k 1/02; G01n 31/00
U.S. Cl. 252—301.2 16 Claims

Liquid scintillators are formulated with a solvent which forms excimers. Two such solvents are 1,6-dimethylnaphthalene and 2-ethylnaphthalene, for example. Use of such solvents in liquid scintillators enhances energy transfer from solvent to solute, minimizes the quenching effect caused by quenching materials in the scintillators, and permits detection of weaker radiation while at the same time permitting the use of smaller volumes of the scintillators and providing for a substantial improvement in detection efficiency.

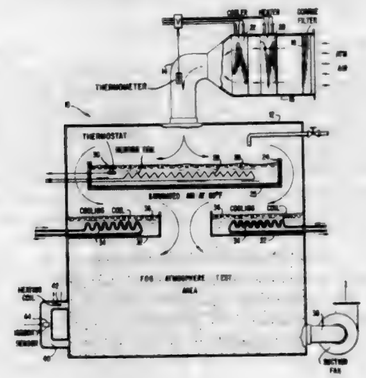
3,444,090
STABILIZING FILMING AMINE EMULSIONS
Albert Michal, Brookfield, Ill., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
No Drawing. Filed Mar. 1, 1967, Ser. No. 619,578
Int. Cl. B01j 13/00; C09k 3/00
U.S. Cl. 252—312 9 Claims

Filming amine emulsions for inhibiting corrosion containing an aliphatic amine, acetic acid, a non-anionic emulsifier, and a methacrylic polymer have improved freeze-thaw stability.

3,444,091
CLEAR GELS OF AROMATIC OILS AND METHOD OF PREPARING THE SAME
Annmarie G. Petraglia, Bronx, N.Y., assignor to Richardson-Merrell Inc., New York, N.Y., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 538,550, Mar. 30, 1966. This application Aug. 24, 1967, Ser. No. 662,890
Int. Cl. B01j 13/00
U.S. Cl. 252—316 6 Claims

Clear pharmaceutically elegant gels of aromatic oils and water are prepared containing 43 to 60 percent by weight of water, 5 to 25 percent of aromatic oils, 3 to 10 percent of an ethoxylated alcohol having the aliphatic stearyl, palmityl, oleyl, or myristyl groups, and 5 to 26 percent of an ethoxylated alcohol having the aliphatic cetyl or lauryl groups. Up to 6 percent of mineral oil and up to 10 percent of other modifying agents may be added if desired.

3,444,092
FOG GENERATOR AND CHAMBER
Andrew Truhan, R.D. 3, Box 392T, Somerset, N.J. 08873
Filed Mar. 28, 1967, Ser. No. 626,630
Int. Cl. B01f 3/08; G05d
U.S. Cl. 252—359 4 Claims



A fog producing apparatus within a cabinet structure defines an environmental chamber for testing molds, drugs, and the like. Atmospheric air is filtered to remove large particles, the air saturated, then cooled to cause fog formation.

3,444,093
SELF-MIXING ANTICOAGULANT COMPOSITION
Ralph Richheimer, Flushing, N.Y., assignor to Burton Parsons Chemicals, Inc., Washington, D.C., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 626,690, Mar. 29, 1967. This application Jan. 29, 1968, Ser. No. 701,131
Int. Cl. A61l 13/00
U.S. Cl. 252—380 9 Claims

A self-mixing, enzyme activated, stable blood anticoagulant composition consisting essentially of a dry combination of an anticoagulant with sodium perborate, urea peroxide or an anticoagulant-hydrogen peroxide hydrate. The compositions are tabletted with high density fillers, carried as a coating on a glass or plastic bead or coated on the blood sample container in order to insure complete mixing.

3,444,094
SCINTILLATOR LIQUID
Boris Mordukhovich Krasovitsky, Prospect Lenina 31a, kv. 11; Vladimir Fedorovich Poduzhailo, Prospect Lenina 25, kv. 13; Liya Mikhailovna Podgornaya, Ulitsa Artema 6, kv. 24, all of Kharkov, U.S.S.R.; and Rafail Lvovich Globus, Ulitsa Sovetskaya 8, kv. 44, Moscow, U.S.S.R.
No Drawing. Filed June 14, 1966, Ser. No. 557,394
Int. Cl. C09k 1/02
U.S. Cl. 252—301.2 5 Claims

New liquid scintillators which have high scintillation efficiency and high boiling point and are non-flammable. The new scintillators consist essentially of oxazoles and/or 1,3,4-oxadiazoles in purified ditolylmethane.

3,444,095
OXIDATION CATALYST CONTAINING A LEAD COMPOUND AND CARBONACEOUS MATERIAL
Charles L. Thomas, Swarthmore, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
No Drawing. Filed Sept. 20, 1966, Ser. No. 580,580
Int. Cl. B01j 11/78
U.S. Cl. 252—441 6 Claims

This invention relates to the oxidation of aromatic compounds by a novel catalytic method. More particularly, the invention relates to the oxidation of aromatic compounds with oxygen in the conjoint presence of certain lead compounds and carbonaceous matter.

3,444,096
CATALYST PREPARATION
Leonard Turner, Woking, and Brian Patrick McGrath, Crowthorne, England, assignors to The British Petroleum Company Limited, London, England, a corporation of England
No Drawing. Filed Aug. 26, 1965, Ser. No. 482,933
Claims priority, application Great Britain, Sept. 23, 1964, 38,758/64
Int. Cl. B01j 11/78
U.S. Cl. 252—442 8 Claims

A hydrocarbon conversion catalyst is prepared by fluorinating alumina which has been pretreated with water or water vapor. A fluoride of carbon or sulphur and particularly carbon tetrafluoride may be used at 300–350° C. The catalyst contains 0.5 to 1.5% fluorine.

3,444,097
HYDROCARBON CONVERSION CATALYST
Raymond W. Barclay, Rutherford, N.J., assignor to Mobil Oil Corporation, a corporation of New York
No Drawing. Filed June 30, 1965, Ser. No. 468,629
Int. Cl. B01j 11/40
U.S. Cl. 252—455 11 Claims

This invention pertains to a novel method of preparing a hydrocarbon conversion catalyst. The novel preparation step consists of spray drying and concurrently activating the catalyst by spray drying a liquid catalyst mixture into a gaseous activating medium maintained at a temperature above 500° F. The liquid catalyst mixtures consist of a slurry of a crystalline aluminosilicate and a slurry of various organic and inorganic compositions which serve as matrices, diluents, binders, etc. The major portion of the spray drying atmosphere is comprised of at least one activating compound selected from the group consisting of CO_2, N_2O, NO, NO_2, H_2S, H_2Se, CH_3SH, C_6H_5SH, HCN, CS_2, HBl, HCr, and HI.

3,444,098
METHODS OF MAKING COMBUSTION CATALYSTS
Henry Bottazi, Bernard Claudel, and Yves Trambouze, Villeurbanne, and Alain de Calmes, Henry Fould, and Pierre Yves Ledoray, Fontenay-aux-Roses, France, assignors to The Commissariat à l'Energie Atomique, Paris, France, a society of France
Filed Mar. 29, 1963, Ser. No. 268,947
Claims priority, application France, Mar. 5, 1963, 926,905
Int. Cl. B01j 11/06
U.S. Cl. 252—455 12 Claims

1. A method of making a catalyst which comprises starting from a thorium salt easy to decompose thermally, heating this salt at a rate ranging from 2° C. per minute to 10° C. per minute, this heating being conducted up to a temperature ranging from 280° C. to 600° C. and keeping the heated products at the final heating temperature for at least ten hours.

5. A method according to claim 1 wherein said thorium salt is heated in the presence of a small amount of a compound, capable of decomposing under the action of heat, of an element chosen among transition elements and lanthanide elements.

8. A method according to claim 5 wherein the heating of the mixture of thorium salt and of said compound takes place at a temperature ranging from 280 °C. to 600° C., in the presence of a support.

10. A method according to claim 8 wherein said support is made of asbestos.

3,444,099

EQUILIBRATION AND STEAM-REFORMING CATALYSTS

William F. Taylor, Scotch Plains, and John H. Sinfelt, Berkeley Heights, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Dec. 23, 1965, Ser. No. 516,090
Int. Cl. B01j 11/06
U.S. Cl. 252—465 8 Claims

Catalysts for gas equilibration reactions having high resistance to poisoning are prepared from oxides of nickel, aluminum, zinc or copper, and chromium with a basic metal oxide promoter. The catalysts are especially useful in reactions involving hydrocarbons, carbon oxides, and steam where sulfur impurities are present.

3,444,100

RADIATION RESISTANT SEMICONDUCTOR GRADE SILICON CONTAINING A METAL OXIDE

Simon Ernest Mayer, Lexington, Mass., assignor to Trancoa Chemical Corporation, Reading, Mass., a corporation of Massachusetts

No Drawing. Filed Oct. 30, 1963, Ser. No. 319,998
Int. Cl. B01j 17/40
U.S. Cl. 252—520 4 Claims

1. A radiation resistant single crystal, semiconductor grade silicon material having uniformly incorporated therein a radiation resistant material consisting essentially of titanium dioxide in amounts of from 0.005% to 0.1% by weight of silicon material.

3. A radiation resistant single crystal, semiconductor grade silicon material having uniformly incorporated therein from 0.005 to 0.1% by weight of zirconium dioxide.

4. A radiation resistant single crystal, semiconductor grade silicon material having uniformly incorporated therein from 0.005 to 0.1% by weight of niobium dioxide.

3,444,101

BARIUM TITANATE COMPOSITIONS CONTAINING CERIUM AND BISMUTH

Konrad Viernickel, Nuremberg, Germany, assignor to Telefunken Patentverwertungsgesellschaft m.b.H., Ulm (Danube), Germany

No Drawing. Filed Aug. 18, 1965, Ser. No. 480,790
Claims priority, application Germany, Aug. 19, 1964, T 26,846
Int. Cl. H01b 1/08
U.S. Cl. 252—520 2 Claims

An electrically conductive ceramic product consisting essentially of 0.02–0.2 part by weight of Bi_2O_3 and 99.8–99.98 parts by weight of a titanate of the formula $(Ba_{0.9990-0.9960},Ce_{0.001-0.004})Ti_{1.00-1.01}O_3$. The ceramic product is made by a process for the production of an electrically conductive ceramic product, which process comprises the steps of: admixing barium and cerium titanates to form an over-all titanate composition of the formula $(Ba_{0.9990-0.9960},Ce_{0.001-0.004})Ti_{1.00-1.01}O_3$; admixing to the resultant mixture 0.02–0.2% by weight of Bi_2O_3, and baking the resultant mixture at 1280–1350° C.

3,444,102

PROCESS FOR THE PRODUCTION OF A HIGH MOLECULAR WEIGHT POLYMER OF AN EPOXIDE USING A THREE COMPONENT CATALYST COMPRISING AN ORGANOZINC COMPOUND, AN ORGANOMAGNESIUM COMPOUND AND WATER

Teruhiko Ito, Naoshi Mitsui, and Seiichiro Maeda, Kakogawa-shi, and Kiyoshi Sawata, Hyogo-ken, Japan, assignors to Seitetsu Kagaku Co., Ltd., Hyogo-ken, Japan, a corporation of Japan

No Drawing. Filed Sept. 11, 1964, Ser. No. 395,943
Claims priority, application Japan, Sept. 21, 1963, 38/50,416; Oct. 21, 1963, 38/56,644, 38/56,645; Nov. 15, 1963, 38/61,441
Int. Cl. C08g 23/10, 23/14
U.S. Cl. 260—2 37 Claims

A process for producing a high molecular weight polymer of a monomeric 1,2-expoxide, which comprises polymerizing said epoxide with a three component catalyst consisting essentially of an organozinc compound, an organomagnesium compound and water in the presence or absence of at least one compound selected from the group consisting of ethers, thioethers and amines, which compound may be incorporated during preparation of the catalyst or during polymerization. By polymerizing the epoxide with the three component catalyst of the present invention, particularly when an ether and amine are added, a polymer having a high molecular weight, for example with an intrinsic viscosity of about 30, can be produced in a shorter time than required by the prior art two component catalyst consisting of an organozinc compound and water.

3,444,103

PREPARATION OF INORGANIC POLYMERS

Keith Dean Maguire, King of Prussia, Pa., assignor to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Aug. 13, 1965, Ser. No. 479,651
Int. Cl. C08g 33/16
U.S. Cl. 260—2 7 Claims

An improved process for the preparation of inorganic coordination polymers containing a trivalent octahedral metal and phosphinic acid moieties in the backbone which comprises oxidizing a phosphinate salt of a divalent metal having a coordination number of six in its trivalent state while dispersed in water containing a neutral water-miscible organic liquid, and after oxidation is complete diluting the homogeneous solution with water to precipitate the polymer.

3,444,104

EXPANDABLE POLYMERS

Richard H. Immel, Osborne, Sewickley, and Paul B. Nelson, Allquippa, Pa., assignors to Sinclair-Koppers Company, a partnership of Delaware

No Drawing. Filed Feb. 16, 1966, Ser. No. 527,723
Int. Cl. C08f 47/10, 33/02
U.S. Cl. 260—2.5 5 Claims

Expandable polymer beads, coated with from 0.01–0.25 percent by weight of an amorphous hydrated calcium silico aluminate of ultra-fine particle size have excellent resistance to lumping during pre-expansion.

3,444,105

PRODUCTION OF FOAM PRODUCTS FROM TALL OIL ALKYDS AND A LIQUID DIENE POLYMER

Charles P. West, Metuchen, and Alan E. Weinberg, Verona, N.J., and William F. Oliver, New Cassel, and Rafael J. Perez, Flushing, N.Y., assignors to U.S. Plywood-Champion Papers Inc., a corporation of New York

No Drawing. Filed Feb. 16, 1966, Ser. No. 527,755
Int. Cl. C08g 53/08, 45/04
U.S. Cl. 260—2.5 15 Claims

The invention relates to a method of foaming a mixture of an alkyl of an insaturated fatty acid, sulfur monochloride and a liquid diene polymer and the product obtained therefrom.

3,444,106

FOAMED VULCANIZED SOLID POLYMERS

Fay W. Bailey, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Feb. 21, 1966, Ser. No. 528,771
Int. Cl. C08f 47/08
U.S. Cl. 260—2.5 7 Claims

A foamed solid polymer of a 1-olefin and a diolefin is formed by heating with steam, sulfur and zinc oxide under pressure and suddenly releasing the pressure.

3,444,107

PROCESS OF FOAMING A POLYMERIZABLE CYCLIC VINYL ETHER COMPOSITION

David Jankiel Wiuka, East St. Kilda, Victoria, Australia, assignor to Imperial Chemical Industries of Australia and New Zealand Limited, Melbourne, Victoria, Australia, a company of Victoria, Australia

No Drawing. Filed Sept. 19, 1966, Ser. No. 580,180
Claims priority, application Australia, Sept. 17, 1965, 64,184/65
Int. Cl. C08f 47/08, 29/30
U.S. Cl. 260—2.5 7 Claims

Foamed polyvinyl ether compositions and a process for producing the same which includes foaming at least one polymerizable cyclic vinyl ether containing at least two vinyl groups per molecule in the presence of a foaming agent, an acidic catalyst and a pore-size controlling additive. The pore-size controlling additive is a copolymer of at least one unsaturated compound A and at least one compound B being a derivative of a mono- or diprotic unsaturated acid which is copolymerizable with compound A and one or both of compounds A and B carrying at least one aliphatic substituent having at least 4 carbon atoms and at least one of compounds A and B carrying at least one polyoxyalkylene residue terminated with an alkyl, aryl, aralkyl, alkaryl or acyl group.

3,444,108

PROCESS FOR POLYMERIZING MONOVINYLIDENE AROMATIC HYDROCARBON MONOMER FORMULATIONS

Alva F. Harris, Wilbraham, Mass., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Nov. 10, 1966, Ser. No. 593,317
Int. Cl. C08f 19/18; C08c 9/02
U.S. Cl. 260—4 17 Claims

Polymers based on monovinylidene aromatic monomers are prepared by polymerizing the monomer formulation in the presence of 0.01 to 2.0 parts by weight of a 9,9'-bifluorenyl compound.

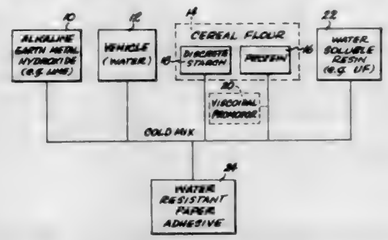
3,444,109

PAPER LAMINATING ADHESIVE COMPOSITIONS COMPRISING PROTEIN-CONTAINING STARCH MATERIAL

Alexander J. Golick, Seattle, and John T. Stephan, Longview, Wash., assignors to Westix Corporation, Longview, Wash., a corporation of Washington

Continuation-in-part of application Ser. No. 844,722, Oct. 6, 1959. This application Feb. 11, 1966, Ser. No. 526,738
The portion of the term of the patent subsequent to Aug. 15, 1984, has been disclaimed
Int. Cl. C08g 37/38, 37/32; C09j 3/18
U.S. Cl. 260—6 19 Claims

Paper laminating adhesive compositions, certain of which are especially adapted for the bonding of corrugated board stock under commercial production conditions, with high-speed bonding and highly satisfactory laminated product water resistance, such adhesive compositions being characterized by a first reactant in the form of a finely divided, potentially adhesive, potentially viscoidal primary material having a protein content of at least about three precent by weight and an ungelatinized starch content of from about fifty percent to about eighty-five percent by weight, a second reactant which serves as a starch gelatinization agent and is a slightly water-soluble alkaline earth metal hydroxide forming material such as lime, providing by chemical reaction with the



protein of substantial water resistance in the resulting adhesive bond, and a third reactant in the form of a water soluble resin selected from the group consisting of amino-aldehyde liquid resins, ketone-aldehyde liquid resins, and mixtures thereof, such as urea-formaldehyde resin. Additive ingredients can also be employed, such as viscosity modifying agents, inorganic and organic filler materials, emulsive water propellants, wetting agents, and preservatives.

3,444,110

POLYMERIC COLOR FORMERS AND PROCESS OF PREPARING SAME

George Alexander Dawson, Cranbury, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Original application Sept. 23, 1964, Ser. No. 398,738, now Patent No. 3,370,952. Divided and this application Dec. 7, 1967, Ser. No. 688,678
Int. Cl. G03d 1/72; C08h 1/00
U.S. Cl. 260—8 4 Claims

Process for making polymeric color formers by polymerizing at 25° C.–90° C. a mixture of

(1) aqueous gelatin,

(2) an addition polymerizable monomeric color former containing an active color former nucleus capable of forming quinoneimine or azomethine dye, and

(3) an addition polymerizable vinyl compound that is liquid at 50° C.,

and the color formers resulting from the process. The color formers have gelatin-like characteristics and are non-migratory, free of haze, form tough elastic layers and have a low coefficient of friction.

3,444,111

THERMOSET RESINS FROM AN EPOXY ALCOHOL, A POLYEPOXIDE AND CYCLIC ANHYDRIDES

Richard A. Hickner, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 320,861, Nov. 1, 1963. This application Apr. 12, 1967, Ser. No. 630,197
Int. Cl. C08g 30/12, 30/02
U.S. Cl. 260—18 10 Claims

Thermosettable resin compositions having increased gel rates and a low viscosity are prepared from epoxy alcohols, polyepoxide resins and cyclic polycarboxylic acid anhydrides. In contrast to the monoglycidyl ether diluents commonly used with epoxy resins, the difunctional epoxy alcohols can be added in substantial proportions without significantly decreasing the heat distortion temperature and without the severe darkening usually encountered in the cured resin.

3,444,112
WATER-SOLUBLE PAINT COMPOSITION
Wataru Koga, Masahiro Abo, Yoshio Yasuoka, Michio Nozaki, and Kanemasa Nomaguchi, Hitachi-shi, Japan, assignors to Hitachi Kasei Kogyo Kabushiki Kaisha, Tokyo-to, Japan, a company of Japan
No Drawing. Filed Sept. 3, 1963, Ser. No. 306,320
Claims priority, application Japan, Sept. 6, 1962, 37/38,028; Sept. 12, 1962, 37/39,313
Int. Cl. C08g *5/18, 5/20;* **C09d** *3/54*
U.S. Cl. 260—19 **12 Claims**

A water-soluble paint composition based on oil-soluble phenol-formaldehyde resins, drying- or semidrying vegetable oils which are simultaneously reacted with α,β-unsaturated dibasic acids under heat to obtain an oil-modified phenolic resin. The resultant product is reacted with ammonium hydroxide or a water-soluble amine and can then be diluted with water.

3,444,113
LOW TEMPERATURE CURABLE WOOD COATING COMPOSITION
Joseph Francis Ackerman, Cedar Grove, and Eliakum Gustave Shur, Union, N.J., assignors to Interchemical Corporation, New York, N.Y., a corporation of Ohio
No Drawing. Filed Dec. 3, 1964, Ser. No. 415,804
Int. Cl. C08g *37/34, 37/32*
U.S. Cl. 260—21 **6 Claims**

Low temperature curable wood coating compositions are prepared from solution blends of a copolymer of styrene and a half-ester of fumaric or maleic acid, an alkyd resin, and a urea-formaldehyde resin. These compositions are capable of rapid curing at relatively low temperatures and provide coatings of high flexibility and toughness.

3,444,114
AQUEOUS SOLUTIONS OF WATER-SOLUBLE ALKYD RESIN AND WATER-SOLUBLE AMINO RESIN HAVING CARBOXYLIC GROUPS
Brian York Downing, Kingswinford, England, assignor to British Industrial Plastics Limited, London, England, a corporation of the United Kingdom
No Drawing. Filed May 16, 1966, Ser. No. 550,148
Claims priority, application Great Britain, May 20, 1965, 21,388/65
Int. Cl. C08g *37/32, 37/24;* **B44c** *1/34*
U.S. Cl. 260—21 **16 Claims**

There is prepared a composition suitable for coating by electrophoresis consisting essentially of an ionized aqueous solution of

(a) A resin which is an alkylated amino resin at least partially transetherified by reaction with a hydroxycarboxylic acid or an alkyl ether of an amino resin precondensate at least partially transetherified by reaction with a hydroxycarboxylic acid,

(b) A water-soluble alkyd resin, and

(c) Ammonia or an organic base.

Various articles are coated electrophoretically with such a composition.

3,444,115
POLYOLEFIN-WHITE PIGMENT COMPOSITION STABILIZED WITH MIXTURES OF A FATTY ACID AND AN ULTRAVIOLET LIGHT STABILIZER
Donald G. Needham, Ramona, and George R. Hill, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed June 25, 1965, Ser. No. 467,135
Int. Cl. C08f *45/04, 45/58*
U.S. Cl. 260—23 **2 Claims**

Polymeric compositions free from discoloration are provided by the addition of an inhibiting amount of a long chain fatty acid to the pigmented polymer.

3,444,116
GLASS FIBER SIZING EMULSIONS COMPRISING EPOXIDIZED TRIGLYCERIDE AND CARBOXYLIC COPOLYMER
Roland K. Gagnon, Kraainem, Brussels, Belgium, Alfred Marzocchi, Cumberland, R.I., and Harold Rogers, Charlottesville, Va., assignors to Owens-Corning Fiberglas Corporation, Toledo, Ohio, a corporation of Delaware
Continuation-in-part of application Ser. No. 91,365, Feb. 24, 1961. This application May 16, 1966, Ser. No. 550,561
Int. Cl. D06m *15/38, 13/10*
U.S. Cl. 260—23 **6 Claims**

A coating for woven fabrics, and particularly woven glass fibers providing improved "hand," flexibility, and abrasion resistance. The coating comprises an outer layer of particles of a polymeric material that is reactive with oxirane groups, and an intermediate flexible layer of particles of an epoxidized triglyceride one branch chain of which is attached to the polymeric material, and another branch chain of which is attached to the fibers of the fabric. The coating is deposited on the fibers from an emulsion of the polymer and the epoxidized triglyceride.

3,444,117
POLYMER BLEND
John J. Higgins and Nova E. Stucker, Westfield, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Apr. 6, 1966, Ser. No. 540,533
Int. Cl. C08f *29/06*
U.S. Cl. 260—28.5 **9 Claims**

A blend of atactic polypropylene, low molecular weight polybutene and an isobutylene polymer provides an improved polymer blend which may be used in such applications as wax blend formulations, hot melt adhesives, and asphalt compositions.

3,444,118
DRY TINTING COMPOSITION FOR WATER-BASED OR WATER-THINNABLE COATING COMPOSITIONS AND METHOD OF TINTING WITH SAID TINTING COMPOSITION
Laurence F. Saunders, Highlands, Salisbury, Southern Rhodesia, assignor to Vitretex (Central Africa) Limited, Salisbury, Southern Rhodesia
No Drawing. Filed Aug. 10, 1964, Ser. No. 388,661
Int. Cl. C09d *5/02;* **C08f** *1/08*
U.S. Cl. 260—29.2 **3 Claims**

Compositions comprising a major proportion of inorganic pigment and a minor proportion of a compound which produces carbon dioxide when in contact with water are added to water and thoroughly admixed with a water-compatible basic coating composition.

3,444,119
MODIFIED PHENOLIC RESIN CONTAINING EPOXY SUBSTITUTED SILANE
John R. Le Blanc, Wilbraham, Mass., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 321,404, Nov. 5, 1963. This application Aug. 9, 1967, Ser. No. 659,328
Int. Cl. C08g *37/08, 37/14*
U.S. Cl. 260—29.3 **5 Claims**

Storage stable, water dilutable, dicyandiamide and/or urea modified phenolic resin systems adapted for use as a fibrous material binder and containing small amounts of glycidoxy substituted trialkoxy silane. These systems, when thermoset, display excellent moisture resistance.

3,444,120
GLASS FABRIC HAVING IMPROVED YARN SLIPPAGE AND HAND
David W. Boyes, North Scituate, and Douglas E. Potter, Cumberland, R.I., assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware
No Drawing. Filed Mar. 14, 1966, Ser. No. 533,804
Int. Cl. C03c *25/02;* **D06c** *25/00*
U.S. Cl. 260—29.6 **7 Claims**

A liquid treatment for fibers, and particularly glass fibers, which provides improved "hand" and high retention of the strands against edgewise removal.

3,444,121
AQUEOUS RUBBERY TERPOLYMER LATEX CONTAINING AN EPOXY RESIN
Vincent A. Altier, Akron, and Edward T. Wells, Barberton, Ohio, assignors to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
No Drawing. Filed Dec. 23, 1965, Ser. No. 516,146
Int. Cl. C08d *1/09, 9/10*
U.S. Cl. 260—29.7 **12 Claims**

There is provided a latex of improved wash resistance, the latex being formed from a conjugated diolefin such as butadiene, a vinyl aromatic hydrocarbon such as styrene, and an aliphatic unsaturated dicarboxylic acid such as fumaric acid. Such latices are improved in the foregoing respect by including a small amount of epoxy compound.

3,444,122
VINYL CHLORIDE POLYMER COMPOSITIONS CONTAINING A VINYL CHLORIDE, VINYL ACETATE, VINYL ALCOHOL TERPOLYMER AND AN EPOXY RESIN
George J. Antiflnger, Avon Lake, and Harold E. Von Kamp, Elyria, Ohio, assignors to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
No Drawing. Filed Apr. 5, 1966, Ser. No. 540,195
Int. Cl. C08f *37/16, 45/72*
U.S. Cl. 260—32.8 **8 Claims**

Solvent resistant films of a vinyl chloride polymer are provided from mixtures of a copolymer containing a major proportion of vinyl chloride and lesser amounts of vinyl acetate and vinyl alcohol, an epoxy resin and a small amount of tris(dimethylaminomethyl)phenol.

3,444,123
EPISULPHIDE POLYMERS CROSS-LINKED WITH AMINOPLAST RESINS
Reginald D. Singer, Hollywood, Birmingham, and John L. Smith, Coleshill, England, assignors to Dunlop Rubber Company Limited, London, England, a British company
No Drawing. Filed June 28, 1966, Ser. No. 561,069
Claims priority, application Great Britain, July 20, 1965, 30,729/65
Int. Cl. C08g *37/32*
U.S. Cl. 260—33.4 **19 Claims**

An episulphide homopolymer or a copolymer of episulphide monomers is mixed with a potentially thermosetting organic aminoplast. The composition may be heated, for example, to about 140–180° C. to effect reaction between the episulphide polymer and the aminoplast, preferably in the presence of an acid catalyst.

3,444,124
THERMOSETTING ACRYLIC LACQUERS
Pierre Talet, Alfortville, France, assignor to Nobel-Bozel, Paris, France, a joint-stock company of France
No Drawing. Filed Aug. 10, 1966, Ser. No. 571,418
Claims priority, application France, Aug. 26, 1965, 29,593
Int. Cl. C08f *15/02;* **C08g** *45/04, 37/32*
U.S. Cl. 260—33.4 **10 Claims**

A new thermosetting acrylic lacquer is provided comprising an acrylic copolymer of acrylamidoglycolic acid and at least one monomer of an acrylic ester, acrylamide, or acrylic acid. In addition, a small proportion of symmetrical tetraallyloxyethane may also be included. These lacquers may be crosslinked utilizing an epoxy or an aminoplastic resin cross linking agent at 130° C. compared with the required temperature of 180° C. for similar lacquers without acrylamidoglycolic acid. Finishes produced by lacquers containing acrylamidoglycolic acid have excellent mechanical properties and a remarkable resistance to chemical agents and solvents.

3,444,125
MOISTENABLE, HOT MELT ADHESIVES COMPRISING RANDOM VINYL ALCOHOL/VINYL ESTER COPOLYMERS
Clarence W. Schimelpfenig, Jr., and Pallatheri M. Subramanian, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 546,213, Apr. 29, 1966. This application May 11, 1967, Ser. No. 637,632
Int. Cl. C08f *37/00, 45/34;* **C09j** *3/16*
U.S. Cl. 260—33.4 **5 Claims**

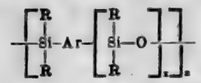
A moistenable hot melt adhesive composition of a random vinyl alcohol/vinyl ester copolymer and a compatible plasticizer (e.g., glycerine) is provided. The copolymer has about 5–40 mole percent ester units.

3,444,126
MONOVINYLIDENE AROMATIC HYDROCARBON-UNSATURATED NITRILE COPOLYMERS STABILIZED WITH HYDROCARBONS
Henry K. Chi, Longmeadow, Mass., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed May 22, 1967, Ser. No. 640,353
Int. Cl. C08f *45/58*
U.S. Cl. 260—45.7 **5 Claims**

There is disclosed novel stabilized interpolymers of an unsaturated nitrile monomer and a monovinylidene aromatic hydrocarbon wherein the preformed interpolymer is intimately admixed with from about 0.05 to 3.0 percent, based upon the weight of the preformed interpolymer, of a stabilizer selected from the class consisting of terpinolene, dipentene, p-mentha-1,5-diene, p-cymene, 1,3-cyclooctadiene, octene, alpha-methylstyrene dimer, and mixtures thereof. The monovinylidene aromatic hydrocarbon constitutes at least 50 percent by weight of the interpolymer and the unsaturated nitrile monomer constitutes at least 1.0 percent by weight of the interpolymer and is selected from the group consisting of acrylonitrile, methylacrylonitrile, ethacrylonitrile, propacrylonitrile, butacrylonitrile and mixtures thereof.

3,444,127
PREPARATION OF ORDERED POLY(ARYLENE-SILOXANE)POLYMERS
James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Laurence W. Breed, Overland Park, Kans., and Richard L. Elliott, Kansas City, Mo.
No Drawing. Filed Sept. 15, 1967, Ser. No. 668,751
Int. Cl. C08g *47/02;* **C09d** *3/82;* **C07f** *7/02*
U.S. Cl. 260—46.5 **4 Claims**

Poly(arylenesiloxane) polymers having the formula



where Ar is an arylene group, R is a monovalent hydrocarbon radical and x is a whole number from 3 to 5 are prepared by reacting an arylenedisilanol with a cyclic siloxazane compound. These polymers show outstanding stability at elevated temperature, resistance to

radiation and capability for formation into films for use as coatings or elastomers.

3,444,128

SUCCINIMIDOALKYLSILOXANES

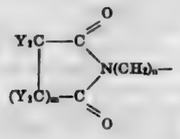
Tse C. Wu, Waterford, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Dec. 5, 1967, Ser. No. 688,017

Int. Cl. C08g *31/24;* **C07f** *7/10*

U.S. Cl. 260—46.5 **12 Claims**

Silanes and siloxanes containing silicon-bonded



radicals, where Y is a member selected from the class consisting of hydrogen, halogen and methyl, *m* is an integer equal to from 1 to 2, inclusive, and *n* is an integer equal to from 2 to 3, inclusive, are prepared by first reacting an N-vinyl-N-allyl succinimide or glutarimide with a silane containing silicon-bonded hydrogens and then converting the silanes to siloxane homopolymers and copolymers. These siloxanes are useful in the preparation of silicone fluids and elastomers having improved resistance to hydrocarbon solvents.

3,444,129

POLYMERIC ULTRAVIOLET BARRIER COATINGS

Raymond H. Young, Jr., East Longmeadow, Saul M. Cohen, Springfield, Albert H. Markhart, Wilbraham, and Irving Serlin, Springfield, Mass., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed July 8, 1965, Ser. No. 470,572

Int. Cl. C08g *17/02;* **C09k** *3/00*

U.S. Cl. 260—47 **5 Claims**

Disclosed herein are rearrangeable polyesters which are the polymeric reaction product of an aromatic dihydric compound and an aromatic dicarboxyl compound. The preferred dihydric compounds are the ester derivatives of 4,4-bis(4'-hydroxy phenyl)pentanoic acid wherein there is at least one unsubstituted position ortho to the aromatic hydroxyl group. The rearranged polyesters of this invention are especially useful as ultraviolet light barriers.

3,444,130

HYDROXYMETHYL DIPHENYL OXIDE-MODIFIED POLYESTER RESINS

Earl H. Rosenbrock, Auburn, and James D. Doedens, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed May 19, 1966, Ser. No. 551,202

Int. Cl. C08g *17/00, 17/14, 17/18*

U.S. Cl. 260—47 **13 Claims**

The present invention relates to novel compositions and methods in the polyester resin field. More particularly, this invention relates to polyester resins fortified through the use of hydroxymethyl diphenyl oxides to produce thermoset resins having desired flexibility, toughness, chemical resistance, and stability at elevated temperatures. The resin compositions of this invention are particularly useful as insulating materials for electrical conductors.

3,444,131

HYDROXYMETHYL DIPHENYL OXIDE-MODIFIED POLYESTER RESINS

Earl H. Rosenbrock, Auburn, and James D. Doedens, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed May 19, 1966, Ser. No. 551,216

Int. Cl. C08g *17/02*

U.S. Cl. 260—47 **15 Claims**

The present invention relates to novel compositions and methods in the polyester resin field. More particularly, this invention relates to polyesters of hydroxybenzoic acids fortified through the use of hydroxymethyl diphenyl oxide (hereinafter HMDPO) to produce thermoset resins having desired flexibility, toughness, chemical resistance, and stability at elevated temperatures. The resin compositions of this invention are particularly useful as insulating materials for electrical conductors.

3,444,132

PROCESS FOR HARDENING A LIQUID EPOXY RESIN WITH AN ACID HARDENER IN PRESENCE OF A CARBOXYLIC ACID AMIDE

Heinz Noeske, Oberhausen-Sterkrade Nord, Hans Feichtinger, Dinslaken, and Hanswerner Linden, Oberhausen-Holten, Germany, assignors to Ruhrchemie Aktiengesellschaft, Oberhausen-Holten, Germany, a corporation of Germany

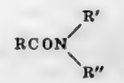
No Drawing. Filed June 9, 1965, Ser. No. 462,740

Claims priority, application Germany, June 16, 1964, R 38,141

Int. Cl. C08g *23/22, 51/80*

U.S. Cl. 260—47 **9 Claims**

A process is disclosed for hardening a liquid epoxy resin. The process involves reacting such a resin, an acid hardening agent and more specifically a polycarboxylic acid anhydride and a tertiary carboxylic acid amide having the formula:



wherein each of R, R′ and R″ designate aliphatic hydrocarbon radicals as accelerator for the said reaction. The resulting resins which are novel are characterized by outstanding mechanical and physical properties.

3,444,133

COBALT CHELATE CATALYSTS IN THE PRODUCTION OF POLYPHENYLENE OXIDES

Erich Behr, Troisdorf, and Hansjurgen Hass, Spich, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany, a corporation of Germany

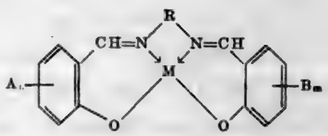
No Drawing. Filed July 12, 1966, Ser. No. 566,446

Claims priority, application Germany, July 14, 1965, D 47,724

Int. Cl. C08g *23/18*

U.S. Cl. 260—47 **10 Claims**

The oxidative coupling of phenols to produce polyphenylene oxides through the use of a catalyst of the formula



3,444,134

PHENOLATED POLYMERS OF ISOPRENE

Anthony C. Soldatos, Kendall Park, N.J., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 572,912, Aug. 17, 1966. This application Feb. 7, 1967, Ser. No. 614,408

Int. Cl. C08g *5/02*

U.S. Cl. 260—47 **10 Claims**

This invention relates to phenolated polymers of isoprene which are prepared by reacting a substituted phenol with a polymer of isoprene. The phenolated polymers of isoprene are particularly useful as additives to ethylene-propylene elastomers.

3,444,135

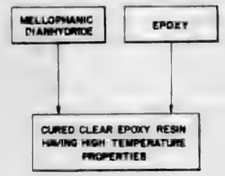
CLEAR HEAT STABLE PRODUCT OF 1,2-EPOXY RESIN AND MELLOPHANIC DIANHYDRIDE

Nicholas P. Greco, Pittsburgh, and Charles J. Pennino, Monroeville, Pa., assignors to Koppers Company, Inc., a corporation of Delaware

Filed Mar. 29, 1967, Ser. No. 626,845

Int. Cl. C08g *30/00, 29/00;* **C08f** *3/00*

U.S. Cl. 260—47 **3 Claims**



Clear heat stable epoxy resins are produced using a dianhydride hardener. The hardener is a dianhydride of 1,2,3,4-benzene tetracarboxylic acid (mellophanic dianhydride). The lower melting point of the particular dianhydride and its good solubility in epoxy resins enable the dianhydride to be dissolved into the epoxy at lower temperatures than with other known dianhydride hardeners. The result is a product that is both clear and heat resistant in contrast to the opaque resins usually produced with epoxy-dianhydride systems because of the insolubility of the prior art dianhydrides except at impractical temperatures.

The composition may be used as textile auxiliaries, laminating resins, varnishes, lacquers, dipping resins, castings, encapsulating, coating, filling, packing materials or adhesives.

3,444,136

PROCESS FOR THE PREPARATION OF POLYQUINAZOLONES

Leo R. Belohlav, Berkeley Heights, and John R. Costanza, North Plainfield, N.J., assignors to Celanese Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 1, 1967, Ser. No. 679,669

Int. Cl. C08g *20/32*

U.S. Cl. 260—47 **9 Claims**

Polyquinazolones which may be shaped to form fibers, films and other shaped articles are prepared by reacting a diacylated aromatic diaminodicarboxylic acid such as a dicylated bisanthranilic acid with a diprimary diamine such as 4,4′-diaminodiphenylether.

3,444,137

CYANO MODIFIED PHENOLIC RESINS

Harold P. Higginbottom and John R. Le Blanc, Wilbraham, Mass., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 606,580, Jan. 3, 1967. This application Dec. 28, 1967, Ser. No. 694,088

Int. Cl. C08g *5/14, 9/24;* **C07c** *121/50*

U.S. Cl. 260—51.5 **12 Claims**

New, modified, curable phenol-aldehyde resins characterized by molecules which contain a cyano group, an amine nitrogen atom, a phenyl group, and a phenyl substituted hydroxyl group, such molecules having been made by reacting a phenol, formaldehyde, and a cyano substituted primary or secondary amine. The cured product resins have improved electrical properties, and improved crosslinkability.

3,444,138

MORDANTS FOR BLEACHABLE FILTER LAYERS

Jack L. R. Williams, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Aug. 16, 1965, Ser. No. 480,111

Int. Cl. G03c *7/32, 7/28;* **C09b** *65/00*

U.S. Cl. 260—65 **7 Claims**

A polymeric quaternary nitrogen heterocyclic alkali-release mordant that under alkaline conditions form betaines that will not mordant anions is advantageously used as a mordant for a water-soluble acid dye in hydrophilic colloid light-absorbing and light-filtering layers of photographic elements where it is desired to firmly hold the acid dye until photographic processing and completely release the acid dye during alkaline photographic processing without remordanting any of said residual dye or thiosulfate ions from the fixing bath used in the photographic processing.

3,444,139

PREPARATION OF HIGHLY POLYMERIC POLYESTERS IN THE PRESENCE OF CATALYTIC TITANIUM COMPOUNDS CONTAINING ESTER GROUPS

Lambert Gaston Jeurissen, Mortsel-Antwerp, and André Jan Conix, Antwerp, Belgium, assignors to Gevaert-Agfa N.V., Mortsel-Antwerp, Belgium, a Belgian company

No Drawing. Filed Mar. 10, 1966, Ser. No. 533,270

Claims priority, application Great Britain, Mar. 11, 1965, 10,409/65

Int. Cl. C08g *17/015*

U.S. Cl. 260—75 **9 Claims**

Highly polymeric polyesters are obtained from an aromatic dicarboxylic acid or an ester-forming derivative thereof and a glycol by (I) forming a glycol dicarboxylate from the above-mentioned starting materials, and (II) polycondensing the glycol dicarboxylate in the presence of a titanium compound of the formula $Ti(OOC–R–COOR_1)_4$, wherein R represents an aliphatic, aromatic, cyclo-aliphatic or heterocyclic bivalent organic radical and R_1 represents an aliphatic or aromatic monovalent organic radical.

3,444,140

PRESSURIZED ESTERIFICATION OF TEREPHTHALIC ACID IN PRESENCE OF LOW CONCENTRATION OF TERTIARY AMINE

Mary J. Stewart, Media, and Otto K. Carlson, Marcus Hook, Pa., assignors to FMC Corporation, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Nov. 14, 1966, Ser. No. 593,685

Int. Cl. C08g *17/003*

U.S. Cl. 260—75 **4 Claims**

Process of preparing polyethylene terephthalate comprising carrying out a direct esterification reaction between terephthalic acid and ethylene glycol, wherein the molar

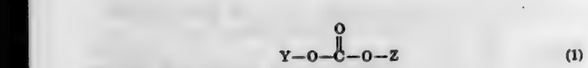
ratio of ethylene glycol to terephthalic acid is from about 1.1:1 to less than 2:1 in the presence of a very low concentration of a volatile tertiary amine under superatmospheric pressure and then polycondensing the resulting product.

3,444,141
ADDITION OF PHENOL CARBONATE DERIVATIVES IN POLYESTER CONDENSATION

Takeo Shima, Iwakuni-shi, Japan, assignor to Teijin Limited, Osaka, Japan, a corporation of Japan

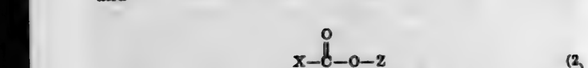
No Drawing. Continuation-in-part of application Ser. No. 374,266, June 11, 1964. This application Mar. 20, 1967, Ser. No. 624,179
Claims priority, application Japan, June 19, 1963, 38/30,925
Int. Cl. C08g *17/003, 17/00*
U.S. Cl. 260—75 **8 Claims**

A process for preparing a substantially linear highly polymerized carboxylic acid ester, said process characterized by the addition of a carbonate derivative of a monovalent phenol selected from the formula



(1)

and



(2)

wherein Y and Z are selected from the group consisting of lower alkyl, naphthyl, cyclohexyl, phenyl and substituted phenyl groups and X is selected from the group consisting of halogen atoms and thio-organic radicals of the formula Y—S, at least Y or Z being a phenyl, naphthyl, or substituted phenyl radical; to a molten polyester having an intrinsic viscosity of at least 0.2 as calculated from the measured value in orthochlorophenol.

3,444,142
ANIONIC POLYMERIZATION OF LACTAMS WITH (p-SUBSTITUTED PHENYLTHIO)-S-TRIAZINE AS PROMOTER

John M. Kolyer, Convent, and Albert A. Kveglis, Clifton, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed May 19, 1965, Ser. No. 457,173
Int. Cl. C08g *20/18*
U.S. Cl. 260—78 **9 Claims**

Process for anionic polymerization of lactams such as e-caprolactam utilizing a metal catalyst and a (p-substituted phenylthio)-s-triazine promoter such as tris-(p-chlorophenylthio)-s-triazine, tris-(p-tertiarybutylphenylthio)-s-triazine, tris-(p-cresylthio)-s-triazine, or tris-(p-bromophenylthio)-s-triazine. The polylactam products can be shaped into solid or hollow articles.

3,444,143
DECARBOXYLATED POLYMERIC CARBOXYLIC ACID

Thomas A. Morris, Jr., Groton, and Bryce E. Tate, Niantic, Conn., assignors to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed May 10, 1966, Ser. No. 548,842
Int. Cl. C08f *27/00*
U.S. Cl. 260—78.4 **6 Claims**

Partially decarboxylated polymers and copolymers of itaconic acid, process of producing the same and the utility thereof for the stabilization of other polymers and as coating agents.

3,444,144
POLYPHENYLENE RESINS CONTAINING CARBOXYLIC GROUPS

Alan J. Neale, Llangollen, Wales, and Ryland J. Roberts, Acrefair, Wrexham, England, assignors to Monsanto Chemicals Limited, London, England, a British company

No Drawing. Filed Aug. 7, 1967, Ser. No. 658,650
Claims priority, application Great Britain, Aug. 17, 1966, 36,742/66
Int. Cl. C08g *17/04, 17/06, 17/08*
U.S. Cl. 260—78.4 **12 Claims**

Disclosed herein are novel polyphenylene resins which contain carboxylic groups, derived from the presence of an anhydride in the condensation polymerization reaction. These materials are of value in the production of heat-stable cross-linked high temperature resistant composite structures.

3,444,145
PROCESS FOR PREPARING STABLE POLYSULFONES

Edward A. Youngman, Lafayette, Ronald S. Bauer, Orinda, Kenneth C. Dewhirst, San Pablo, and Howard V. Holler and Hans E. Lunk, Oakland, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Feb. 11, 1965, Ser. No. 431,856
Int. Cl. C08g *25/00*
U.S. Cl. 260—79.3 **20 Claims**

Ethylenic double bonds of polysulfones which are reaction products of sulfur dioxide with conjugated diolefins and optionally other comonomers are catalytically hydrogenated, preferably in the presence of a homogeneous hydrogenation catalyst, in liquid phase in a polar organic solvent which exerts swelling or solvent action on the polymer, preferably a phenol, fluoroalcohol or sulfolane. In a preferred mode an unsaturated polysulfone is produced by reaction of the monomers in a polar organic solvent which is also suitable as hydrogenation medium, the polymerization mixture is freed of excess monomer and reaction initiator, and the resulting polysulfone is catalytically hydrogenated in the resulting reaction mixture in the presence of added hydrogenation catalyst.

3,444,146
VULCANIZABLE OLEFIN COPOLYMERS AND PROCESS FOR PREPARING THEM

Alberto Valvassori and Guido Sartori, Milan, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy

No Drawing. Filed Dec. 11, 1964, Ser. No. 417,823
Claims priority, application Italy, Dec. 13, 1963, 25,717/63
Int. Cl. C08f *15/40, 27/02*
U.S. Cl. 260—79.5 **8 Claims**

Vulcanizable amorphous copolymers of ethylene, a higher aliphatic alpha-olefin and a mixture of at least two non-conjugated polyenes prepared with a catalyst acting with co-ordinated anionic mechanism are described.

3,444,147
TERPOLYMERS OF ETHYLENE, A HIGHER ALPHA-OLEFIN AND METHYLENECYCLO-OCTENES

Vittorio Turba, Nazzareno Camell, and Guido Sartori, Milan, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy, a corporation of Italy

No Drawing. Filed July 5, 1966, Ser. No. 562,916
Claims priority, application Italy, July 19, 1965, 16,198/65
Int. Cl. C08f *1/28, 15/04, 37/00*
U.S. Cl. 260—80.7 **14 Claims**

New amorphous and vulcanizable copolymers of one or more monomers selected from ethylene and higher alpha-olefins with methylene-cyclooctenes and process for

preparing the copolymers with the aid of coordinated anionic type catalysts based on vanadium compounds and aluminum or beryllium compounds.

3,444,148
COPOLYMERS OF SELECTED POLYFLUOROPERHALOKETONE ADDUCTS WITH OTHER SELECTED ETHYLENIC COMPOUNDS

Robert L. Adelman, Centerville, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 5, 1964, Ser. No. 401,696
Int. Cl. C08f *15/40, 15/32, 15/26*
U.S. Cl. 260—80.72 **18 Claims**

Claimed are solid film- and fiber-forming copolymers of at least one of certain terminally unsaturated polyfluorinated alcohols, at least one of certain substituted terminally unsaturated ethylenic compounds, and, optionally, a terminally unsaturated ethylenic hydrocarbon copolymerizable with the ethylenic compounds by means of a free-radical initiator. The polymers are formed by direct reaction of the precursors. Manufacturers, e.g., films and fibers, made from the polymers are also claimed.

3,444,149
POLYMERIZATION CATALYST AND METHOD FOR THE POLYMERIZATION OF OLEFINS

Robert J. Kelly, Montville, N.J., assignor to Uniroyal, Inc., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 304,691, Aug. 26, 1963. This application Mar. 19, 1965, Ser. No. 441,306
Int. Cl. C08f *1/56, 1/42;* **B01j** *11/84*
U.S. Cl. 260—80.78 **13 Claims**

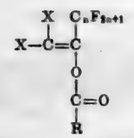
Coordination-type polymerization catalyst, especially for making EPR or EPDM, based on (1) a vanadium salt and (2) an alkylaluminum halide, is "activated" (made more efficient, or revived after it has become exhausted) by adding (3) a nitroso compound (e.g., p-dimethylaminonitrosobenzene) or a quinone (e.g., tetrachloro-p-benzoquinone). The activator (3) also acts as a regulator of molecular weight.

3,444,150
NOVEL HALOGEN-CONTAINING MONOMERS AND POLYMERS

Howard C. Haas, Arlington, and Norman W. Schuler, Lexington, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Continuation-in-part of application Ser. No. 637,311, Nov. 29, 1966. This application Mar. 20, 1968, Ser. No. 714,709
Int. Cl. C08f *3/52, 15/20;* **C07c** *69/62*
U.S. Cl. 260—85.7 **31 Claims**

Novel film-forming homopolymers and copolymers may be synthesized by reacting a novel monomer of the formula:



wherein R is selected from the group consisting of alkyl and phenyl radicals, each X is selected from the group consisting of hydrogen, fluorine and chlorine, and *n* is an integer from 1 to 2, inclusive, with an ethylenically unsaturated monomer copolymerizable therewith.

3,444,151
STYRENE-MALEIC ANHYDRIDE-AMINE POLYMERS AS EMULSIFIERS IN POLYMERIZATION OF VINYL MONOMERS

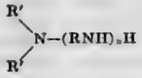
Joseph A. Verdol, Dolton, and Hector J. Gonzalez, Hazel Crest, Ill., assignors to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 7, 1965, Ser. No. 485,620
Int. Cl. C08f *1/13*
U.S. Cl. 260—86.7 **10 Claims**

In the emulsion polymerization of polymerizable vinyl monomers in the presence of an emulsion polymerization catalyst, emulsifier and water at temperatures of about 0 to 100° C., the improvement which comprises employing as the emulsifier in the polymerization under acidic pH, the reaction product of a polymer of styrene and maleic anhydride having a styrene to maleic anhydride mole ratio of about 1 to 4:1 and an average molecular weight of at least about 400 and from about 0.1 to 2 moles of an amine per anhydride group in the styrene-maleic anhydride polymer. The amine can be, (A) a monoamine having the general formula:



wherein R is alkyl of about 5 to 25 carbon atoms and R′ is hydrogen or R, or (B) a polyamine having the general formula:



wherein R is alkylene of 2 to about 25 carbon atoms, *n* is a number from 1 to about 10,000 and R′ is hydrogen or hydrocarbon of 1 to about 30 carbon atoms. The emulsifier can be present in an amount of about 0.1 to 50 weight percent based on the vinyl monomers.

3,444,152
TWO-STAGE POLYMERISATION PROCESS FOR CHLOROPRENE

Francis Paul Gintz, Sutton, Surrey, and Richard John Strachan Matthews, Great Bookham, Surrey, England, and Godfrey Malcolm Peirce, Swansea, Glamorgan, Wales, assignors to The Distillers Company Limited, Edinburgh, Scotland, a British company

No Drawing. Filed June 29, 1965, Ser. No. 468,112
Claims priority, application Great Britain, Aug. 5, 1964, 31,755/64, Patent 1,035,387
Int. Cl. C08d *1/09, 1/36, 3/14*
U.S. Cl. 260—92.3 **7 Claims**

Polychloroprene having improved physical properties is produced in a two-stage process wherein the first stage involve polymerising chloroprene to give a latex of cross-linked polymer and then polymerising chloroprene in this latex system under noncross-linking conditions such that the final chloroprene polymer contains a minimum of 10% and an upper limit of 60% by weight of the cross-linked polymer.

3,444,153
POLYMERIZATION PROCESS AND CATALYST FOR OLEFINS

Lawrence M. Fodor, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Aug. 16, 1965, Ser. No. 480,103
Int. Cl. C08f *1/54, 3/08*
U.S. Cl. 260—93.7 **5 Claims**

Flexural modulus of solid polymers of olefins is increased and xylenes-soluble content thereof decreased by polymerizing aliphatic 1-olefins in the presence of a catalyst composition formed by mixing (a) a compound of

the formula AlR_3 wherein R is a member of the group consisting of alkyl, aryl and cycloalkyl radicals having from 1 to 20 carbon atoms, (b) a titanium trichloride-aluminum chloride complex, (c) a compound of the formula BX_3, wherein X is a halogen, and (d) a compound of the formula PX_n, wherein X is a halogen and *n* is an integer selected from the group consisting of 3 and 5.

3,444,154

PROCESS FOR REACTING A DIOLEFINIC POLYMER WITH POLYHALOCYCLOPENTADIENE AND PRODUCTS THEREOF

Malcolm H. Shatz, Tonawanda, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed May 28, 1965, Ser. No. 459,897
Int. Cl. C08f *15/06*; C09k *3/28*
U.S. Cl. 260—94.7 **5 Claims**

A polymer is produced by a process which comprises (1) mixing an (a) olefinic polymer solution (b) polyhalocyclopentadiene and (c) water to make an emulsion, (2) heating the resulting emulsion until the desired polymer is obtained and (3) recovering the polymer.

The polymers of this invention find use in coating compositions and as a fire retardant additive.

3,444,155

PROCESS FOR PREPARING DEGRADED POLYETHYLENE

John J. Fish, New York, N.Y., assignor to The Western Petrochemical Corporation, Chanute, Kans., a corporation of Delaware

No Drawing. Filed Apr. 15, 1966, Ser. No. 542,754
Int. Cl. C08f *27/28, 27/22*
U.S. Cl. 260—94.9 **7 Claims**

ABSTRACT OF THE DISCLOSURE

A novel process for reforming polyethylene comprises heating polyethylene in the presence of a peroxygen compound to a temperature of at least 760° F. in not more than about six minutes. The reformed polyethylene is useful alone or mixed with a hydrocarbon solvent and/or paraffin wax for cleaning and polishing.

3,444,156

PROCESS FOR HARDENING GELATINE

René de Montmollin, Riehen, Hansrolf Loeffel, Bern, Alfred Oetiker, Fribourg, and Arthur Buehler, Rheinfelden, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed June 28, 1966, Ser. No. 561,057
Claims priority, application Switzerland, July 5, 1965, 9,370/65
Int. Cl. C09h *9/00*; G03c *1/30*
U.S. Cl. 260—117 **9 Claims**

Gelatine is hardened with a monomeric compound which is practically colorless. This compound contains at least one acidic group imparting solubility in water and at least two α,β-ethylenically unsaturated α-halogencarboxylic amide radicals. This process is especially suitable for hardening gelatine in photographic emulsions.

3,444,157

PROCESS FOR THE MANUFACTURE OF AQUEOUS AZO AND BASIC LAKE PIGMENTS

Hideo Tanaka, Nakano-ku, Tokyo, and Katsushiro Inagaki, Daito-ku, Tokyo, Japan, assignors to Dainichiseika Color & Chemicals Mfg. Co., Ltd., Tokyo, Japan, a corporation of Japan

No Drawing. Filed Mar. 16, 1964, Ser. No. 353,018
Int. Cl. C09b *29/06, 63/00, 67/00*
U.S. Cl. 260—176 **3 Claims**

1. In a process for the production of a stable aqueous micro dispersion of an azo pigment by coupling a diazotized aromatic primary amino compound having no water-solubilizing group with an azoic coupling component having no water-solubilizing group in aqueous medium or of a basic dye pigment by laking a basic dyestuff with laking agent in aqueous medium, the improvement of carrying the pigment formation in the presence of an amphipathic organic compound selected from the group consisting of ethers of polyethylene glycols and long chain alcohols, esters of polyethylene glycols and long chain carboxylic acids, ethers of polyethylene glycols and alkylphenols, polyesters of polyalcohol esterified with long chain carboxylic acids, and condensation products of propylene oxides and ethylene oxides, in an amount of from 80 to 150% by weight based on the pigment formed at a suitable temperature which is able to form said pigments, the pigment formed being present in the aqueous micro dispersion in an amount of from about 3 to about 15% by weight, wherein the formation of pigment and micro dispersing of said pigment in water is simultaneously carried out, and wherein said amphipathic organic compound includes more than 35 mols of combined ethylenoxide.

3,444,158

METHOD FOR THE PRODUCTION OF NUCLEOTIDES

Mikio Honjo and Kin-Ichi Imai, Takatsuki, and Yoshiyasu Furukawa, Suita, Japan, assignors to Takeda Chemical Industries, Ltd., Osaka, Japan

No Drawing. Filed Oct. 4, 1966, Ser. No. 584,092
Claims priority, application Japan, Oct. 4, 1965, 40/60,945
Int. Cl. C07d *51/50*
U.S. Cl. 260—211.5 **7 Claims**

Nucleotide is produced by reacting the nucleoside selected from the group consisting of 1-β-D-arabinofuranosylcytosine, 9-β-D-glucopyranosyladenine, 2'-O-methyluridine, 2'-O-methylcytidine, 9-β-D-xylofuranosyladenine, 2'-deoxycytidine, 2'-deoxyadenosine, 2'-deoxyuridine and thymidine with phosphorylating agent in the presence of a member selected from the group consisting of phenols, nitriles, organic carboxylic acid esters and nitro-hydrocarbons.

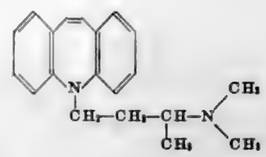
3,444,159

5-(γ-DIMETHYLAMINO-n-BUTYL) IMINOSTILBENE AND SALTS THEREOF

Charles Gansser, Essonne, France, and Walter Schindler, Riehen, Switzerland, assignors to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 235,177, Oct. 30, 1962. This application June 19, 1967, Ser. No. 647,178
Claims priority, application Switzerland, Aug. 28, 1959, 77,491/59; Jan. 13, 1960, 299/60; Feb. 25, 1960, 2,108/60
Int. Cl. C07d *57/36*; A61k *9/04, 27/00*
U.S. Cl. 260—239 **3 Claims**

The compound of the formula



and pharmaceutically acceptable salts thereof with inorganic and organic acids, which compounds have strong spasmolytic and especially musculotropic action rendering them useful in the treatment of psychosomatic disturbances, especially spastic conditions of smooth muscle structures of the gastro-intestinal, urogenital and biliary

tracts and/or the bronchial system; spasmolytic compositions containing the aforesaid compounds; and a method for the treatment of spastic conditions of smooth muscle structures in mammals with the aid of the aforesaid compounds.

3,444,160

PROTECTION OF Δ^4-3-KETOSTEROIDS BY THE FORMATION OF PROTONATED 3-ENAMINES

Bradford H. Walker, Portage, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Apr. 3, 1967, Ser. No. 627,671
Int. Cl. C07c *169/34, 167/34*
U.S. Cl. 260—239.5 **20 Claims**

The use of protonated 3-enamines as protective groups for the A,B-ring system during electrophilic attack on the C,D-ring system and the 17-side chain of Δ^4-3-ketosteroids.

3,444,161

ALKYL CYANO ALUMINUM COMPOUNDS AND PROCESS FOR INTRODUCING A CYANO GROUP INTO AN α,β UNSATURATED CARBONYL COMPOUND

Wataru Nagata, Nishinomiya-shi, Japan, assignor to Shionogi & Co., Ltd., Osaka-shi, Japan

No Drawing. Filed Sept. 2, 1965, Ser. No. 484,754
Int. Cl. C07c *121/02, 167/00*; C07f *5/06*
U.S. Cl. 260—239.55 **9 Claims**

A cyano group is introduced into the β-position of a compound having an α,β-unsaturated carbonyl structure, a β-hydroxy-carbonyl structure, a β-amino-carbonyl structure or a β-mercaptocarbonyl structure or their vinylogs, by the action of an alkylcyanoaluminum compound alone—i.e. in absence of any other cyanating agent and more especially in absence of HCN— as hydrocyanation reagent.

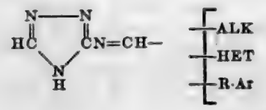
3,444,162

NOVEL SUBSTITUTED 1,2,4-TRIAZOLES(4H)

Asher A. Hyatt, Lexington, Mass., assignor to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Dec. 3, 1965, Ser. No. 511,520
Int. Cl. C07d *55/06*; A01n *9/22*
U.S. Cl. 260—240 **4 Claims**

Novel substituted 1,2,4-triazoles(4H) of the following formula:



where "ALK" is heptyl, "HET" is 2-pyridyl and "R·Ar" is styryl. The compounds are useful as biological toxicants, plant growth regulators, pesticides and fungicides.

3,444,163

THIOACRYLIC DERIVATIVES

Edgar J. Smutny, San Francisco, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 21, 1966, Ser. No. 528,808
Int. Cl. C09b *23/04*; C10m *1/38*; A01n *9/12*
U.S. Cl. 260—240 **12 Claims**

Certain novel dithioacrylate and thioacrylamide derivatives of dithioacrylic acid, useful as herbicides and as monomers in processes of polymerization and copolymerization, are produced by the reaction of 5-hydrotrithionium salts with certain nitrogen-containing bases.

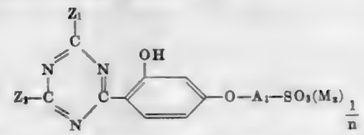
3,444,164

HYDROXYPHENYL-1,3,5-TRIAZINES CONTAINING SULFONIC ACID GROUPS AND THEIR PREPARATION

Christian Luethi, Munchenstein, and Karl Eschle, Basel, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed Sept. 20, 1966, Ser. No. 580,601
Claims priority, application Switzerland, Sept. 24, 1965, 13,274/65
Int. Cl. C07f *1/08*; C07d *55/12, 143/38*
U.S. Cl. 260—248 **9 Claims**

New aryl-1,3,5-triazine compounds are provided which are represented by the formula



in which A_1 represents an alkylene group and M_x a hydrogen ion, an ammonium ion or a cation of a metal of group 1a, 2a, 3 or 4b, or of the first period of the transition metals of the Periodic Table or of manganese, copper or chromium, and *n* indicates the valency of the cation.

The compounds of this invention are especially useful as stabilizing agents for protecting organic materials from the harmful effects of ultraviolet radiation.

3,444,165

PROCESS FOR THE PREPARATION OF PYRAZINOYLGUANIDINES

Peter I. Pollak, Scotch Plains, and Roger J. Tull, Metuchen, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Aug. 25, 1966, Ser. No. 574,906
Int. Cl. C07d *51/62*; C07c *129/04, 129/12*
U.S. Cl. 260—250 **2 Claims**

A process is described for the preparation of pyrazinoylguanidines which comprises the treatment of an alkali metal salt of a pyrazinoic acid amide with a 1-amidinopyrazole. The products have utility as diuretics.

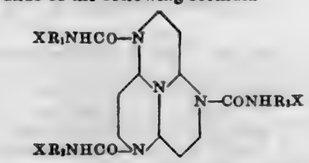
3,444,166

NOVEL 1,4,7-TRIS(HALOHYDROCARBYLCARBAMOYL)DODECAHYDRO - 1,4,7,9b-TETRAAZAPHENALENES AND 1,4,7 - TRIS(NITROHYDROCARBYLCARBAMOYL)DODECAHYDRO-1,4,7,9b-TETRAAZAPHENALENES

Nathan A. Edelson, Philadelphia, Pa., assignor to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 445,265, Apr. 2, 1965. This application Aug. 31, 1966, Ser. No. 576,223
Int. Cl. C07d *57/12, 57/18*; A01n *9/22*
U.S. Cl. 260—256.4 **6 Claims**

Compounds of the following formula



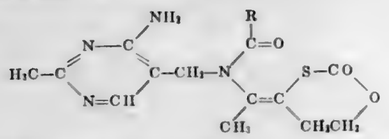
where R_1, R_2 and R_3 is a hydrocarbon radical free of aliphatic unsaturation and containing up to 10 C atoms and X is a halogen atom of atomic weight below 130, or the NO_2 radical. The compounds are useful as insecticides and microbiological toxicants and are prepared by the reaction of halohydrocarbon isocyanates and nitrohydrocarbon isocyanates with dodecahydro-1,4,7,9b-tetraazaphenalenes.

3,444,167
PROCESS FOR THE PRODUCTION OF THIAMINE DERIVATIVES

Masuo Murakami, Kozo Takahashi, Kiyoshi Murase, Hidenori Iwamoto, and Yasubumi Hirata, Tokyo, Japan, assignors to Yamanouchi Pharmaceutical Co., Ltd., Chuo-ku, Tokyo, Japan

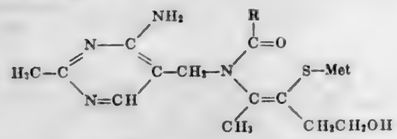
No Drawing. Filed Feb. 10, 1966, Ser. No. 526,408
Claims priority, application Japan, Feb. 16, 1965, 40/8,758
Int. Cl. C07d *51/42, 89/12*
U.S. Cl. 260—256.5 12 Claims

Compounds of the formula



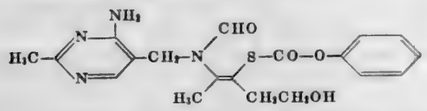
(I)

wherein R is H or α-hydroxyethyl, having a rapid and prolonged vitamin B_1 activity, can be prepared by reacting a compound of the formula



(II)

with an active carbonyl compound such as phenylchlorocarbonate. A novel S-carbonyl thiamine derivative such as the compound of the formula



can be isolated as intermediate, if desired. The end products are used in vitamin B_1 therapy.

3,444,168
6 - (LOWER-ALKANOYL) - 4 - HYDROXY - 2 - MERCAPTO - 5,6,7,8 - TETRAHYDROPYRIDO[4,3 - d] PYRIMIDINES

Julian Richard Mayer, Arlington, Va., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 30, 1966, Ser. No. 605,954
Int. Cl. C07d *57/20;* A61k *27/00*
U.S. Cl. 260—256.5 2 Claims

6-(lower-alkanoyl)-4-hydroxy-2-mercapto-5,6,7,8 - tetrahydropyrido[4,3-d]pyrimidines, having depressant and stimulatory activities, are prepared by reacting a lower-alkyl 1-(lower-alkanoyl)-4-oxopiperidine - 3 - carboxylate with thiourea in the presence of an alkaline condensation agent.

3,444,169
PROCESS FOR 11 - AMINODIBENZ[b,f][1,4]OXAZEPINES AND ANALOGOUS THIAZEPINES

Charles Frederick Howell, Upper Saddle River, and Robert Allis Hardy, Jr., Ridgewood, N.J., and Nicanor Quinones Quinones, New York, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Jan. 17, 1966, Ser. No. 520,865
Int. Cl. C07d *87/54, 93/40*
U.S. Cl. 260—268 7 Claims

The preparation of substituted 11-aminodibenz[b,f][1,4]oxazepines or thiazepines by reacting the corresponding 11-amino, lower alkylamino or dilower alkylamino oxazepine or thiazepine with a primary or secondary amine, is described. The compounds prepared by the process are useful as tranquilizers or for their antidepressant properties.

3,444,170
PROCESS WHICH COMPRISES REACTING A CARBOXYLIC INTERMEDIATE WITH AN AMINE

George R. Norman, Lyndhurst, and William M. Le Suer, Cleveland, Ohio, assignors to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

No Drawing. Original application Jan. 27, 1966, Ser. No. 523,244, and a continuation-in-part of application Ser. No. 468,948, July 1, 1965. Divided and this application Jan. 23, 1967, Ser. No. 610,769
Int. Cl. C07d *51/64;* C10m *3/26*
U.S. Cl. 260—268 8 Claims

The present application relates to a high molecular weight acylated amine formed by reacting an amine, such as a polyethylene polyamine, with a carboxylic reactant which is prepared by reacting a halohydrocarbon and an olefinic carboxylic substance such as acrylic acid. The acylated amine usually contains a mixture of amide, imide, salt and amidine linkages. It is useful in lubricants, fuels, plastics, etc.

3,444,171
ACETYLENIC IMIDES AND METHOD FOR THEIR PREPARATION

Johan Richard Dahlbom, Sodertalje, and Bo Lennart Karlen, Skarholmen, Sweden, assignors to Aktiebolaget Astra Apothekarnes Kemiska Fabriker, Sodertalje, Sweden, a company of Sweden

Continuation-in-part of application Ser. No. 468,110, June 29, 1965. This application Dec. 30, 1966, Ser. No. 606,063
Claims priority, application Sweden, July 3, 1964, 8,163/64
Int. Cl. C07d *29/28, 27/04*
U.S. Cl. 260—281 10 Claims

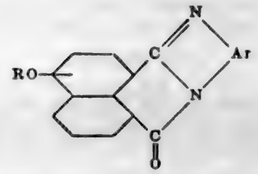
A new class of amino-imide compounds is disclosed in which an imide group and an amino group are joined by a chain containing ethylenic or acetylenic unsaturation. The compounds are effective to antagonize the tremorogenic effect of oxotremorine. Methods of synthesis and evaluations of pharmacological properties are described.

3,444,172
DISPERSE DYESTUFFS OF THE ARYLIMINAZOLE SERIES

Hisashi Senshu, Kitakyushu-shi, Fukuoka-ken, Japan, assignor to Mitsubishi Chemical Industries Limited, Tokyo, Japan, a corporation of Japan

No Drawing. Filed Sept. 10, 1964, Ser. No. 395,601
Int. Cl. C07d *57/00;* D06p *1/16*
U.S. Cl. 260—282 3 Claims

Dyestuffs of the following formula:



where R denotes alkyl-, aryl-, or cycloalkyl-group which may contain a substituent or substituents exclusive of the sulpho-group and carboxyl- group and Ar is either a benzene nucleus which contains a substituent or substituents exclusive of the sulpho-group and carboxyl-group, each of the two carbon atoms at the 0-position of said nucleus being combined with the two nitrogen atoms, or a naphthalene nucleus which may contain a substituent or substituents exclusive of the sulpho-groups and carboxylic-group, each of the two carbon atoms at the 0-position or the peri-position of said nucleus being combined with the two nitrogen atoms. Such dyestuffs are particularly suited for dying polyethylene terephthalate.

3,444,173
SUBSTITUTED 8-HYDROXY-QUINOLINE DERIVATIVES

Irving M. Goldman, Niantic, Conn., assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of two applications Ser. No. 438,735, Mar. 10, 1965, and Ser. No. 496,158, Oct. 14, 1965. This application May 12, 1966, Ser. No. 549,485
Int. Cl. C07d *33/52, 33/44;* A61k *27/00*
U.S. Cl. 260—288 14 Claims

1-[5-(8-hydroxyquinolyl)]-2-aminoethanol compounds, the corresponding 1,2,3,4-tetrahydro compounds and acid addition salts thereof useful as bronchodilators.

3,444,174
SUBSTITUTED 4,7-DIHYDROINDOLES

William Alan Remers, Suffern, N.Y., and Martin Joseph Weiss, Oradell, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Oct. 5, 1966, Ser. No. 584,355
Int. Cl. C07d *27/56, 29/26*
U.S. Cl. 260—294.7 9 Claims

The preparation of substituted 4,7-dihydroindoles, are described. They are prepared from the corresponding indoles by treatment with an alkali metal or alkaline earth metals in liquid ammonia in the presence of an alkanol. The compounds of the invention are useful for their central nervous system depressant properties.

3,444,175
CERTAIN PICOLYLMETHYL SULFONES

Tsung-Ying Shen, Westfield, Alexander Matzuk, Colonia, and Conrad P. Dorn, Jr., Plainfield, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Nov. 9, 1966, Ser. No. 592,990
Int. Cl. C07d *31/48;* A61k *27/00*
U.S. Cl. 260—294.8 4 Claims

This invention describes new heterocyclicmethylsulfones and their method of preparation. The compounds of this invention exhibit antiinflammatory properties and, as such, are useful as active ingredients for pharmaceutical compositions used in treating inflammation.

3,444,176
CERTAIN 4-DILOWERALKYLAMINO-LOWER ALKYL - 5 - PYRIDYL (OR PHENYL)-2,3-DIHYDRO - 1 - BENZOTHIEPINS AND DERIVATIVES THEREOF

Richard J. Mohrbacher, Fort Washington, Pa., assignor to McNeil Laboratories, Incorporated, a corporation of Pennsylvania

No Drawing. Continuation-in-part of application Ser. No. 462,411, June 8, 1965. This application Apr. 28, 1967, Ser. No. 636,570
Int. Cl. C07d *29/34, 67/00, 87/46*
U.S. Cl. 260—294.8 10 Claims

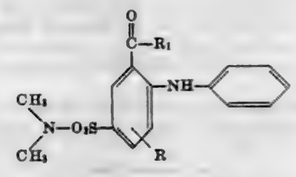
The compounds are of the class of 2,3-dihydrobenzothiepins, useful for their pharmacological properties as hypotensive agents.

3,444,177
N-PHENYL - 5 - (DIMETHYLSULFAMOYL)-ANTHRANILIC ACID, ESTERS AND AMIDES THEREOF

Paul Schmidt and Kurt Eichenberger, Therwil, Basel-Land, and Alberto Rossi, Oberwil, Basel-Land, and Max Wilhelm, Allschwil, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of applications Ser. No. 261,498, Feb. 27, 1963, and Ser. No. 571,428, Aug. 10, 1966. This application Jan. 30, 1967, Ser. No. 612,366
Claims priority, application Switzerland, Mar. 9, 1962, 2,852/62
Int. Cl. C07c *143/80;* C07d *87/00;* A61k *27/00*
U.S. Cl. 260—239.7 11 Claims

New compounds of the formula



R=hydrogen, alkyl, alkoxy, halogen;
R_1=amino, mono-alkylamino, dialkylamino, alkyleneamino, oxaalkyleneamino, thiaalkyleneamino, azaalkyleneamino, alkoxy, hydroxy.

For example: 5-(dimethylsulfamoyl)-2-anilino-benzoic acid; use: anti-inflammatory agents.

3,444,178
CERTAIN HALOGENATED 2-(2-THIAZOLYL) AMINOFURAN-5-ONES

Gerald L. Bachman, Kirkwood, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed June 16, 1967, Ser. No. 646,447
Int. Cl. C07d *91/34;* C07c *53/32*
U.S. Cl. 260—306.8 9 Claims

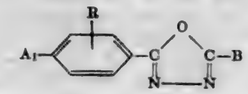
This disclosure covers halogenated thiazolylamino furanones and their synthesis from the appropriate 2-aminothiazole and 4-oxo-2-butenoic acid.

3.444,179
PHENYL 1,3,4-OXDIAZOLE DERIVATIVES

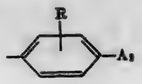
Adolf Emil Siegrist, Basel, Peter Liechti, Binningen, Erwin Maeder, Aesch, Basel-Land, and Leonardo Guglielmetti, Birsfelden, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed Apr. 26, 1966, Ser. No. 545,269
Claims priority, application Switzerland, May 10, 1965, 6,469/65
Int. Cl. C07d *99/02, 99/10, 85/54*
U.S. Cl. 260—307 4 Claims

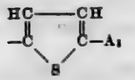
New phenyl-1,3,4-oxdiazole derivatives are provided which are represented by the formula



wherein A_1 is a 1,3,4-oxdiazolyl, phenyl, 2-benzoxazolyl or 2-naphthoxazolyl residue and B represents a residue selected from the group consisting of



and



wherein A_2 is a 2-naphthoxazolyl or a 2-benzoxazolyl residue and A_3 is a 2-benzoxazolyl or a 1,3,4-oxdiazolyl residue, and R is a monovalent, non-chromophoric substituent such as halogen, alkyl, phenyl, carboxyl, sulpho, hydroxyl, amino, and their substitutive and functional derivatives. The terminal phenyl nuclei in the residue A_1, A_2 and A_3 may contain 1 to 2 substituents R and the phenylene nuclei of these formulae may contain one such substituent R.

The derivatives of this invention are especially useful as optical brighteners for high molecular weight organic materials.

3,444,180

OXDIAZOLE COMPOUNDS

Erwin Maeder, Aesch, Basel-Land, and Adolf Emil Siegrist, Basel, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

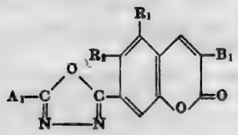
No Drawing. Filed Sept. 21, 1966, Ser. No. 581,161

Claims priority, application Switzerland, Oct. 4, 1965, 13,644/65

Int. Cl. C07d *87/52, 7/24*

U.S. Cl. 260—307 **4 Claims**

New 7-oxdiazolyl-coumarin compounds are provided which may be represented by the formula



wherein A_1 and B_1 each represents an aromatic-carbocyclic or aromatic-heterocyclic residue or an aralkenyl radical, and R_1 R_2, and R_3 each represents hydrogen, lower alkyl or lower alkoxy.

The compounds of this invention are especially useful as optical brighteners for organic materials.

3,444,181

ISOINDOLES

William J. Houlihan, Mountain Lakes, N.J., assignor to Sandoz Inc.

No Drawing. Filed Mar. 23, 1967, Ser. No. 625,298

Int. Cl. C07d *49/34, 31/40, 49/30*

U.S. Cl. 260—309.6 **2 Claims**

The compounds are of the classes (1) 5-hydroxy-5-heterocyclic - 2,3 - dihydro-5H-imidazo[2,1-a]isoindoles, (2) 6 - hydroxy - 6 - heterocyclic - 3,4 - dihydro-2H,6H-pyrimido[2,1-a]isoindoles and (3) 7-hydroxy-7-heterocyclic - 2,3,4,5 - tetrahydro - 7H - [1,3]diazepino[2,1-a] isoindoles, which are useful as anorectic agents.

3,444,182

1a-PHTHALOYLGLOTAMYLMITOMYCIN C

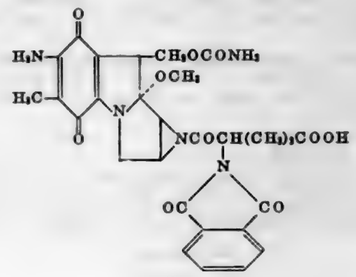
Masanao Matsui, Tokyo, Keizo Uzu, Shizuoka-ken, and Yasuhiro Yamada and Shigetoshi Wakaki, Tokyo, Japan, assignors to Kyowa Hakko Kogyo Co., Ltd., Tokyo, Japan, a corporation of Japan

Filed Nov. 25, 1964, Ser. No. 413,743

Int. Cl. C07d *57/00, 27/00;* **A61k** *21/00*

U.S. Cl. 260—326 **1 Claim**

1. The chemical compound 1a-phthaloylglutamylitomycin C having the formula:



3,444,183

FILM-FORMING COMPOSITION

Leo P. Hubbuch, Lima, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Sept. 22, 1965, Ser. No. 489,425

Int. Cl. C08g *41/02;* **C09d** *5/24*

U.S. Cl. 260—32.6 **6 Claims**

There is disclosed, as a film-forming composition, a dispersion of carbon particles in a solution of a heat-resistant polymer (e.g., polyamic acid, polyamide-imide or aromatic polyamide) in a blend of a suitable polar solvent (e.g., N,N-dimethylformamide or N,N-dimethylacetamide) and a suitable aromatic liquid (e.g., benzene, toluene or xylene); the weight ratio of the polar solvent to the aromatic liquid is about 50:50 to 90:10, preferably about 60:40 to 75:25; the weight ratio of the carbon particles to the polymer is about 7:93 to 45:55; the composition, which has beneficial utility in the manufacture of electrical heating elements, is surprisingly free of the problems associated with premature gelling and undue increase in viscosity.

3,444,184

N,N'-DIALLYL DIIMIDE OF 1,2,3,4-CYCLOPENTANE-CARBOXYLIC ACID

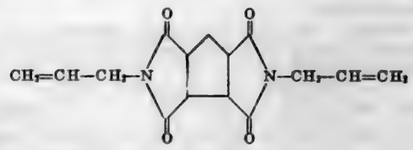
John Christos Petropoulos, Norwalk, and Roland Ralph Di Leone, Rowayton, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Apr. 30, 1965, Ser. No. 452,399

Int. Cl. C07d *27/28;* **C08g** *20/16*

U.S. Cl. 260—326.3 **1 Claim**

A compound of the structure:



which may be employed as a polymer precursor.

3,444,185

PROCESS OF PREPARING 1-(2-OXO 1-PYRROLIDINO) 4-(1 - PYRROLIDINO)-BUT-2-YNE AND SALTS THEREOF

Pierre P. G. Nau, Argenteuil, France, assignor to Societe Civile Anguil, Paris, France, a French body corporate

No Drawing. Continuation-in-part of application Ser. No. 458,440, May 24, 1965. This application Nov. 28, 1966, Ser. No. 597,485

Claims priority, application France, May 26, 1964, 975,856

Int. Cl. C07d *27/74;* **A61k** *27/00*

U.S. Cl. 260—326.3 **8 Claims**

Oxotremorine is prepared with improved yields by condensing a propargyl alcohol ester with an alkali metal derivative of pyrrolidone between −80° C. and +25° C. and condensing N-propargyl pyrrolidone thus obtained with formaldehyde and pyrrolidine in the presence of copper ions. Oxotremorine gives with polycarboxylic acids new salts of advantage over the free base.

3,444,186

DITHIO AMINO ALKANES

Michihiko Sakai and Masayuki Kato, Kyoto, Hikoichi Hagiwara, Osaka, and Kazuo Konishi, Kyoto, Japan, assignors to Takeda Chemical Industries, Ltd., Osaka, Japan

No Drawing. Original application June 25, 1962, Ser. No. 205,088, now Patent No. 3,318,936, dated May 9, 1967. Divided and this application Sept. 22, 1966, Ser. No. 612,060

Claims priority, application Japan, June 27, 1961, 36/23,009

Int. Cl. C07d; C07c; A01n *9/12*

U.S. Cl. 260—327 **6 Claims**

1. 4,9-bis(dimethylamino)-1,2,6,7-tetrathiecane.

3,444,187

NOVEL β-HALOGLUTAMATE AND α,β-DEHYDROGLUTAMATE COMPOUNDS

Jisaburo Ueyanagi, Nishinomiya, Hidesuke Iwasaki, Itami, Takaaki Kamiya, Takatsuki, and Osamu Oka, Sakai, Japan, assignors to Takeda Chemical Industries, Ltd., Osaka, Japan

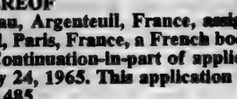
No Drawing. Filed Dec. 22, 1965, Ser. No. 515,727

Claims priority, application Japan, Dec. 23, 1964, 39/72,965; Mar. 25, 1965, 40/17,585

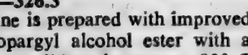
Int. Cl. C07c *103/22, 103/46, 101/22*

U.S. Cl. 260—471 **7 Claims**

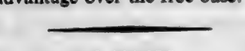
A method is provided for producing compounds of the formula



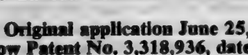
wherein R^1 is H or a carboxylic acid acyl group having up to seven carbon atoms and R^2 is H or a lower alkyl group. A compound of the formula



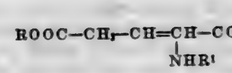
wherein R and R^3 represent the same or different lower alkyl groups and R^4 is H or a carboxylic acyl group having up to seven carbon atoms is halogenated to yield a compound of the formula



The latter compound is subsequently reacted with hydroxylamine and the resultant product treated with a base to produce the final products. Novel intermediate compounds of the formulae



and



are also provided.

3,444,188

7-FLUORO-B-HOMO STEROIDS AND THEIR PREPARATION

Lawrence H. Knox, deceased, late of Mexico City, Mexico, by Anne A. Knox, legal representative, Mexico City, Mexico, assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed Mar. 29, 1966, Ser. No. 538,433

Claims priority, application Mexico, Mar. 31, 1965, 81,826, 81,827

Int. Cl. C07c *171/02, 167/04*

U.S. Cl. 260—488 **16 Claims**

7-fluoro-B-homo-19-nor steroids of androstane and pregnane series prepared by the reaction of a 3β-acyloxy-19-hydroxy-Δ^5 steroid with an α-fluorinated amine having useful therapeutic activity.

3,444,189

VINYL ACETATE SYNTHESIS

Kenneth L. Olivier, Placentia, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California

Continuation-in-part of application Ser. No. 301,239, Aug. 12, 1963. This application May 12, 1966, Ser. No. 557,848

Int. Cl. C07c *67/04, 69/02*

U.S. Cl. 260—497 **6 Claims**

The invention comprises the oxidation of ethylene to vinyl acetate under liquid phase conditions using a reaction medium comprising acetic acid and a platinum group metal with a nitrogen oxide compound as a redox agent. Oxygen and ethylene are introduced into contact with the reaction medium and the products from the oxidation comprise vinyl acetate and acetaldehyde, the latter being recycled for oxidation to acetic acid to replenish the acetic acid consumed in the formation of the vinyl acetate. The invention is based upon the discovery that the acetaldehyde can be readily oxidized to acetic acid in the reaction zone in the presence of nitrogen oxides and higher yields of acetic acid are attainable than can be achieved with other conventionally used redox agents such as the multivalent heavy metal salts.

3,444,190

2-DIMETHYLAMINO-2-METHYL-1-PROPANOL p-TOLUENESULFONATE

Scott H. Foster, Waban, James D. Larkin, West Springfield, and Charles R. Williams, Longmeadow, Mass., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 191,751, May 2, 1962. This application Dec. 14, 1965, Ser. No. 513,818

Int. Cl. C07c *143/28, 143/38*

U.S. Cl. 260—501.19 **1 Claim**

1. 2-dimethylamino-2-methyl - 1 - propanol p-toluenesulfonate.

3,444,191

NORMAL ALKENYL-1-SULFONATE DETERGENTS

Walter David Nielsen, Richmond, Calif., assignor to Chevron Research Company, a corporation of Delaware

No Drawing. Filed Jan. 27, 1964, Ser. No. 340,521

Int. Cl. C07c *139/00*

U.S. Cl. 260—513 **2 Claims**

Alkenyl-1-sulfonic acids and alkenyl-1-sulfonates are prepared from C_{12}–C_{22} α-olefin mixtures having an aver-

age molecular weight in the range 220–245 in which 50 to 75 weight percent of the olefin is a C_{16}–C_{18}, inclusive, α-olefin mixture and from 5 to 30 weight percent of the olefin feed is above or below the C_{16}–C_{18} range. These materials are wholly biodegradable and are satisfactory replacements for alkylbenzene sulfonate detergent actives.

3,444,192

PROCESS FOR PREPARING ALKOXY-CHLORINATED BENZOIC ACIDS

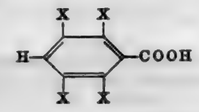
Jack S. Newcomer, Wilson, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 833,907, Aug. 17, 1959. This application Apr. 17, 1961, Ser. No. 103,260

Int. Cl. C07c *65/04, 51/00;* **A01n** *9/24*

U.S. Cl. 260—521 **1 Claim**

1. The process for preparing alkoxychlorinated benzoic acids of the following formula:



where X is a member selected from the group consisting of hydrogen, halogen and alkoxy, one substituent being alkoxy and at least two being halogen, comprising the step of heating a compound selected from the group consisting of 2,3,6-trichlorobenzoic acid, 2,3,5-trichlorobenzoic acid and 2,3,5,6-tetrachlorobenzoic acid, with an alcohol plus at least two moles of a base selected from the group consisting of sodium alkoxide, sodium hydroxide, potassium hydroxide, and mixtures thereof, until one molar equivalent of chloride ion is released.

3,444,193

PROCESS FOR PREPARATION OF DIPHENIC ACID

Nicholas P. Greco, Pittsburgh, Pa., assignor to Koppers Company, Inc., a corporation of Delaware

Filed Aug. 5, 1966, Ser. No. 570,601

Int. Cl. C07c *63/02, 63/14*

U.S. Cl. 260—523 **7 Claims**

A non-catalytic oxidation of the ozonation products of phenanthrene is carried out in the presence of oxygen under superatmospheric pressure and elevated temperatures in an alkaline solution whose pH is greater than 13. Diphenic acid, an intermediate in the preparation of plasticizers and resins, is produced in high purity and yields.

3,444,194

PROCESS FOR THE PREPARATION OF ADIPIC ACID

Francesco Minisci, Giuseppe Belvedere, Mirella Cecere, and Adolfo Quilico, Milan, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy

No Drawing. Filed Sept. 20, 1963, Ser. No. 311,282

Claims priority, application Italy, Sept. 25, 1962, 19,003/62

Int. Cl. C07c *51/28*

U.S. Cl. 260—531 **3 Claims**

1. A process for the preparation of adipic acid by oxidation of cyclohexanol and cyclohexanone, which comprises reacting a cyclohexane solution, containing 5 to 10% of a mixture of cyclohexanol and cyclohexanone, with N_2O_4 in the presence of vanadium salts at a temperature between 30 and 40° C.

3,444,195

GAUCHE FORM SUCCINIC ACID

Tadataka Hara, Tokyo, Japan, assignor of one-half to Kaken Kagaku Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

Continuation of application Ser. No. 860,227, Dec. 17, 1959. This application July 14, 1966, Ser. No. 565,318

Claims priority, application Japan, Jan. 14, 1959, 34/534; June 29, 1959, 34/20,893

Int. Cl. C07c *55/10, 51/00, 51/48*

U.S. Cl. 260—537 **2 Claims**

There is provided the novel material identified as cis-succinic acid of gauche form having a molecular weight of about 120, being about 40.83% by weight carbon, 5.14% hydrogen and 54.03% oxygen, having a positive specific rotation in aqueous solution and having a single maximum in ultra-violet absorption spectrum at 200 mμ. A process is provided for producing the novel material as well as allotropic modifications thereof. Also provided is a process for deodorizing amino acids-containing materials by contacting such materials with the novel product of this invention.

3,444,196

METHODS OF MANUFACTURING 2,6-DICHLOROBENZAMIDE

Cornelis Johannes Schoot, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 24, 1964, Ser. No. 362,496

Claims priority, application Netherlands, May 2, 1963, 292,269

Int. Cl. C07c *103/02*

U.S. Cl. 260—558 **4 Claims**

2,6-dichlorobenzamide is produced by the removal through heating of water and hydrochloric acid from 1-hydroxy, 2,2,6,6 - tetrachlorocyclohexane-carbonamide. Catalysts such as zinc chloride and iodine may be employed. The 2,6-dichlorobenzamide is an intermediate for the production of 2,6-dichlorobenzonitrile, a known herbicide.

3,444,197

3,4-DIHALOCINNAMAMIDES

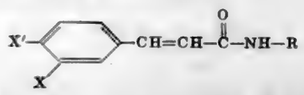
Gilbert A. Youngdale, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Sept. 27, 1966, Ser. No. 582,265

Int. Cl. C07c *103/22*

U.S. Cl. 260—558 **3 Claims**

1. Compound of the formula:



wherein X and X′ are halogen, and R is hydrogen or methyl.

3,444,198

PROCESS FOR PRODUCING α-6-DEOXYTETRACYCLINES

James J. Korst, Old Lyme, Conn., assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 615,317, Feb. 13, 1967. This application Jan. 19, 1968, Ser. No. 699,016

Int. Cl. C07c *103/19*

U.S. Cl. 260—559 **15 Claims**

In producing α- and β-6-deoxytetracyclines by catalytic hydrogenation of 6-deoxy-6-demethyl-6 - methylenetetracyclines and their 11a-chloro derivatives or the salts of these compounds, an increased ratio of α to β-isomer in the reaction product is obtained when the noble metal hydrogenation catalyst is poisoned.

3,444,199

AMINO SUBSTITUTED TRICYCLO [3.2.2.0^{2,4}] NONANES

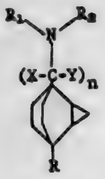
Joel G. Whitney, Claymont, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 29, 1966, Ser. No. 538,232

Int. Cl. C07c *87/40, 17/00*

U.S. Cl. 260—563 **7 Claims**

Tricyclo[3.2.2.0^{2,4}]nonanes of the formula



where *n* is 0 or 1; X and Y are hydrogen, methyl or ethyl, and are the same or different; R is hydrogen or alkyl of 1 to 4 carbon atoms; R_1 and R_2 are hydrogen, alkyl of 1 to 4 carbon atoms, or allyl, and are the same or different, and non-toxic acid addition salts thereof are useful for inhibiting and deterring the incidence and growth of harmful viruses.

3,444,200

ARYL-ALKYL QUATERNARY AMMONIUM COMPOUNDS

Eugene J. Miller, Jr., Wheaton, and Harlan E. Tiefenthal, Western Springs, Ill., assignors, by mesne assignments, to Armour Industrial Chemical Company, a corporation of Delaware

No Drawing. Filed Oct. 21, 1965, Ser. No. 500,203

Int. Cl. C07c *87/30*

U.S. Cl. 260—567.6 **15 Claims**

Aryl-substituted aliphatic quaternary ammonium compounds having one or two long chain alkyl groups to which an aryl group is attached to an internal carbon atom, useful as cationic bituminous emulsifiers and for fabric treating and in textile processing.

3,444,201

PROCESS FOR PREPARING PHENYLALKYL-AMINES BY CATALYTIC HYDROGENATION OF AZIRIDINES

George E. Ham, Lake Jackson, and Prella M. Phillips, Angleton, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Dec. 18, 1964, Ser. No. 419,564

Int. Cl. C07c *85/10, 85/00*

U.S. Cl. 260—570.8 **5 Claims**

A method of preparing secondary amines by selective catalytic hydrogenation of an N-substituted aziridine compound in the presence of a rhodium catalyst.

3,444,202

PRODUCTION OF N-[2,7,11(15)-ALKAPOLYENYL]AMINES

Harold Chung, Berkeley, Kenneth C. Dewhirst, San Pablo, and Edgar J. Smutny, San Francisco, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 12, 1966, Ser. No. 549,471

Int. Cl. C07c *87/24, 87/14, 87/20*

U.S. Cl. 260—576 **16 Claims**

C_{15}–C_{20} N-[2,7,11(15)-alkapolyenyl]derivatives of amines and their production by reacting a primary or secondary amine with C_4–C_5 1,3-alkadiene and C_6–C_{15} 1,3,7(11)-alkapolyene in the presence of a catalyst system comprising transition metal compounds as catalyst and phenoxide anion as catalyst promoter.

3,444,203

PRODUCTION OF METHYLAMINES

Abraham N. Kurtz, Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

Filed July 29, 1965, Ser. No. 475,671

Int. Cl. C07c *87/08, 85/02*

U.S. Cl. 260—583 **13 Claims**

A mixture of mono-, di- and trimethyl amines is produced by the reaction of hydrogen, carbon monoxide and ammonia at elevated temperatures and pressures in the presence of a catalyst containing copper deposited on alumina or chromia having a surface area of at least 1 square meter per gram. This process is also applicable to the production of other methyl amine derivatives by substituting a primary or secondary hydrocarbyl amine for ammonia.

3,444,204

PROCESS FOR THE PREPARATION OF TERTIARY AMINES

Hartwig Schütt, Dusseldorf-Benrath, Germany, assignor to Henkel & Cie. G.m.b.H., Dusseldorf-Holthausen, Germany, a corporation of Germany

No Drawing. Continuation-in-part of application Ser. No. 434,134, Feb. 19, 1965. This application Nov. 2, 1965, Ser. No. 506,134

Claims priority, application Germany, Nov. 6, 1964, H 54,233

Int. Cl. C07c *85/12*

U.S. Cl. 260—583 **3 Claims**

A process for the continuous production of higher-alkyl-tertiary amines which comprises the steps of continuously contacting in the gaseous phase an N,N-di-aliphatic-substituted higher fatty acid amide with at least a 50-fold excess of hydrogen at temperatures between about 200° C. and about 350° C., and pressures of between about 50 atmospheres to about 300 atmospheres in the presence of copper chromite as a catalyst, and recovering said higher-alkyl-tertiary amines.

3,444,205

PROCESS FOR PREPARING CONTINUOUSLY HIGHER MOLECULAR SECONDARY AND TERTIARY AMINES

Walter Frohlich, Burgkirchen, Germany, Hans Oberrauch, Flix, Tarragona, Spain, and Kurt Fischer, Munich, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Dec. 7, 1966, Ser. No. 599,740

Claims priority, application Germany, Dec. 10, 1965, F 47,884

Int. Cl. C07c *87/24, 87/127, 85/02*

U.S. Cl. 260—583 **3 Claims**

Continuous preparation of higher molecular amines by reacting nitriles of 8–22 carbon atoms with low boiling primary or secondary alkylamines in a molar ratio of about 1:3 to 1:10 in the presence of hydrogen and a catalytic amount of alkalized copper-chromium catalyst at about 120–180° C. and 180–210 atmospheres.

3,444,206

PROCESS FOR MANUFACTURE OF (OPTIONALLY-2-ALKYLATED) CYCLOPENTANE-1,3-DIONES

Raphael Pappo, Skokie, and Mike G. Scaros, Arlington Heights, Ill., assignors to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Dec. 2, 1966, Ser. No. 598,618

Int. Cl. C07c *49/28, 45/16*

U.S. Cl. 260—586 **10 Claims**

Process for catalytic hydrogenolysis of (optionally 2 - alkylated) cyclopentane - 1,3,4 - triones or (optionally 2 - alkylated) 4 - hydroxycyclopentane-1,3-diones to afford the corresponding (optionally 2-alkylated) cyclopentane-

1,3-diones, which are useful as intermediates in the manufacture of commercially valuable steroids.

3,444,207
DIMER OF 2,2,3,4,5,6-HEXACHLORO-CYCLOHEXADIENONE

John E. Franz, Crestwood, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Feb. 6, 1967, Ser. No. 614,000
Int. Cl. C07c *49/48*; A01n *9/24*
U.S. Cl. 260—586 1 Claim

A dimer of 2,2,3,4,5,6-hexachlorocyclohexadienone which is useful as an insecticide, herbicide and fire-proofing agent.

3,444,208
DIMERIZATION OF HYDROCARBYL VINYL KETONES

James D. McClure, Oakland, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 395,009, Sept. 8, 1964. This application Oct. 12, 1967, Ser. No. 674,766
Int. Cl. C07c *49/12*, *49/76*
U.S. Cl. 260—590 10 Claims

Novel 2,4 - dihydrocarbonoyl - 1 - butenes are produced by dimerization of hydrocarbyl vinyl ketones in solution in inert, liquid reaction solvent in the presence of a catalytic amount of tertiary aromatic phosphine.

3,444,209
(O - AMINOPHENYL) - THIO - DIHYDRO - THIOPHENE-1,1-DIOXIDES AND THEIR DERIVATIVES

John R. Carson, Norristown, Pa., assignor to McNeil Laboratories, Incorporated, a corporation of Pennsylvania

No Drawing. Continuation-in-part of applications Ser. No. 636,569, Apr. 28, 1967, and Ser. No. 500,206, Oct. 21, 1965. This application Dec. 19, 1967, Ser. No. 691,712
Int. Cl. C07d *63/08*
U.S. Cl. 260—332.1 6 Claims

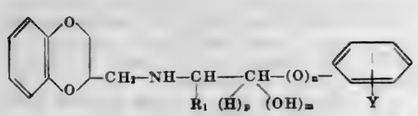
The compounds are of the class of sulfolanes, useful for their ultraviolet absorption properties.

3,444,210
SECONDARY 2-AMINOMETHYLBENZODIOXANE DERIVATIVES

Hendrik Durk Moed, Volkert Claasen, and Jan van Dijk, Weesp, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Application Aug. 26, 1965, Ser. No. 482,938, now Patent No. 3,324,143, dated June 6, 1967, which is a continuation-in-part of application Ser. No. 293,829, July 9, 1963. Divided and this application Aug. 10, 1966, Ser. No. 578,955
Claims priority, application Netherlands, July 20, 1962, 281,245
Int Cl. C07d *13/00*
U.S. Cl. 260—340.5 1 Claim

1. A benzodioxane derivative of the formula:



wherein R_1 is a member selected from the group consisting of hydrogen and methyl, Y is methylene dioxy, *m*, *n* and *p* are each whole numbers from 0 to 1, the sum of $p+m$ is 1 and the salts thereof with pharmaceutically acceptable acids.

3,444,211
RUTIN TRI(DIHYDROXYPROPYL)ETHERS

Shigeharu Kono and Kunishige Sugiyama, Tokyo, Japan, assignors to Eisai Kabushika Kaisha, Tokyo, Japan

No Drawing. Filed Nov. 28, 1966, Ser. No. 597,235
Int. Cl. C07d *7/38*
U.S. Cl. 260—345.2 1 Claim

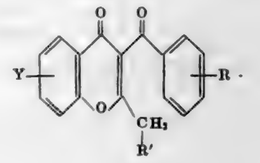
Novel water-soluble rutin 7,3',4'-tri(dihydroxypropyl) ether and rutin 5,7,4'-tri(dihydroxypropyl)ethers which are used for therapeutical treatment of effusion of blood from the peripheral vascular system, high blood pressure, cerebral hemorrhage and the like. The novel rutin ethers by virtue of their high water solubility are particularly adapted to administration through intraperitoneal injection.

3,444,212
3-AROYL-2-ALKYLCHROMONE COMPOUNDS

Kenneth Robert Huffman and Edwin Fisher Ullman, Stamford, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Oct. 24, 1966, Ser. No. 588,745
Int. Cl. C07d *7/24*, *7/34*
U.S. Cl. 260—345.2 6 Claims

Photochromic 3-aroyl-2-alkylchromones of the formula



wherein R' is alkyl, R is hydrogen, alkyl, hydroxy, alkoxy, alkylthio, cyano, nitro, amino, halogen or trifluoromethyl and Y is the same as R or phenyl, alkylphenyl or acyloxy, these compounds being useful in sunglasses, windows and the like, are prepared by condensing an appropriately substituted ortho-hydroxy dibenzoylmethane with an acid anhydride in the presence of a mildly basic catalyst.

3,444,213
CONTINUOUS PROCESS FOR PRODUCING dl ALPHA TOCOPHEROL

Donald R. Nelan, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed July 12, 1967, Ser. No. 652,912
Int. Cl. C07d *7/22*
U.S. Cl. 260—345.5 8 Claims

A process has been found which provides high yields of high purity dl-α-tocopherols. The process comprises progressively and simultaneously introducing trimethylhydroquinone, phytol or isophytol or phytadiene, and an acid condensation catalyst, advantageously all in an organic solvent, into a packed reaction column which is maintained at a temperature above the distillation temperature of the solvent but below the distilling temperature of the reactants. The catalyst and other reactants are flowed continuously through the column, and solvent is continuously distilled upwardly countercurrently to the flowing reaction mixture. Crude dl-α-tocopherol product is progressively withdrawn from the column and subsequently purified.

3,444,214
1-AMINO-4-ANILINO-2-NITRO-ANTHRAQUINONES AND DERIVATIVES

Paul Buecheler, Reinach, Basel-Land, Switzerland, assignor to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland

No Drawing. Filed Jan. 18, 1965, Ser. No. 426,393
Claims priority, application Switzerland, Jan. 20, 1964, 599/64; Mar. 4, 1964, 2,760/64; Mar. 20, 1964, 3,597/64
Int. Cl. C07c *97/12*; C09b *1/16*
U.S. Cl. 260—378 9 Claims

Dyes of the 1,4-diamino-anthraquinone series substituted with at least one nitro group in the nucleus are particularly suitable for dyeing, padding or printing textile materials of fully synthetic or semi-synthetic high molecular substances.

3,444,215
PREPARATION OF COMPOUNDS OF THE 1,4-DIANILINO - 5 - NITRO - 8 - HYDROXY-ANTHRAQUINONE SERIES

Gunter Gehrke, Cologne-Flittard, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Continuation of abandoned application Ser. No. 405,621, Oct. 21, 1964. This application Sept. 22, 1967, Ser. No. 669,974
Claims priority, application Germany, Nov. 2, 1963, F 41,170
Int. Cl. C09b *3/12*; D06p *1/20*
U.S. Cl. 260—380 6 Claims

1,4-diarylamino-5-nitro-8-hydroxy-anthraquinones are produced by reacting 1,8-dihydroxy-5-nitro-anthraquinones substituted in the 4-position by an arylamino moiety with a primary arylamine at a temperature of from 100° C. to 200° C. in the presence of boric acid, said arylamine being a benzene series compound or a benzene series compound substituted by alkyl, alkoxy or halogen. The resulting anthraquinone is useful as a dyestuff.

3,444,216
PROCESS FOR THE OXIDATION OF PRIMARY AND SECONDARY ALCOHOLS

Jekishan R. Parikh, Kalamazoo, Mich., and William Von E. Doering, Hamden, Conn., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Nov. 16, 1966, Ser. No. 594,700
Int. Cl. C07c *167/00*, *45/16*, *169/34*
U.S. Cl. 260—397.45 27 Claims

1. A process for the oxidation of primary and secondary alcohols, to the corresponding aldehydes and ketones, which comprises reacting a primary or secondary alcohol with a liquid hydrocarbon sulfoxide and sulfur trioxide in the presence of a tertiary amine.

14. A process for the selective oxidation of a 20-hydroxy group in a steroid containing a sterically hindered 11β-hydroxy group to obtain the corresponding 11β-hydroxy-20-keto steroid, which comprises reacting an 11β, 20-dihydroxy steroid under substantially anhydrous conditions with a liquid hydrocarbon sulfoxide and sulfur trioxide in the presence of a tertiary amine.

3,444,217
SELECTIVE SOLVOLYSIS OF 11β,17α,21-TRIESTERS OF THE PREGNANE SERIES

Elliot L. Shapiro, Cedar Grove, and Lawrence E. Finckenor, Wayne, N.J., assignors to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 483,810, Aug. 30, 1965. This application May 3, 1968, Ser. No. 726,529
Int. Cl. C07c *169/36*; A61k *17/06*
U.S. Cl. 260—397.45 10 Claims

This invention relates to a method for preparing 17α,21-diesters by effecting a selective solvolysis of an 11β-trihaloacetoxy-17α,21-di-lower-alkanoyloxy tri-ester of the pregnane series. This invention also relates to novel 17α, 21-di-esters prepared by said method, having anti-inflammatory activity.

3,444,218
STABILIZED FATTY PRODUCT AND METHOD OF PRODUCING SAME

Talmadge B. Tribble and Eugene L. Rondenet, Glenview, Ill., assignors to Flavor Corporation of America, Chicago, Ill., a corporation of Delaware

No Drawing. Original application June 17, 1963, Ser. No. 288,468, now Patent No. 3,318,819, dated May 9, 1967. Divided and this application Feb. 6, 1967, Ser. No. 619,113
Int. Cl. C11b *5/00*; B01j *1/16*
U.S. Cl. 260—398.5 5 Claims

A preserved fatty product obtained by treating organic fatty materials with a new anti-oxidant preservative containing butylated hydroxytoluene or butylated hydroxyanisole or mixtures thereof and anthranilic acid or its methyl or ethyl esters, to obtain fats, oils, greases, tallows or the like which are stabilized against oxidative rancidity for prolonged periods of time.

3,444,219
PURIFICATION OF 9- (AND 10-) ACRYLAMIDOSTEARIC ACID

David P. Sheetz and Terry D. Filer, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Nov. 14, 1966, Ser. No. 593,665
Int. Cl. C08g *20/06*; C07c *57/02*
U.S. Cl. 260—404 2 Claims

This invention relates to the purification of 9- (and 10-) acrylamidostearic acid by removal of contaminants with certain solvents.

3,444,220
MAGNESIUM SILICATE CATALYZED POLYMERIZATION OF UNSATURATED FATTY ACIDS

Donald H. Wheeler, Minneapolis, Minn., assignor to General Mills, Inc., a corporation of Delaware

No Drawing. Filed Nov. 23, 1966, Ser. No. 596,433
Int. Cl. C09f *7/06*
U.S. Cl. 260—407 9 Claims

A process of polymerizing unsaturated fatty acids useful for preparing polyamides wherein the catalyst used in the polymerization process is a synthetic magnesium silicate catalyst which has been treated with a nitrogenous compound such as piperidine, pyridine and aniline.

3,444,221
PROCESS FOR THE CONTINUOUS HARDENING OF UNSATURATED OILS AND FATS

Theodor Voeste and Hans-Joachim Schmidt, Frankfurt am Main, Germany, assignors to Metallgesellschaft Aktiengesellschaft, Frankfurt am Main, Germany, a corporation of Germany

Filed Nov. 30, 1966, Ser. No. 598,003
Claims priority, application Germany, Dec. 3, 1965, M 67,524
Int. Cl. C11c *3/12*
U.S. Cl. 260—409 10 Claims

The disclosure covers the continuous hardening of hy-

drogenatable oil or fat material (e.g., soy bean oil) by contact in liquid phase with hydrogen gas in the presence of a hydrogenation catalyst (e.g., 0.005–0.5% suspended nickel particles based on the hydrogenatable material) at excess pressure (e.g., 2–10 atm.) and preferably elevated temperature (e.g., 150–200° C.) in a confined zone completely filled with the reactants, in a volumetric ratio of the portion of the zone filled with the liquid phase to the portion thereof filled with hydrogen gas of at least 10:1 (preferably 50–10:1). Unused hydrogen is preferably recycled with fresh hydrogen (e.g., in a volumetric ratio of unused recirculating hydrogen to fresh hydrogen of 2–10:1).

3,444,222

(DECAMETHYLENEDITHIO)DIALANINE COMPOUNDS

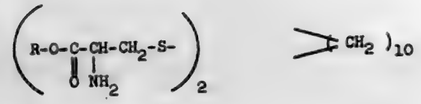
Carleton W. Roberts, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed June 22, 1966, Ser. No. 559,404

Int. Cl. C07c *149/24*

U.S. Cl. 260—481 **5 Claims**

The present invention is directed to a (decamethylenedithio)dialanine compound of the formula:



and its hydrohalide addition salts. In the above formula, R represents hydrogen or loweralkyl of from 1 to 4, both inclusive, carbon atoms, and the term "hydrohalide" is employed to designate hydrochloride, hydrobromide, and hydriodide. The products are crystalline solid materials, useful as herbicides to control the growth of plant organisms; and as substrates in the practices of vapor phase chromatography.

3,444,223

PRODUCTION OF ORGANOLEAD COMPOUNDS

Richard D. Gorsich, Baton Rouge, La., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Continuation-in-part of applications Ser. No. 408,388, Ser. No. 408,400, and Ser. No. 408,401, Nov. 2, 1964. This application May 20, 1968, Ser. No. 730,619

Int. Cl. C07f *7/24, 7/26*; C07b *17/00*

U.S. Cl. 260—437 **31 Claims**

Process for the production of an organolead compound having at least one radical selected from the group consisting of aryl, vinylic and alkyl radicals attached directly to the lead by first combining, as a liquid composition, at least one compound selected from the group consisting of aryl magnesium halides, vinylic magnesium halides, and alkyl magnesium halides with a hydrocarbon halide in a cyclic monoether and then in a second step adding a lead salt to the composition. In another embodiment of the invention a tetravalent lead compound having at least one vinylic group attached to the lead is produced by reacting a vinylic magnesium chloride, lead chloride and an alkyl chloride in the presence of a defined cyclic monoether.

3,444,224

DISPLACEMENT OF NUCLEOPHILIC SUBSTITUENTS ON AROMATIC CHROMIUM TRICARBONYLS

Mark Crosby Whiting, Oxford, England, assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Original application Jan. 22, 1960, Ser. No. 4,018, now Patent No. 3,361,780, dated Jan. 2, 1968. Divided and this application Sept. 13, 1967, Ser. No. 695,535

Int. Cl. C07f *11/00*

U.S. Cl. 260—438.5 **4 Claims**

The reaction of aromatic compounds with chromium hexacarbonyl is facilitated by use of polar solvents such as dioxane and dimethylformamide. Electron repelling substituents (such as dimethylamine) on the aromatic ring also facilitate the reaction.

The characteristic properties of functional groups appended to the aromatic ring are generally preserved in aromatic Group VI-B metal tricarbonyls. However, the aromatic moiety undergoes nucleophilic substitution more readily than the parent compound. Fluoro-substituted aromatic Group VI–B metal tricarbonyls undergo nucleophilic displacement very readily.

The aromatic component can be displaced thermally or by such compounds as pyridine, diphenylarsine, or carbon monoxide.

3,444,225

ORGANOPOLYSILOXANES, THEIR PREPARATION AND THEIR USES

Jean Boissieras and Marcel Lefort, Lyon, France, assignors to Rhone-Poulenc S.A., Paris, France, a corporation of France

No Drawing. Filed May 10, 1965, Ser. No. 454,675

Claims priority, application France, May 20, 1964, 975,134, Patent 1,404,561

Int. Cl. C07f *7/02*

U.S. Cl. 260—448.2 **5 Claims**

The invention provides new polysiloxanes in which each terminal silicon atom has two hydrogen atoms attached thereto. These new polysiloxanes are useful as waterproofing and anti-adhesion agents.

3,444,226

HETEROCYCLIC ALUMINUM COMPOUNDS

Horst W. Schmank, Ringgold, Ga., and Stewart M. Beekman, Signal Mountain, and James M. Holbert, Lookout Mountain, Tenn., assignors to The Chattanooga Medicine Co., Chattanooga, Tenn., a corporation of Tennessee

No Drawing. Filed May 2, 1966, Ser. No. 546,557

Int. Cl. C07f *5/06*

U.S. Cl. 260—448 **10 Claims**

Heterocyclic organic aluminum compounds particularly useful as anti-perspirants, and consisting of derivatives of 2-chloro-1,3,2-dioxalumolanes, the compounds being soluble in absolute alcohol and compatible with fluorocarbon propellants.

3,444,227

TRIMETHYLSILOXYALUMINUM DIHYDRIDE AND METHOD OF PREPARATION

Charles B. Roberts, Midland, and Darell D. Toner, Sanford, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed July 24, 1967, Ser. No. 655,321

Int. Cl. C10m *1/54*; D06m *15/00*; C07f *5/06*

U.S. Cl. 260—448 **5 Claims**

This invention relates to a new composition of matter, $H_2AlOSi(CH_3)_3$, and to a method for its preparation by reacting, in an inert solvent, substantially equimolar quantities of aluminum hydride diethyl etherate and trimethylsilanol at a temperature of between about minus 20° C. and 30° C. $H_2AlOSi(CH_3)_3$ finds utility as an intermediate

to make inorganic Al-O-Al polymers, as an oil additive to increase viscosity and viscosity index and as a water repellant for cloth.

3,444,228

2,2,5,5-TETRAMETHYL-2,5-DISILA-1,3-DIOXOLAN AND PROCESS THEREFOR

Walter Simmler, Odenthal-Schlinghofen, Hans Niederprum, Monheim, and Hans Sattlegger, Cologne-Buchheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

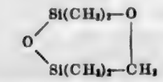
No Drawing. Filed July 6, 1966, Ser. No. 563,065

Claims priority, application Germany, Aug. 7, 1965, F 46,845

Int. Cl. C07f *7/18, 7/02, 7/08*

U.S. Cl. 260—448.8 **3 Claims**

1. 2,2,5,5-tetramethyl-2,5-disila-1,3-dioxolan of the formula



2. Process for the preparation of the compound of claim 1 which comprises heating a mixture of equimolar amounts of 1,3-di-(hydroxymethyl)-tetramethyldisiloxane and 1,3-di-(bromomethyl)-tetramethyldisiloxane and an excess of triethylamine until the salt precipitation which occurs is completed, removing the nitrogen compounds from the reaction mixture by filtration and evaporation, adding a catalytic amount of p-toluenesulphonic acid to the remaining liquid, subjecting this to distillation under reduced pressure, and recovering the 2,2,5,5-tetramethyl-2,5-disila-1,3-dioxolan which is formed and evaporates as distillate.

3,444,229

DISILAHEXANEDIOL

Howard A. Vaughn, Jr., Scotia, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Original application Sept. 9, 1963, Ser. No. 307,346, now Patent No. 3,328,340, dated June 27, 1967. Divided and this application Sept. 28, 1966, Ser. No. 615,862

Int. Cl. C07f *7/18*

U.S. Cl. 260—448.8 **2 Claims**

The chemical compound 1,1,2,2,4,4-hexamethyl-6,6-diphenyl-3,5-dioxa-4,6-disila-1,6-hexanediol and a process for producing the compound is disclosed. The compound is used as an aid for reducing structure and knit time in certain organopolysiloxane compositions.

3,444,230

ACETYLENIC DIPERESTERS

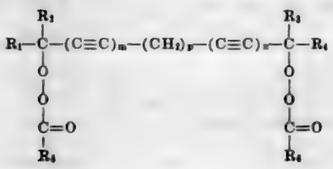
Ronald L. Friedman and Roger N. Lewis, Pinole, Calif., assignors to Argus Chemical Corporation, a corporation of Delaware

No Drawing. Filed Dec. 3, 1965, Ser. No. 511,354

Int. Cl. C07c *73/06*; C08g *17/003*

U.S. Cl. 260—453 **5 Claims**

Aliphatic diperesters of alkyne diols having the formula:



where R_1, R_2, R_3 and R_4 are lower hydrocarbon groups, m and n are 0 or 1 with the proviso that their sum is always at least one, p is a positive integer, and R_5 and R_6 are the same or different aliphatic groups of from 1 to 20 carbon atoms are useful as catalysts for the free radical initiated polymerization of polyesters. Use of these diperesters as catalysts eliminates various distortions in the structure of the finished molded resin product.

3,444,231

PROCESS FOR THE PREPARATION OF ISOCYANATES AND ISOTHIOCYANATES

Walter Merz, Leverkusen, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Feb. 1, 1966, Ser. No. 523,846

Claims priority, application Germany, Feb. 2, 1965, F 45,123

Int. Cl. C07c *119/04, 161/04*

U.S. Cl. 260—453 **6 Claims**

Isocyanates and isothiocyanates are prepared by a process which comprises reacting a monofunctional isocyanate or a monofunctional isothiocyanate with a substituted azomethine at an elevated temperature.

3,444,232

O-ALKYL OR PHENYLALKYL BENZOHYDROXAMIC ACIDS

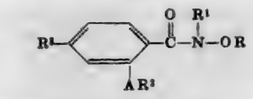
Jack Bernstein, New Brunswick, N.J., assignor to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed May 18, 1966, Ser. No. 550,948

Int. Cl. C07c *103/30, 161/00*; A61k *27/00*

U.S. Cl. 260—453 **4 Claims**

Compounds of the formula



wherein R is hydrogen, lower alkyl or phenyl-lower alkyl, R^1 is hydrogen or lower alkyl, R^2 is lower alkyl or lower alkenyl, R^3 is nitro, amino, lower alkylamino or di-lower alkylamino and A is oxygen or sulfur,

are useful in coccidiostat compositions.

3,444,233

PREPARATION OF ALKYL AND ARYL ALPHA-CYANOACRYLATES

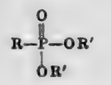
Robert Rabinowitz, Stamford, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Aug. 26, 1966, Ser. No. 575,234

Int. Cl. C07c *121/02*

U.S. Cl. 260—465 **6 Claims**

A process for producing monomeric alpha-cyanoacrylates from a cyanoacetate and formaldehyde in a two-step procedure. In the first step, the cyanoacetate and formaldehyde are polymerized in a non-aqueous solution in the presence of a condensation catalyst and a high boiling liquid phosphate or phosphonate. Upon completoin of the polymerization, the polymeric mixture containing the phosphate or phosphonate is then thermally depolymerized. The phosphate or phosphonate is represented by the formula:



wherein R' is alkyl of 1–18 carbons, aryl of 1–3 rings or aralkyl of 1–3 rings and up to 32 carbons; and R is either R' or OR'.

3,444,234

AMMONIA RECOVERY WITH A MOLTEN SALT IN PROCESSES FOR THE PRODUCTION OF MONOOLEFINICALLY UNSATURATED NITRILES

James L. Callahan, Bedford Heights, and Gordon G. Cross, Chagrin Falls, Ohio, assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed Nov. 9, 1966, Ser. No. 592,992

Int. Cl. C07c *121/02, 121/04*

U.S. Cl. 260—465.3 5 Claims

A process for the recovery of and recycle of excess ammonia from reactors used in the ammoxidation of monoolefins to unsaturated nitriles, wherein a molten salt or a mixture of molten salts of phosphoric and sulfuric acids in the temperature range from about 300° F. to about 700° F. is used to absorb the reactor effluent, which is then desorbed by heating the molten salt. The desired organic compounds are recovered and ammonia is recycled to the reactor.

3,444,235

PREPARATION OF ADIPONITRILE

Pierre Jean Antoine Chabardès and Charles Camille Dominique Grard, Lyon, and Michel Pierre Francois Thiers, Brignais, France, assignors to Rhone-Poulenc S.A., Paris, France, a French body corporate

No Drawing. Continuation-in-part of application Ser. No. 396,371, Sept. 14, 1964. This application Dec. 13, 1965. Ser. No. 513,527

Claims priority, application France, Sept. 17, 1963, 947,754; Oct. 29, 1963, 952,175; Jan. 14, 1964, 960,256; May 8, 1964, 973,771; Aug. 19, 1964, 985,611; Dec. 23, 1964, 999,774

Int. Cl. C07c *121/02*

U.S. Cl. 260—465.8 11 Claims

Adiponitrile is prepared by heating acrylonitrile with a metal carbonyl or derivative thereof, hydrogen, a polymerization inhibitor, and preferably also a hydrogenation inhibitor.

3,444,236

PREPARATION OF CYANOPHENOLS BY DEHYDRATION OF HYDROXYBENZALDOXIMES WITH PHOSGENE

Yoshihiko Nishizawa, Nara-shi, Masataka Nakagawa, Yamatotakada-shi, and Akio Kimura, Takarazuka-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., Higashi-ku, Osaka, Japan, a corporation of Japan

No Drawing. Filed July 11, 1966, Ser. No. 564,012

Claims priority, application Japan, July 29, 1965, 40/46,033; Oct. 2, 1965, 40/60,435

Int. Cl. C07c *121/50, 47/52*

U.S. Cl. 260—465 6 Claims

A method for producing cyanophenols, such as p-cyanophenol, which may be used as intermediates in preparing agricultural chemicals by dehydrating a corresponding hydroxybenzaldoxime with phosgene in a reaction medium such as water, and benzene. The hydroxybenzaldoxime may be used without isolation from an oxime formation reaction mixture obtained by reacting a hydroxybenzaldehyde with a hydroxylamine aqueous solution.

3,444,237

ESTERS OF CYCLOHEXANE-1,2,4-TRICARBOXYLIC ACID

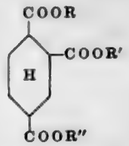
Fred Jaffe, Cincinnati, Ohio, assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Mar. 23, 1966, Ser. No. 536,658

Int. Cl. C07c *69/74, 51/36;* C08f *45/40*

U.S. Cl. 260—468 3 Claims

In abstract, this invention is directed to a compound having the formula



in which R, R', and R'' are each C_nH_{2n+1} in which *n* is 6–16.

3,444,238

ISOMERIZATION OF 5-METHYLMETADIOXANES

Francis Weiss, Piere-Benite, Rhone, and Arsene Isard, Saint-Genis Laval, Rhone, France, assignors to Ugine Kuhlmann, Paris, France, a French company

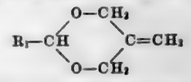
No Drawing. Continuation-in-part of application Ser. No. 411,580, Nov. 6, 1964. This application Feb. 6, 1968, Ser. No. 703,258

Claims priority, application France, Nov. 15, 1963, 953,922; Nov. 16, 1963, 954,002; Jan. 10, 1964, 959,873

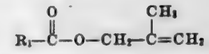
Int. Cl. C07c *27/00, 45/00, 67/00*

U.S. Cl. 260—468 12 Claims

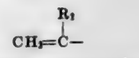
5-methylene metadioxanes of the formula



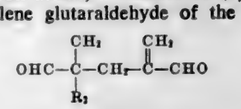
wherein R_1 represents a hydrogen atom or a hydrocarbon radical containing 1 to 18 carbon atoms is isomerized to produce, depending on the starting metadioxane, (I) a methallylic ester of the formula



or when R_1 in the starting metadioxane is a vinyl radical of the formula



wherein R_2 is a hydrogen atom or a lower alkyl containing 1 to 5 carbon atoms, a mixture of (I) and (II) 2-methyl-4-methylene glutaraldehyde of the formula



3,444,239

(p-PHENYLENEBIS(METHYLENETHIO)) DIALANINE COMPOUNDS

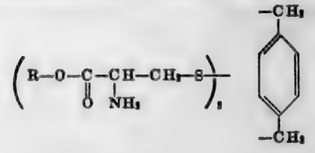
Carleton W. Roberts, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed June 22, 1966, Ser. No. 559,385

Int. Cl. C07c *149/42*

U.S. Cl. 260—470 5 Claims

The present invention is directed to a (p-phenylenebis (methylenethio))dialanine compound of the formula:



and its hydrohalide addition salts. In the formula, R represents hydrogen or lower alkyl of from 1 to 4, both inclusive, carbon atoms, and the term "hydrohalide" designates hydrobromide hydrochloride. and hydriodide. The products are crystalline solid materials useful as herbicides to control the growth of plant organisms and as substrates in the practices of vapor phase chromatography.

3,444,240

OXIDATION OF ISOBUTYLENE TO METHACRYLALDEHYDE OVER COMPLEX TUNGSTEN OXIDE CATALYSTS

Donald M. Coyne, Prairie Village, and Roger P. Cahoy, Merriam, Kans., assignors to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Continuation-in-part of application Ser. No. 247,307, Dec. 26, 1962. This application Apr. 12, 1966, Ser. No. 541,955

Int. Cl. C07c *45/04;* C07b *3/00;* B01j *11/82*

U.S. Cl. 260—604 1 Claim

1. A process for converting isobutylene to methacrolein comprising reacting isobutylene at a temperature within the range of about 350 to 525° C. in the presence of oxygen and an oxide composition, the empirical formula of which lies within the limits:

$$Cu_{0\pm1}Te_{1.5\pm0.2}P_{1.1\pm0.1}W_{12}O_{\text{approx. }50}$$

said oxide composition being produced by heating an intimate mixture of the oxides to a temperature at least as high as that employed in converting isobutylene to methacrolein and being on the surface of a refractory solid which is essentially non-reactive with respect to the metal oxide composition and possesses a surface area of less than about 10 square meters per gram.

3,444,241

PROCESS FOR THE PREPARATION OF DIALKYL POLYSULFIDES

Wolfgang T. Elsfeld, Troisdorf, Germany, and Edward D. Weil, Yonkers, N.Y., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 14, 1966, Ser. No. 593,742

Int. Cl. C07c *149/12*

U.S. Cl. 260—608 8 Claims

Process for the preparation of dialkyl polysulfides through the reaction of a vinyl halide compound with a hydrosulfide salt in the presence of hydrogen sulfide. The process is preferably conducted at autogenous pressures in the presence of a suitable solvent for the reactants.

3,444,242

SURFACE ACTIVE AGENTS

Larry M. Rue, South St. Paul, and Thomas E. Brunelle and William G. Mizuno, St. Paul, Minn., assignors to Economics Laboratory, Inc., St. Paul, Minn., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 392,592, Aug. 27, 1964. This application Mar. 4, 1968, Ser. No. 709,965

Int. Cl. C07c *41/10, 43/04, 43/14*

U.S. Cl. 260—611 4 Claims

Surface active agents having a combination of desirable properties including defoaming, good sheeting action, low foaming, caustic stability and biodegradability, which agents are prepared by ethoxylating a long chain alcohol with the chain being terminated with a benzyl group.

3,444,243

PROCESS FOR THE PREPARATION OF BETA-HALOGEN ETHERS

Carlo Bujtar, Ferrara, and Emilio Martini, Bologna, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy, a corporation of Italy

No Drawing. Filed Jan. 10, 1966, Ser. No. 519,420

Claims priority, application Italy, Jan. 13, 1965, 566/65

Int. Cl. C07c *41/10, 41/00, 41/06*

U.S. Cl. 260—611 8 Claims

Preparation of beta-halogen ethers by reacting (1) an olefin with (2) an alcohol or a phenol and (3) a halogen in the presence of (4) an excess of anionic ion-exchange resin adsorbent based on amount of halogen present.

3,444,244

DINITROPHENYLPROPANOLS HAVING HERBICIDAL PROPERTIES

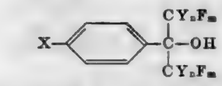
Peter E. Newallis, Morris Plains, and Edmund J. Rumanowski, Dover, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Nov. 15, 1966, Ser. No. 594,417

Int. Cl. C07c *39/04, 35/02, 43/28*

U.S. Cl. 260—613 9 Claims

Herbicidally active dinitrophenyl propanols of the formula



wherein X is a member of the group consisting of Cl, Br, methoxy and hydroxy; Y is a member of the group consisting of hydrogen and chlorine; F is fluorine; *n* is an integer 0–2 and *m* is an integer 3—*n*.

3,444,245

PROCESS FOR MAKING 4,4'-BIS-HYDROXYALKYL ETHERS OF STILBENE

Rolf Sieber, Cologne-Longerich, Germany, assignor to Wacker-Chemie G.m.b.H., Munich, Bavaria, Germany, a corporation of Germany

No Drawing. Filed Aug. 16, 1967, Ser. No. 660,904

Claims priority, application Germany, Aug. 17, 1966, W 42,236

Int. Cl. C07c *41/02, 43/20*

U.S. Cl. 260—613 1 Claim

This invention relates to 4,4'-bis-hydroxyalkyl ethers of stilbene, and it has for its object to provide a simple and efficient process for making such compounds.

3,444,246

3,5-DICYCLOHEXYL PHENOL

Alvin F. Shepard, Grand Island, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 113,995, June 1, 1961. This application Feb. 23, 1966, Ser. No. 529,264

Int. Cl. C07c *39/12*

U.S. Cl. 260—619 1 Claim

1. 3,5-dicyclohexyl phenol.

3,444,247

STABILIZATION OF 1,1,1-TRICHLOROETHANE

Wesley L. Archer, Midland, and Elbert L. Simpson, Auburn, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Dec. 1, 1967, Ser. No. 687,132

Int. Cl. C07c *17/42*

U.S. Cl. 260—652.5 2 Claims

The reaction of 1,1,1-trichloroethane with aluminum is inhibited by the presence in the 1,1,1-trichloroethane

of a small amount of dissolved p-dimethylaminobenzaldehyde. Concentrations of the order of 0.01–1 gram mole per liter provide significant inhibition.

3,444,248

STABILIZATION OF 1,1,1-TRICHLOROETHANE

Wesley L. Archer, Midland, and Elbert L. Simpson, Auburn, Mich., and George Richard Graybill, Honolulu, Hawaii, assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Dec. 14, 1967, Ser. No. 690,420
Int. Cl. C23f *15/00*; C07c *17/40, 19/00*
U.S. Cl. 260—652.5 10 Claims

The reaction of 1,1,1-trichloroethane with aluminum is inhibited by the presence in the 1,1,1-trichloroethane of a small amount of a dissolved pyridinecarboxaldehyde or acetylpyridine. Concentrations of the order of 0.01–1 gram mole per liter provide significant inhibition.

3,444,249

2,2-DICHLORO - 1,1,3,3 - TETRAFLUOROPROPANE AND METHOD OF PREPARING SAME

Bernard M. Regan, Chicago, Ill., assignor to Baxter Laboratories, Inc., Morton Grove, Ill., a corporation of Delaware

No Drawing. Original application Mar. 23, 1966, Ser. No. 538,453, now Patent No. 3,332,840, dated July 25, 1967. Divided and this application Feb. 28, 1967, Ser. No. 619,211
Int. Cl. C07c *19/08*; A61k *13/00*
U.S. Cl. 260—653 2 Claims

The compound 2,2-dichloro-1,1,3,3-tetrafluoropropane, useful as an inhalation anesthetic, and the methods of preparing said compound by (a) exothermic reaction of phosphorous pentachloride and 1,1,3,3-tetrafluoroacetone followed by heating to about 170° C. and by (b) photo-induced chlorination of 2-chloro-1,1,3,3-tetrafluoropropane at about 20° C. to about 70° C.

3,444,250

PYROLYSIS OF HEPTAALKYLBENZENONIUM FLUOBORATE TO FORM ALKYL FLUORIDES

George Suld, Springfield, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Original application Dec. 16, 1963, Ser. No. 330,593, now Patent No. 3,371,113. Divided and this application Aug. 7, 1967, Ser. No. 658,624
Int. Cl. C07c *19/08*
U.S. Cl. 260—653 4 Claims

Heptaalkylbenzenonium fluoborates are prepared by contacting an alkylideneheptaalkylcyclohexadiene starting material with $HF\text{-}BF_3$, removing excess HF, and then treating the reaction product with a certain type of ether to form crystalline heptaalkylbenzonium fluoborate. Another embodiment is the same except that the suitable starting material is formed by alkylating benzene or an alkylbenzene until the benzenoid material contains a total of seven alkyl groups.

3,444,251

PRODUCTION OF GEM-DIFLUOROALKENES

Lloyd E. Gardner, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Dec. 23, 1965, Ser. No. 516,129
Int. Cl. C07c *17/34, 17/24*
U.S. Cl. 260—653.5 9 Claims

Gem-difluoroalkenes are produced by dehydrohalogenating 1,1,1-difluorohaloalkanes in the presence of low surface area alumina. Improved results are obtained by the use of low surface area alumina containing at least one metal promoter.

3,444,252

MANUFACTURE OF CHLORINATED HYDROCARBONS

Joseph Horsefield Brown and Ulrich Carl Werner Kopsch, Widnes, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Oct. 18, 1965, Ser. No. 497,443
Claims priority, application Great Britain, Sept. 29, 1965, 41,360/65
Int. Cl. C07c *21/10, 17/10*
U.S. Cl. 260—654 12 Claims

Process for the manufacture of trichloroethylene by reacting hydrogen chloride and elemental oxygen with acetylene in the vapor phase in the presence of a Deacon catalyst and steam and/or a vaporizing liquid chlorinated hydrocarbon which functions as a diluent. The reaction temperature is in the range 100° C. to 350° C. and the acetylene is advantageously used in admixture with ethylene.

3,444,253

ADDITION REACTIONS OF BUTADIENE CATALYZED BY COPPER (I) ZEOLITES

Hans K. Reimlinger, Brussels, Ernest H. De Ruiter, Beersel, and Ulrich K. Kruerke, Brussels, Belgium, assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Sept. 20, 1967, Ser. No. 669,302
Int. Cl. C07c *3/60, 3/10*
U.S. Cl. 260—666 2 Claims

There is disclosed the reaction of butadiene with acetylene to produce 1,4-cyclohexadiene, and the dimerization of butadiene to produce 4-vinylcyclohexene, both reactions being catalyzed by copper (I) zeolites.

3,444,254

PROCESS FOR THE MANUFACTURE OF CYCLODODECATRIENE-(1,5,9)

Walter Herwig, Frankfurt am Main, Germany, assignor to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed May 16, 1967, Ser. No. 638,754
Claims priority, application Germany, May 21, 1966, F 49,257
Int. Cl. C07c *3/20*
U.S. Cl. 260—666 16 Claims

Process for making cyclododecatriene-(1,5,9) or trimethyl cyclododecatrienes-(1,5,9) by trimerizing conjugated dienes with 4 to 5 carbon atoms in a liquid form in the presence of mixed catalysts containing complex compounds of titanium tetrahalides with phosphoric acid tris-dialkylamides.

3,444,255

PRODUCTION OF P-DIALKYLBENZENES

Karl-Heinz Hiller, Heidelberg (Rhine), Hubert Kindler, Ludwigshafen (Rhine), Heinrich Scholz, Heidelberg (Rhine), and Max Strohmeyer, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik, Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Feb. 6, 1967, Ser. No. 614,056
Claims priority, application Germany, Feb. 25, 1966, B 85,964
Int. Cl. C07c *15/04*
U.S. Cl. 260—671 10 Claims

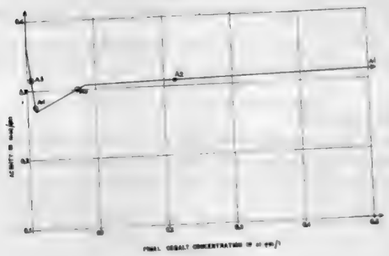
A process for the production of p-dialkylbenzenes by reacting alkylbenzenes or benzene with olefins in the presence of an aluminum chloride catalyst at a temperature above 60° C., the reaction being carried on for less than 3 minutes.

3,444,256

SELECTIVE HYDROGENATION WITH MINIMUM ACIDITY CATALYST

Philippe A. Engelhard, 52 Ave. Foch, Le Havre, Seine-Maritime, France, and Joseph Edouard Weisang, 15 Rue du Docteur Suriray, Le Havre, Seine-Maritime, France

Filed Feb. 13, 1967, Ser. No. 615,612
Claims priority, application France, Feb. 18, 1966, 50,262; Jan. 6, 1967, 90,298; Jan. 31, 1967, 93,090
Int. Cl. C23c *3/04*; C07c *11/02*
U.S. Cl. 260—677 14 Claims



Metals from the group calcium, chromium, cobalt, copper, iron, nickel, and zinc, deposited on aluminum oxide as a support for the catalyst metal and in a quantity so that the resulting surface acidity is as close as possible to the minimum, provide unexpectedly enhanced selectivity for the direct catalytic hydrogenation of small or even trace portions of acetylenic and di-olefinic compounds contained in hydrocarbon mixtures which are predominantly mono-olefinic without hydrogenating the mono-olefinic hydrocarbons.

3,444,257

SELECTIVE HYDROCARBON HYDROGENATION WITH METALLIC CADMIUM ON ALUMINA

Philippe A. Engelhard, 52 Ave. Foch, and Joseph Edouard Weisang, 15 Rue du Docteur Suriray, both of Le Havre, Seine-Maritime, France

No Drawing. Filed Feb. 13, 1967, Ser. No. 615,387
Claims priority, application France, Jan. 6, 1967, 90,299
Int. Cl. C07c *11/00*; B01j *11/06*
U.S. Cl. 260—677 11 Claims

Cadmium metal unexpectedly proves to be a highly selective hydrogenation catalyst, when deposited on a refractory oxide support (such as porous alumina), to provide highly selective results in the direct catalytic hydrogenation of small or even trace portions of acetylenic and di-olefinic hydrocarbons contained in hydrocarbon mixtures which are predominantly mono-olefinic and without hydrogenating the mono-olefinic hydrocarbons.

3,444,258

PRODUCTION OF 1,3,7-OCTATRIENE

Josef F. Kohnle, Alameda, and Lynn H. Slaugh, Lafayette, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 20, 1967, Ser. No. 669,266
Int. Cl. C07c *3/60, 3/10*
U.S. Cl. 260—677 5 Claims

The linear dimer 1,3,7-octatriene is produced as the major product and in preference over the cyclic dimer 4-vinylcyclohexene by dimerizing 1,3-butadiene in the presence of carbon dioxide and a catalytic amount of a complex of platinum or palladium and a tertiary phosphine containing at least one aryl moiety. 1,3,7-octatriene is useful for the production of epoxy compounds and for the production therefrom of resin products.

3,444,259

PROCESS FOR PREPARING DRYING RESINS FROM STEAM-CRACKED NAPHTHA

Stephan Ilnyckyj, Islington, Ontario, and John M. MacDonald, Sarnia, Ontario, Canada, assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Mar. 31, 1966, Ser. No. 538,993
Int. Cl. C07c *3/20*; C08b *27/36*
U.S. Cl. 260—680 5 Claims

Liquid resins useful in forming coatings are prepared by polymerizing mixture of butadiene and C_5 stream-cracked petroleum stream with transition metal oxide catalyst.

3,444,260

METHOD FOR PREPARING BUTADIENE

Charles L. Thomas, Swarthmore, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed Sept. 5, 1967, Ser. No. 665,230
Int. Cl. C07c *5/18*
U.S. Cl. 260—680 6 Claims

Butadiene is prepared by reacting butene with air or oxygen in the presence of a platinum catalyst which is in the form of a metallic gauze at temperatures of from 750°–1,000° C. for contact times of less than 0.1 second.

3,444,261

PROCESS FOR THE PRODUCTION OF OLEFINS SUITABLE FOR CONVERSION TO DETERGENT ALKYLATES

Gianguido Caprioli and Serenella Pistoia, Mantova, Italy, and Emilio Pavan, deceased, late of Mantova, Italy, by Serenella Pistoia, legal representative, Mantova, Italy, assignors to Montecatini Edison, S.p.A., Milan, Italy

No Drawing. Filed Oct. 18, 1965, Ser. No. 497,513
Claims priority, application Italy, Oct. 20, 1964, 22,647/64
Int. Cl. C07c *3/30*; C07b *21/00*
U.S. Cl. 260—683 2 Claims

In a process for the production of olefins suitable for conversion to detergent alkylates via the cracking of heavy petroleum fractions, the fractional distillation of the fraction thus-cracked and the separation therefrom of a fraction rich in straight-chain olefins, the improvement which comprises the cracking of a heavy petroleum fraction boiling within the range of from about 300° C. to 600° C. and containing more than about 35% by weight aromatics and less than about 15% by weight straight-chain hydrocarbons, the separation therefrom of a second fraction rich in straight-chain olefins having from 8 to 15 carbon atoms and having a distillation range of from about 120° C. to 300° C., and the recovery of such straight-chain olefins having from 8 to 15 carbon atoms from said second fraction by treating the same with urea to selectively form adducts of urea with said olefins, separating these adducts and thence decomposing the same.

3,444,262

OLEFIN DISPROPORTIONATION WITH THORIA CONTAINING CATALYSTS

Louis F. Heckelsberg, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Jan. 3, 1966, Ser. No. 517,905
Int. Cl. C07c *3/62*
U.S. Cl. 260—683 3 Claims

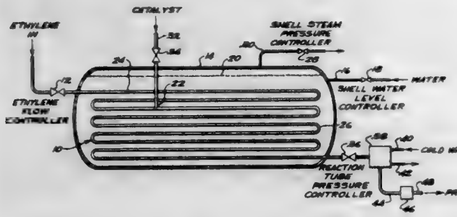
Olefins are disproportionated by contact with a catalyst comprising thoria promoted by an oxide, sulfide or hexacarbonyl of tungsten or molybdenum.

3,444,263

METHOD FOR CONVERTING ETHYLENE TO ALPHA OLEFINS IN THE PRESENCE OF AN ORGANIC SULFIDE

Herbert B. Fernald and William Gall, Glenshaw, and Harold E. Swift, Gibsonia, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

Filed Nov. 9, 1966, Ser. No. 593,157
Int. Cl. C07c 3/10
U.S. Cl. 260—683.15 2 Claims



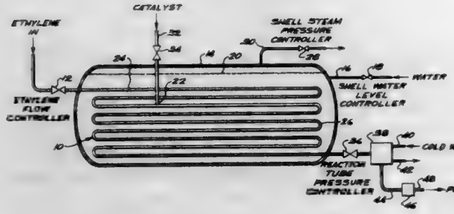
Solid polymer formation in the triethylaluminum catalyzed conversion of ethylene to liquid alpha olefin is reduced by the addition of various organic inhibitors. The presence of dodecyl sulfide inhibits polymer formation without any substantial adverse effect on the efficiency of the process.

3,444,264

METHOD FOR CONVERTING ETHYLENE TO ALPHA OLEFINS IN THE PRESENCE OF BENZOTHIAZOLE

Herbert B. Fernald and William Gall, Glenshaw, and Harold E. Swift, Gibsonia, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

Filed Nov. 9, 1966, Ser. No. 593,213
Int. Cl. C07c 3/18
U.S. Cl. 260—683.15 1 Claim



Solid polymer formation in the triethylaluminum catalyzed conversion of ethylene to liquid alpha olefins is reduced by the addition of various organic inhibitors. The addition of 2-mercaptobenzothiazole inhibits polymer formation without any substantial adverse effect on the efficiency of the process.

3,444,265

STABILIZATION OF OXYMETHYLENE COPOLYMERS WITH DIPHENYLAMINE ACETONE CONDENSATION PRODUCTS

Merrill N. O'Brien, Jr., New Providence, and Frank M. Berardinelli, South Orange, N.J., assignors to Celanese Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 30, 1966, Ser. No. 561,714
Int. Cl. C08g 51/60, 37/04
U.S. Cl. 260—857 5 Claims

Compositions which comprise an oxymethylene copolymer, a thermoplastic linear polycarbonamide and a solid fusible diphenylamine-acetone condensation product are disclosed, the latter two components serving to improve the long-term high temperature stability of the compositions. These compositions are useful for the production of various shaped articles, e.g., tubing, pipes and the like.

3,444,266

CROSS-LINKED POLYURETHANES FROM VINYL POLYMERS AND POLYESTER URETHANES CONTAINING AT LEAST 3% HEXANE-1,6-DIOL AND 2,2-DIMETHYL PROPANE-1,3-DIOL

Artur Reischl, Leverkusen, Wilhelm Göbel, Cologne-Flittard, and Karl-Ludwig Schmidt, Opladen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Mar. 11, 1964, Ser. No. 351,191
Claims priority, application Germany, Mar. 13, 1963, F 39,239
Int. Cl. C08f 29/20, 29/50
U.S. Cl. 260—859 4 Claims

Light stable homogeneous plastic compositions are prepared from polyvinyl chloride, polyvinylidene chloride, polyvinyl acetate and copolymers thereof mixed with a polyurethane comprised of an organic polyisocyanate and a polyester having a molecular weight of from about 400 to about 4000, about 5 to about 100% by weight of the polyester being a mixed polyester of a dicarboxylic acid and at least two polyhydric alcohols, each of the alcohols being present in the mixed polyester in an amount of at least 3 mol percent, the urethane comprising at least about 25% by weight of the admixture.

3,444,267

POLYBLENDS COMPRISING A VINYL CHLORIDE GRAFT COPOLYMER, A STYRENE-ACRYLONITRILE-BUTADIENE GRAFT COPOLYMER AND A VINYL POLYMER

Ludwig A. Beer, Agawam, Mass., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Aug. 23, 1965, Ser. No. 481,895
Int. Cl. C08f 29/24, 29/22
U.S. Cl. 260—876 9 Claims

There-component blends comprising vinyl halide polymer, vinyl halide graft copolymer, and styrene-acrylonitrile-butadiene graft copolymer. Such blends have improved impact resistance, weatherability and clarity.

3,444,268

POLYBLENDS COMPRISING A VINYL CHLORIDE GRAFT COPOLYMER, BUTADIENE-ACRYLONITRILE COPOLYMER, AND A VINYL POLYMER

Ludwig A. Beer, Agawam, Mass., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Aug. 23, 1965, Ser. No. 481,905
Int. Cl. C08f 37/18
U.S. Cl. 260—876 7 Claims

Three-component blends comprising vinyl chloride polymer, vinyl halide graft copolymer, and butadiene-acrylonitrile copolymer. Such blends have improved strength and clarity.

3,444,269

POLYBLENDS COMPRISING A VINYL CHLORIDE GRAFT COPOLYMER, A STYRENE-METHYL METHACRYLATE-BUTADIENE GRAFT COPOLYMER AND A VINYL POLYMER

Ludwig A. Beer, Agawam, Mass., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Aug. 23, 1965, Ser. No. 481,945
Int. Cl. C08f 37/18
U.S. Cl. 260—876 5 Claims

Three-component blends comprising a vinyl halide polymer, vinyl halide graft copolymer, and styrene-methyl methacrylate-butadiene graft copolymer. Such blends have improved impact strength and clarity.

3,444,270

PROCESS OF SUSPENSION POLYMERIZATION UTILIZING SYNERGISTIC SUSPENSION SYSTEM

Vincent A. Aliberti and Speros P. Nemphos, Springfield, Mass., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Dec. 28, 1965, Ser. No. 517,097
Int. Cl. C08f 1/11, 1/74
U.S. Cl. 260—878 19 Claims

An improved process for polymerizing monovinylidene aromatic hydrocarbon monomers is provided by using a synergistic combination of polymeric polycarboxylic acid and a polymeric alcohol. Emulsion loss and wall scale formation are highly desirably controlled while at the same time desirable particle size for the beads is obtained with little or no formation of fines.

3,444,271

PROCESS OF SUSPENSION POLYMERIZATION

Vincent A. Aliberti, Springfield, Mass., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Jan. 3, 1966, Ser. No. 517,974
Int. Cl. C08f 1/11, 15/04
U.S. Cl. 260—878 14 Claims

An ABS type polymer blend is produced in suspension by incorporating a small amount of a water soluble inorganic nitrite. The suspending agent is a polymeric polycarboxylic acid or a polymeric alcohol or a combination thereof.

3,444,272

ALKOXY DERIVATIVES OF PHOSPHINO-m-CARBORANES

Roy P. Alexander, Killingworth, and Hansjuergen A. Schroeder, Hamden, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed Feb. 25, 1966, Ser. No. 529,944
Int. Cl. C07f 9/50, 5/02; C09k 3/28
U.S. Cl. 260—922 4 Claims

Chlorine-terminated phosphino-m-carborane compositions are prepared by reacting an m-carborane compound with a chlorine-substituted phosphine, such as phenyldichloro phosphine, phosphorus trichloride, etc. The first formed intermediate products are then reacted with alcohols to form alkoxy derivatives of phosphino-m-carboranes which can be utilized as flame retardants in plastics, such as polyethylene, polypropylene, polyvinyl chloride, etc.

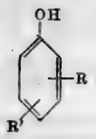
3,444,273

MOLECULAR COMPOUNDS OF O,O-DIMETHYL-CARBAMOYLMETHYL DITHIOPHOSPHATE AND AN ALKYL PHENOL

Noboru Muramoto, Toyonaka-shi, Keimei Fujimoto, Kyoto, and Yositosi Okuno, Nishinomiya-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., Osaka, Japan, a corporation of Japan

Filed June 13, 1966, Ser. No. 556,952
Int. Cl. C07f 9/16; A01n 9/36
U.S. Cl. 260—943 4 Claims

Molecular compounds of O,O-dimethyl N-methylcarbamoylmethyl dithiophosphate and an alkyl phenol having the formula



wherein R is a branched alkyl group having 3 or 4 carbon atoms and R^1 is methyl or methoxy group. These compounds are stable and are particularly useful as the active ingredient in insecticidal compositions.

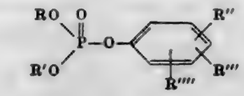
3,444,274

ASYMMETRICAL PARA-NITROPHENYL PHOSPHATES

Gerhard Schrader, Wuppertal-Cronenberg, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Aug. 24, 1965, Ser. No. 482,285
Claims priority, application Germany, Oct. 29, 1964, F 44,336
Int. Cl. C07f 9/12; A01n 9/36
U.S. Cl. 260—954 8 Claims

Asymmetric O,O-dialkyl-O-phenyl- and O-alkyl-O-cycloalkyl-O-phenyl-phosphoric acid esters having the general formula



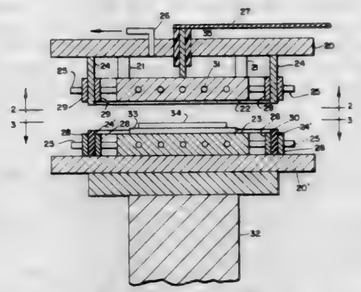
in which R is straight chain alkyl, R' is branched chain alkyl or cycloalkyl, R'' is halo, nitro, cyano, thiocyano, alkylmercapto, alkylsulfoxyl, or alkylsulfonyl, R''' is hydrogen, halo, alkyl, or alkoxy, and R'''' is hydrogen or halo, which possess pesticidal properties.

3,444,275

METHOD OF MOLDING UTILIZING DIELECTRIC HEATING

John A. Willett, Wellesley, Mass., assignor to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut

Filed Aug. 19, 1966, Ser. No. 573,638
Int. Cl. B29c 3/00
U.S. Cl. 264—26 2 Claims



Printing plates are molded from R.F. heated thermoplastics. Pressure in enclosure surrounding matrix and thermoplastic is reduced to at least 15 mm. of mercury before heating begins. Heating is stopped and press is closed to full molding pressure which is maintained until fluid-cooled platens chill the plate to its "memory point."

3,444,276

METHOD FOR PRODUCING CARBON-BONDED GRAPHITE STRUCTURES

Franciszek Olstowski, Freeport, and John D. Watson, Sr., Lake Jackson, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Apr. 4, 1966, Ser. No. 539,717
Int. Cl. B29b 3/00; C01b 31/04
U.S. Cl. 264—29 9 Claims

This invention relates to a process for producing resilient carbon-graphite structures by first admixing vermicular expanded graphite with an organic material capable of being decomposed by heat to form carbon. The admixture is then compressed into a cohered structure having a density of greater than about 0.25 gm./cc. and rapidly pyrolyzed to produce an expansion thereof at

least 10% along the axis of compression. Structures produced in this manner find utility as shock absorbers, gasketing, springs and the like and are particularly useful in high temperature or highly corrosive atmospheres.

3,444,277
METHOD FOR MOLDING FOAMED INORGANIC ARTICLES

William J. McMillan, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Jan. 20, 1967, Ser. No. 610,479
Int. Cl. B29d 27/00
U.S. Cl. 264—43 1 Claim

A method for molding foamed inorganic articles whereby voids may be eliminated comprising heating in a closed mold a mixture of discrete previously fully foamed inorganic siliceous granules which are at about their lowest density, and foamable inorganic particles whose foaming temperature is in the range of the sintering temperature of said previously fully foamed granules.

3,444,278
METHOD FOR PRODUCING A FILTER CARTRIDGE

Rudolfs A. Ozolins, St. Marys, Ohio, assignor to Leo B. Janis, Toledo, Ohio

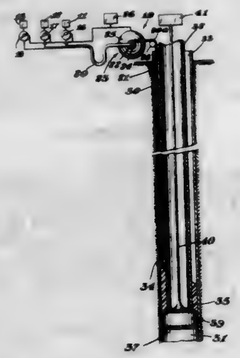
No Drawing. Continuation of application Ser. No. 316,157, Oct. 14, 1963. This application Dec. 22, 1966, Ser. No. 604,062
Int. Cl. B01d 39/20; B32b 1/08, 3/18
U.S. Cl. 264—42 2 Claims

A method for producing a filter cartridge having an inner previous mass of calcium oxide particles enclosed within an outer calcium carbonate shell. The method involves placing a calcium hydroxide slurry in a perforate mold, exposing the surface of the slurry to atmosphere until the calcium carbonate skin forms, while keeping at least the inner portions of the slurry wetted, separating the mold from the formed outer shell and wetted interior, and drying the wetted inner mass of calcium hydroxide particles.

3,444,279
METHOD AND APPARATUS FOR THE INSULATION OF CONDUIT

Raymond M. Dost, Sherwood Township, Branch County, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed May 9, 1966, Ser. No. 548,482
Int. Cl. B29h 7/20
U.S. Cl. 264—45 4 Claims

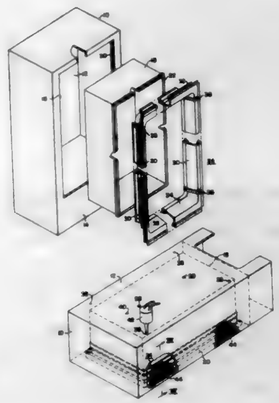


Method and apparatus are disclosed for combining foamable resins in a remote location such as in the space between concentric pipes. The resin dispenser and mixer are withdrawn as foam is formed.

3,444,280
METHOD OF APPLYING FOAM INSULATION TO A REFRIGERATOR CABINET

John W. Pulaski, Columbus, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Nov. 21, 1966, Ser. No. 595,978
Int. Cl. B32b 1/06; B29d 27/02
U.S. Cl. 264—45 4 Claims



1. In the method of applying foamed-in-place insulating material to the hollow wall space in a refrigerator cabinet, the improvement comprising:

first applying expanding insulating material to selected joint areas susceptible to leakage in said hollow wall space in quantities limited to that which permits a substantially free expansion rise of said material; and then

after said limited quantities have set sufficiently to form a barrier at said leakage areas, applying a sufficient quantity of additional expanding insulating material to substantially fill the remainder of said hollow wall space during expansion.

3. The method of making a refrigerator cabinet of the foamed-in-place insulated wall type, comprising:

assembling an outer shell, a nested inner liner, and jointed breaker strip means closing the gap between the front edges of said shell and liner;

applying, through selected location holes in the rear wall of said shell, limited amounts of spray foam insulating material directed to cover the hidden side of the breaker strip joints, and then

placing said cabinet in a supporting fixture and introducing sufficient additional expanding insulating material to substantially fill the remaining hollow wall space of the cabinet during expansion.

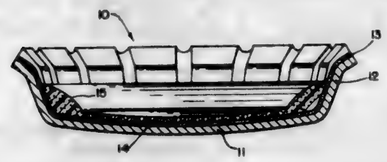
3,444,281
PROCESS OF PREPARING CELLULAR CLOSURE GASKETS

Gerald F. Cahill and James A. Avtges, Belmont, and Donald D. Hundt, Arlington, Mass., assignors to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut

Filed Apr. 21, 1966, Ser. No. 544,302
Int. Cl. B29d 31/00
U.S. Cl. 264—45 4 Claims

Transparent cellular gaskets are formed in container closure elements by depositing into a container closure a plastisol having a viscosity between about 250 and 2000 centipoises and containing a blowing agent, rotating the closure containing the deposit at a speed ranging between about 1500 and 5000 r.p.m. whereby a thin film is formed

over the panel portion of the closure integrated with a thick annular ring and fluxing the plastisol in the closure.

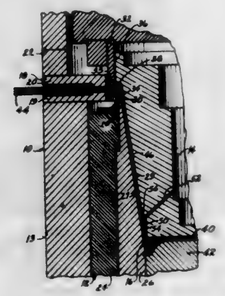


The fluxed gasket has a transparent panel portion and an overall void volume not exceeding 45%.

3,444,282
METHOD FOR FORMING CRIMPED RIM ON A FOAM PLASTIC OBJECT

Francis L. Burkett, Breckenridge, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Mar. 28, 1966, Ser. No. 537,738
Int. Cl. B29d 27/00
U.S. Cl. 264—48 3 Claims



1. A method for forming a crimped rim on an object formed from a sheet of foam plastic comprising the steps of heating the sheet of foam plastic, forming the major portion of the desired object; folding downwardly the portion of said sheet extending about the periphery of the major portion of the object; shearing said sheet about the periphery of said major portion; and engaging and forcibly urging upwardly the lower exposed edge of the folded portion while confining the folded portion to crimp the folded portion against the side of said major portion of the object.

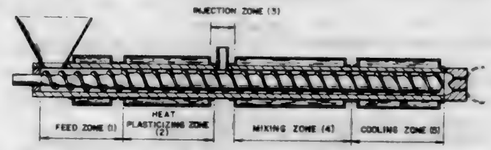
3. The method of claim 1 further including the steps of selectively super-expanding predetermined areas of said major portion of the object about its periphery adjacent its base by applying a vacuum to cavities defining said areas, to thereby provide indents in said major portions about its interior periphery.

3,444,283
METHOD FOR DIRECT INJECTION EXTRUSION OF POLYSTYRENE FOAM

Frank A. Carlson, Jr., Pittsford, N.Y., assignor to Mobil Oil Corporation, a corporation of New York

Filed Nov. 8, 1965, Ser. No. 506,836
Int. Cl. B29d 7/02; B29h 7/20
U.S. Cl. 264—53 8 Claims

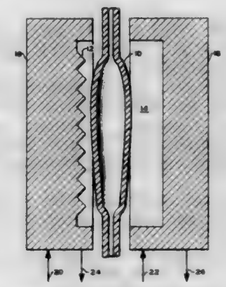
A method for the direct injection extrusion of polystyrene foam comprising forming a mixture of a polystyrene resin with a salt capable of liberating carbon dioxide and an organic acid mixture comprising an organic acid hydrate and an anhydrous acid; melting such an admixture in a screw-type extrusion apparatus and thereafter injecting and admixing with said molten mixture a liquid blowing agent into the molten mixture; and subsequently cooling the molten mixture and extruding the mixture as a polystyrene foam.



3,444,284
UNIFORM COOLING OF BLOW MOLDED ARTICLES

John M. Moore and James O. Motsenbocker, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Apr. 7, 1966, Ser. No. 540,992
Int. Cl. B29c 17/04, 1/00
U.S. Cl. 264—94 3 Claims

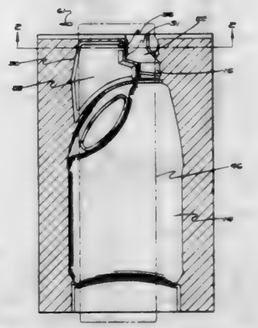


In a blow molding operation wherein a portion of the resulting article is to be cut out, and wherein said portion to be cut out would otherwise be thicker, as a result of being stretched less than other portions of the parison, the wall of the mold forming that portion of the parison which is to be cut out and discarded is corrugated so as to increase the surface area and therefore provide for thinning of the area to be discarded so that it will cool at the same rate as the rest of the article.

3,444,285
MANUFACTURE OF BLOW MOLDED PLASTIC ARTICLES

Robert B. Mason, Mystic, Conn., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Filed Jan. 12, 1966, Ser. No. 520,160
Int. Cl. B29c 17/04
U.S. Cl. 264—98 5 Claims



Flash and article forming portions of a plastic parison

are simultaneously expanded in a blow molding operation against cooled walls of the mold.

3,444,286

REVERSE OSMOSIS MEMBRANE COMPOSITION AND MANUFACTURE OF THE MEMBRANE

William M. King, Walnut, and Paul A. Cantor, Covina, Calif., assignors to Aerojet-General Corporation, El Monte, Calif., a corporation of Ohio

No Drawing. Filed Feb. 21, 1966, Ser. No. 538,498
Int. Cl. B29d 27/00
U.S. Cl. 264—49 17 Claims

This patent describes a casting solution for the preparation of a reverse osmosis cellulose ester membrane, said solution comprising a cellulose ester, an organic polar solvent for the cellulose ester, a mineral acid swelling agent, and a solvating agent, said mineral acid swelling agent being present on an anhydrous basis in an amount within the range of about 0.1 to 6 parts by weight for each 10 parts of the cellulose ester, and to the method of preparing said membrane by casting said solution in the form of a thin film.

3,444,287

PROCESS FOR PREPARING PELLETS FROM SODIUM TRICHLORACETATE WHICH DO NOT AGGLOMERATE

Hans Kolb, Gersthofen, near Augsburg, Rudolf Hartmann, Augsburg, and Harald Buckmiller, Gersthofen, near Augsburg, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Original application May 9, 1963, Ser. No. 280,496. Divided and this application July 27, 1966, Ser. No. 576,166
Claims priority, application Germany, May 19, 1962, F 36,851
Int. Cl. B29j 1/00
U.S. Cl. 264—109 4 Claims

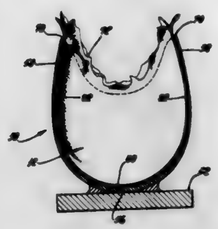
Pulverulent sodium trichloroacetate containing about 1 to 3% by weight, preferably 1.5 to 2.5% by weight, of water is molded under high pressure into pellets which are thereafter cooled in a current of air to a temperature below 30° C. to produce solid pellets having a small surface.

3,444,288

METHOD FOR PRODUCTION OF A PROTECTIVE HELMET

Peter Mead, Canoga Park, Calif., assignor to Daytona Sports Company, Reseda, Calif., a corporation of California

Filed Aug. 6, 1965, Ser. No. 477,711
Int. Cl. B28b 7/12; B29c 7/00
U.S. Cl. 264—161 6 Claims



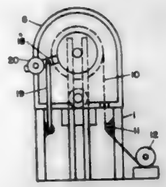
A method for producing a helmet shell within a one piece mold having a pair of opposed side portions encompassing an area of greater than 180° of the mold configuration includes (1) placing shell materials within the mold to form the shell, (2) curing the materials, (3) separating the shell from the mold by flexing the mold portions and the shell portions as a unit to cause slight separation between the side portions of the mold and the ear portions of the shell, and (4) forcing the shell out of the mold by injecting a substance, such as air, under pressure into the slight separation.

3,444,289

METHOD AND HEAT-TREATING MACHINE FOR MATERIAL IN STRIP FORM

Oscar Emanuel Hedberg, Leif Erik Roland Soderberg, and Johan Eric Hayden Westberg, Lidingo, Sweden, assignors to AGA Aktiebolag, Lidingo, Sweden, a corporation of Sweden

Filed Mar. 23, 1966, Ser. No. 536,892
Claims priority, application Sweden, Apr. 29, 1965, 5,637/65
Int. Cl. B29c 25/00
U.S. Cl. 264—347 10 Claims



In a method of vulcanizing material in strip form, the material is wound onto a main drum together with a separation strip, the coil or roll being terminated with a number of free outer layers of separation strip without any interposed material. The material is heated to the predetermined vulcanizing temperature, and the drum is rotated by pulling a number of the free outer layers of the separation strip off the main drum under tension while the material is in this heated condition, while simultaneously applying pressure to the material on the drum by at least one pressure roller bearing against the windings of the drum. Preferably a braking force is applied to the main drum to resist the rotation thereof and place the unwinding separation strip under additional tension. The force created by tensioning the unwinding strip to rotate the drum tends to be uniform during the entire vulcanizing period, and the movement of the main drum is steady. Preferably the unwinding is effected in a vulcanizing machine having a separate roll for drawing the separating strip from the main drum.

3,444,290

DOSAGE UNIT FORMS FOR THE ADMINISTRATION OF MEDICAMENTS

Kee-Neng Wai, London, England, assignor to Biorex Laboratories Limited

Filed Feb. 15, 1966, Ser. No. 527,683
Claims priority, application Great Britain, Feb. 15, 1965, 6,405/65
Int. Cl. A61k 9/04
U.S. Cl. 424—4 7 Claims

A dosage unit which can be swallowed and which is characterized in that it swells without breaking, when in contact with gastric juices, to such a size as to be ruptured in the region of the pyloric sphincter, when swallowed. Also provided is the method of bringing an effective amount of medicament into contact with the duodenal mucosa which comprises orally administering the dosage unit to a patient.

3,444,291

METHOD OF FILLING AND CAMOUFLAGING SKIN CAVITIES

Lorna Bivans, 25 Central Park W., New York, N.Y. 10023

No Drawing. Continuation-in-part of application Ser. No. 454,995, May 11, 1965. This application July 18, 1967, Ser. No. 654,088
Int. Cl. A61f; A61k 7/02
U.S. Cl. 424—63 2 Claims

A filler composition for filling cavities in skin is made by uniformly blending about 75 to 65 parts by weight of microcrystalline wax and about 25 to 35 parts by weight of mineral oil. A sufficient amount of coloring matter is preferably also included to color the composition to substantially the same color as that of the user's skin.

3,444,292

BUFFERED ANTIPERSPIRANT COMPOSITIONS CONTAINING DIOXALUMOLANE AND DIOXALUMINANE COMPOUNDS

Stewart M. Beekman, Signal Mountain, and James M. Holbert, Lookout Mountain, Tenn., and Horst W. Schmank, Ringgold, Ga., assignors to The Chattanooga Medicine Company, Chattanooga, Tenn., a corporation of Tennessee

No Drawing. Filed May 5, 1966, Ser. No. 547,729
Int. Cl. A61k 7/00
U.S. Cl. 424—68 9 Claims

Antiperspirant compositions comprising a mixture of a chloro-dioxaluminane with a buffering agent consisting of an aluminum nitrilo compound which controls the acidity of the resulting composition.

3,444,293

MULTIFUNCTIONAL LARYNGOTRACHEITIS VACCINE AND METHOD OF MAKING THE SAME

Charles B. Hudson, New Brunswick, N.J., assignor to Vineland Poultry Laboratories, a partnership

No Drawing. Filed Aug. 24, 1964, Ser. No. 391,741
Int. Cl. A61k 23/00; C12k 7/00
U.S. Cl. 424—89 11 Claims

1. A process for preparing an attenuated laryngotracheitis virus vaccine which can be safely administered ocularly, intranasally, intratracheally and in drinking water for immunizing fowl against infectious laryngotracheitis comprising the steps of introducing a virulent, infectious laryngotracheitis virus into a fertile avian egg, incubating the egg at growth sustaining temperatures until a harvestable quantity of laryngotracheitis virus has grown therein, harvesting said laryngotracheitis virus by removing an infected portion of the embryonic content of the egg, reintroducing the virus so harvested into a second fertile avian egg and repeating such culture passage of the virus for a sufficient number of passages to produce an attenuated antigenically-effective laryngotracheitis virus which can be safely administered ocularly, intranasally, intratracheally and in drinking water.

3,444,294

AIDING THE REGRESSION OF ACUTE LEUKEMIA WITH 1 - BETA - D - ARABINOFURANOSYLCYTOSINE

James H. Hunter, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Application Sept. 1, 1965, Ser. No. 484,473, which is a continuation-in-part of applications Ser. No. 217,543, Aug. 17, 1962; Ser. No. 83,899, Jan. 23, 1961; Ser. No. 24,890, Apr. 27, 1960, now Patent No. 3,116,282, and Ser. No. 802,650, Mar. 30, 1959. Divided and this application Apr. 3, 1967, Ser. No. 627,645
Int. Cl. A61k 27/00
U.S. Cl. 424—180 2 Claims

Processes of aiding regression and palliation of acute leukemia in human hosts comprising systemic administration to the hosts of an effective amount of 1-β-D-arabinofuranosylcytosine or a nontoxic acid addition salt thereof. Preferably the active ingredient is administered in a sufficient amount to provide dosages over the range from about 2 mg. to about 50 mg. per kilogram of body weight of the host.

3,444,295

ANABOLIC COMPOSITION COMPRISING 1,2α-METHYLENE-19-NOR TESTOSTERONE

Otto Engelfried, Hans-Gunter Lehmann, Friedmund Neumann, and Rudolf Wiechert, Berlin, Germany, assignors to Schering AG, Berlin, Germany

No Drawing. Filed Dec. 29, 1966, Ser. No. 605,562
Int. Cl. A61k 17/00; C07c 171/06
U.S. Cl. 424—243 9 Claims

Novel 1,2α-methylene-19-nor-testosterone derivatives having anabolic activity and a process for the production thereof by dehydrogenation or dehydrohalogenation of the corresponding 1,2α-methylene-3-ketosteroids which are saturated in the A-ring.

3,444,296

METHOD OF CONTROLLING REPRODUCTIVE CYCLE WITH 6α - METHYL - 17α HYDROXY-PROGESTERONE 17-ACETATE

George B. Spero, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Continuation-in-part of applications Ser. No. 685,391, Sept. 23, 1957, and Ser. No. 832,909, Aug. 11, 1959. This application June 28, 1960, Ser. No. 39,333
Int. Cl. A61k 17/06
U.S. Cl. 424—243 4 Claims

1. The process for the synchronization of estrus in ovulating animals which comprises the oral administration to said animals of an effective amount of a pharmaceutical preparation comprising from about 0.0005 to about 5% by weight of 6α-methyl-17α-hydroxyprogesterone 17-acetate and an animal feed carrier.

3,444,297

13β-n-PROPYL-17α-ETHYNYL-$\Delta^{4,9}$-GONADIEN-17β-OL-3-ONE, ITS PREPARATION AND USE

Gerard Nomine, Noisy-le-Sec, Robert Bucourt, Clichy-Sous-Bois, Andre Pierdet, Noisy-le-Sec, and Candido Snozzi, Maison-Alfort, France, assignors to Roussel-Uclaf, S.A., Paris, France, a corporation of France

No Drawing. Filed June 21, 1962, Ser. No. 204,057
Claims priority, application France, Oct. 12, 1961, 875,782; July 6, 1961, 867,160
Int. Cl. A61k 17/08; C07c 169/22
U.S. Cl. 424—243 13 Claims

1. 13β - n - propyl - 17α - ethynyl - $\Delta^{4,9}$-gonadien-17β-ol-3-one.

12. Therapeutic compositions comprising 13β-n-propyl-17α-ethynyl-$\Delta^{4,9}$-gonadien-17β-ol-3-one and a nontoxic excipient.

3,444,298

METHOD FOR PREVENTING RHINOVIRUS INFECTIONS WITH 3-(3-HYDROXY-3-METHYLBUTYLAMINO) - 5 - METHYL - 5H - AS - TRIAZINO[5,6-b] INDOLE

Charles G. Kormendy, Elkins Park, Pa., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed July 20, 1967, Ser. No. 654,691
Int. Cl. A61k 27/00
U.S. Cl. 424—249 1 Claim

Side-chain methylated 3-hydroxypropylaminotriazinoindoles are effective in inhibiting the growth of rhinovirus. The preferred compound is 3-(3-hydroxy-3-methylbutylamino)-5-methyl-5H-as-triazino[5,6-b]indole.

3,444,299
METHODS FOR THE CONTROL AND PREVENTION OF HELMINTHS WITH PHENYLBENZOTHIAZOLIUM COMPOUNDS

Irwin Boyden Wood, Hopewell, George Henri Rohrbacher, Jr., Princeton Junction, and Ronald Edward Bambury, Trenton, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Feb. 7, 1964, Ser. No. 343,216

Int. Cl. A61k *27/00*

U.S. Cl. 424—270 **8 Claims**

This invention is a method of administering known compounds for a new use. The compounds are of the class substituted phenylbenzothiazolium compounds. These compounds are useful in the control and treatment of helminthiases in warm-blooded animals.

3,444,300
N-POLYHALOALKYLTHIO COMPOUNDS AS FUNGICIDAL AGENTS

Gustave K. Kohn, Berkeley, Calif., assignor to Chevron Research Company, a corporation of Delaware

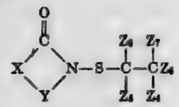
No Drawing. Original application May 5, 1964, Ser. No. 365,146, now Patent No. 3,178,447, dated Apr. 13, 1965. Divided and this application Dec. 1, 1964, Ser. No. 415,193

The portion of the term of the patent subsequent to Apr. 13, 1982, has been disclaimed

Int. Cl. A01n *9/12*

U.S. Cl. 424—273 **20 Claims**

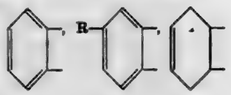
14. A process for killing fungi comprising subjecting said fungi to a fungicidally effective amount of a compound having the formula



where Y is



where X is selected from the group consisting of $-C_2H_4-$, $-C_2H_6-$, $-CH=CH-$,



and



3 to 4 members of Z_4, Z_5, Z_6, Z_7 and Z_8 are halogen of atomic weight 35 to 80 and the remaining members of Z_4, Z_5, Z_6, Z_7 and Z_8 are hydrogen; and R is nitro.

3,444,301
PROCESS FOR DESTROYING MICRO-ORGANISMS IN AGRICULTURE

Carl O. Tant, Edward O. Bennett, and Hugh T. Freebairn, Houston, Tex., assignors to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Apr. 13, 1965, Ser. No. 447,877

Int. Cl. A01m *9/12;* **A23b** *7/12*

U.S. Cl. 424—303 **7 Claims**

Process for destroying micro-organisms found in agriculture, particularly bananas, by contacting them with a biocidal amount of an organic compound having a nitrobutyl sulfate nucleus.

3,444,302
METHOD OF PREVENTING INFLUENZA VIRAL INFECTIONS

Charles G. Kormendy, Secane, Pa., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Aug. 16, 1966, Ser. No. 572,674

Int. Cl. A61k *27/00;* **C07c** *87/40*

U.S. Cl. 424—325 **13 Claims**

2 - aminobicyclo[2.2.1]heptane, bicyclo[2.2.1]heptane-2 - methylamine, and α-methylbicyclo[2.2.1]heptane - 2-methylamine or their salts are formulated and administered to animals to combat influenza infections.

3,444,303
DODECACHLOROOCTAHYDRO - 1,3,4 METHENO-2H CYCLOBUTA (cd) PENTALENE AS A RODENTICIDE

Merrill M. Darley, Basking Ridge, N.J., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Feb. 16, 1965, Ser. No. 433,208

Int. Cl. A01n *17/14, 9/30*

U.S. Cl. 424—352 **1 Claim**

The following invention relates to a method for exterminating rodents using dodecachlorooctahydro-1,3,4-metheno-2H cyclobuta (cd) pentalene.

ELECTRICAL

3,444,304
MAKING BASIC OXYGEN STEEL IN AN ELECTRIC ARC FURNACE SYSTEM

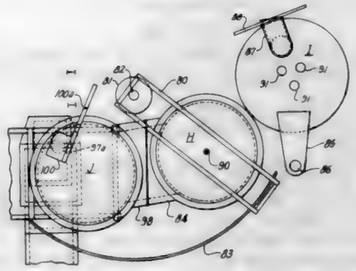
Levi S. Longenecker, 61 Mayfair Drive, Pittsburgh, Pa. 15228

Filed Aug. 11, 1967, Ser. No. 660,095

Int. Cl. H05b *7/18*

U.S. Cl. 13—9 **20 Claims**

A method and apparatus are provided for utilizing hot exhaust gases that are continuously taken off from a single metal melting and refining furnace and that are used for preheating the scrap portion of the furnace charge. The furnace has oxygen-blow and electrode-equipped interchangeable roofs that are vented for removing the hot gases and that are interchangeably used for the complete operation. Cold scrap is preheated by an upward flow of hot furnace gases through a silo-like container from which the hotter portions of the scrap are removed for charging into the furnace. Hot scrap charging apparatus is provided having compartments about a central area for introducing the scrap in the form of a doughnut-shaped configuration



on the hearth of the furnace and as assured by a centrally-positioned hole maker carried by the scrap box.

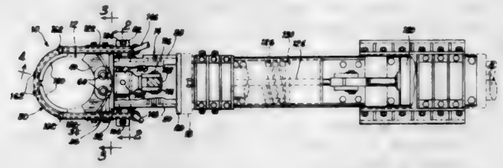
3,444,305
ELECTRODE HEAD FOR ELECTRIC FURNACE ELECTRODES

Alfred H. Turner, Pinson, Ala. (P.O. Box 1148, Birmingham, Ala. 35201)

Continuation-in-part of application Ser. No. 584,216, Oct. 4, 1966. This application June 13, 1968, Ser. No. 748,144

Int. Cl. H05b *7/10*

U.S. Cl. 13—16 **10 Claims**



An electrode head for use with a cylindrical electric furnace electrode comprising a body having a cylindrically curved front member, a cylindrically curved contact shoe removably mounted in a stationary position on the body against the curved front member, said contact shoe having passages therein for carrying cooling water, a generally U-shaped clamping band removably mounted on the body for clamping the electrode against the contact shoe, said band having passages therein for carrying cooling water, a bar for applying a clamping force to the ends of said band, and a plurality of curved lining plates removably mounted on the inside of said band to engage the electrode and protect the band against wear and electrical arcing.

ERRATUM

For Class 84—1.01 see:
Patent No. 3,443,463

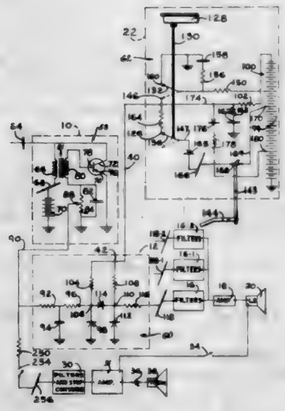
3,444,306
ELECTRONIC MUSICAL INSTRUMENT PRODUCING PIANO EFFECTS

Richard H. Peterson, 10108 Harnew Road E., Oaklawn, Ill. 60453

Continuation-in-part of application Ser. No. 155,612 Nov. 29, 1961. This application Apr. 30, 1965, Ser. No. 458,806

Int. Cl. G10h *3/00, 1/02, 3/06*

U.S. Cl. 84—1.13 **14 Claims**



Semi-conductor gating circuits are used to selectively control, as a function of time, the delivery of electrically generated signals to a reproducing system, in a manner to simulate the envelope and harmonic charteristics of a pianoforte.

3,444,307
COOLING SYSTEM FOR SUPERCONDUCTIVE OR CRYOGENIC STRUCTURES

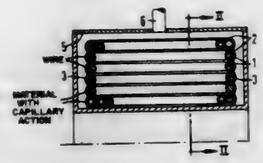
Wilhelm Kafka, Tennenlohe, Germany, assignor to Siemens Aktiengesellschaft, Berlin, Germany, a corporation of Germany

Filed Mar. 21, 1967, Ser. No. 624,761

Claims priority, application Germany, Mar. 23, 1966, 102,682

Int. Cl. H01b *7/34, 9/06*

U.S. Cl. 124—15 **12 Claims**



A system for cooling superconductive or cryogenic structures. The system includes an enclosure means for holding a liquid refrigerant, and a wick means extends into the enclosure means to engage a liquid refrigerant therein. This wick means also extends into engagement with an electrically conductive means for conveying the liquid refrigerant thereto for cooling the same, and a passage means is situated adjacent the wick means to provide an escape path for liquid refrigerant which is at least partly vaporized. The wick means has a mechanical strength great enough to enable it to simultaneously act as a spacer structure, and the wick means may be made of a bundle of cotton or of a bundle of twisted or braided fibers of metal or glass.

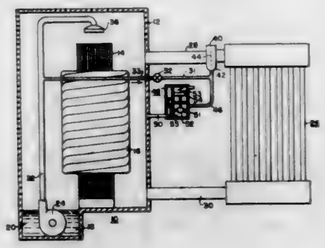
3,444,308
VAPOR COOLED ELECTRICAL TRANSFORMER

Paul Narbut, Sharpsville, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed July 19, 1967, Ser. No. 654,543

Int. Cl. H01b *7/34*

U.S. Cl. 174—15 **7 Claims**



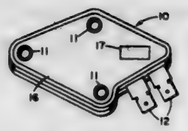
Transformer apparatus comprising a core and coil assembly in a casing and a cooling device connected to the casing. The transformer utilizes a fluid dielectric atmosphere for insulation and cooling. The dielectric atmosphere includes a mixture of condensable vapor and non-condensable vapor. A positive acting liquid operated gate valve is provided for regulating the flow of non-condensable vapor through the casing and cooling device in response to the temperature and pressure, or the temperature or pressure inside the casing.

3,444,309

UNITIZED ASSEMBLY PLASTIC ENCAPSULATION PROVIDING OUTWARDLY FACING NONPLASTIC SURFACES

Thomas A. Dunn, Mesa, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed Dec. 26, 1967, Ser. No. 693,611
Int. Cl. H05k *5/02*
U.S. Cl. 174—52 **12 Claims**



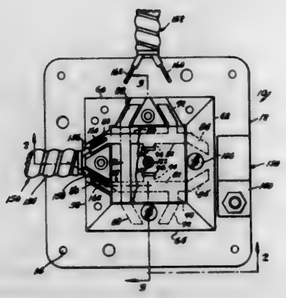
An electrical assembly having a plurality of upstanding tubular members with predetermined peripheral deformations. During molding operations, the tubular members are further deformed by pressures between two facing die parts such that tolerance of the thickness of the final assembly is less than the sum of the tolerances of the individual parts. The tubular members have radially extending surfaces forming electrical contacts along one surface of the assembly. Another metal plate attached to the tubular members forms substantially the opposite surface for providing a good heat sink connection. The tubular members are spaced peripherally of the metal plate such that mold pressures are evenly applied along the plate for preventing plastic encapsulating material from seeping over the plate. Portions of the plate may extend outwardly from the tubular members with the provision of a rigidizing and apertured deformation in the base plate for preventing flexure of the plate in a mold. The apertures in the rigidizing member permit plastic flow for solidly locking the plastic encapsulating material to the base plate. Plastic encapsulating material is provided inside the tubular members by runners in other parts of the electronic assembly.

3,444,310

ELECTRICAL JUNCTION BOX ASSEMBLY

Scott O. Stewart, 4923 Powder Mill Road, Beltsville, Md. 20705

Filed Feb. 7, 1968, Ser. No. 703,726
Int. Cl. H01r *9/02, 13/46*
U.S. Cl. 174—59 **8 Claims**



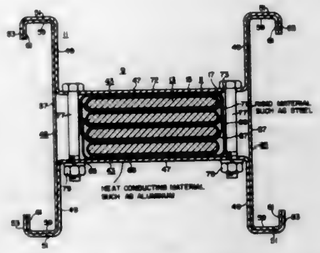
An electrical conductor terminal assembly for connecting a plurality of electrical circuits and wherein the assembly includes a pair of multi-ended plates electrically insulated from one another, the insulated plates being disposed on one side of an electrically non-conducting base with the ends of the plates extending transversely across the peripheral marginal edge thereof; the ends of one plate being adjacent to but spaced and electrically insulated from the ends of the other plate to form pairs of contiguous ends to receive the terminal ends of wires forming circuits to be connected with one another; an electrically non-conducting block extending across the electrically insulated plates to the exclusion of the ends thereof and means connecting the block to the base to clamp the electrically insulated plates therebetween; an electrically non-conducting clamping jaw for each pair of contiguous ends of said plates and extending thereacross; and means connecting said clamping jaws to said base to clamp said terminal ends of the wires against their associated plate ends.

3,444,311

BUS DUCT

Charles L. Weimer, Beaver Falls, and Bill M. Shannon, Rochester, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 24, 1966, Ser. No. 560,129
Int. Cl. H01b *7/34;* **H02g** *3/28*
U.S. Cl. 174—68 **10 Claims**



1. A section of bus duct comprising a housing, a set of a plurality of generally flat bus bars supported in said housing, said section comprising a main-body part intermediate the ends thereof,

said bus bars of said set at said main-body part of said section being positioned in a stacked mutually flatwise face-to-face relationship,

said housing at said main-body part of said section comprising a main-body part housing construction, said main-body part housing construction comprising a first pair of oppositely disposed housing members and a second pair of oppositely disposed housing members,

each housing member of said first pair of housing members comprising a generally U-shaped member formed with the opposite main leg parts thereof bent-over to extend outward from the general U-shape construction, securing means drawing said first pair of housing members toward each other with the back faces of the bight parts of said first pair of housing members being drawn toward the flat outer faces of the outer bus bars of said set of stacked bus bars to mount said set of stacked bus bars in a compact sandwiched relationship between said first pair of housing members, and said second pair of housing members being connected to said first pair of housing members.

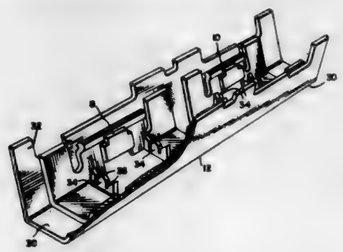
3,444,312

ELECTRICAL CONNECTIONS FOR PAIRS OF CONDUCTORS

William Roderick Over, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.

Filed Feb. 1, 1967, Ser. No. 613,162
Int. Cl. H02g *15/08, 15/24*
U.S. Cl. 174—88 **3 Claims**

Corresponding wires of two pairs of wires are connected to each other by single connectors having two electrically separate crimpable ferrules. A wire of each pair extends axially into one ferrule. The remaining wire of each pair extends externally past the connector, is



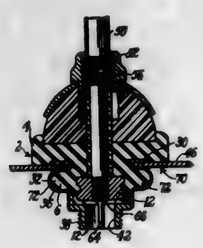
reversely bent, and extends into the other ferrule. Connections are made by lacing all four wires in crimping tool which simultaneously trims wire ends and crimps the two ferrules onto the wires.

3,444,313

EXPANDABLE FASTENER ANTENNA MOUNTS

William C. Goodchild, Jr., Beverly, Mass., and John T. Chesluk, Cherry Hill, N.J., assignors to the United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey

Filed Dec. 28, 1966, Ser. No. 605,433
Int. Cl. H01b *17/26, 17/58*
U.S. Cl. 174—153 **7 Claims**



An automobile antenna mount including a rubbery member which is expanded after insertion into a hole in the automobile body. The mount retains the antenna and joins it to a lead from the radio and grounds the lead shielding to the metal surface of the automobile.

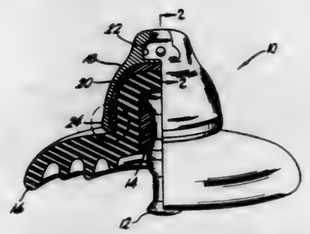
3,444,314

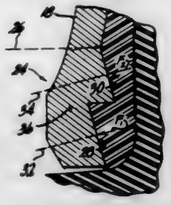
SUSPENSION INSULATOR HAVING A CAP WITH INTERNAL LOAD TRANSMITTING SURFACES

Thomas Oliver Van Tuyl, 4764 Washtenaw, Apt. B-2, Ann Arbor, Mich. 48104

Filed Mar. 16, 1967, Ser. No. 623,629
Int. Cl. H01b *17/22, 17/40*
U.S. Cl. 174—182 **8 Claims**

An electrical suspension insulator which has a cap and pin formed of aluminum. The cap and pin are electrically separated by a porcelain insulator member. The cap has a pair of axially spaced inclined steps or surfaces at its lower and inner end for aiding in supporting the load applied thereto through the body of the porcelain insulator member which is cemented to the inner surface of the cap. The pair of inclined surfaces are located so as to resist outward spreading action of the terminal edge portion of the cap when vertical loads are applied to the pin of the insulator.



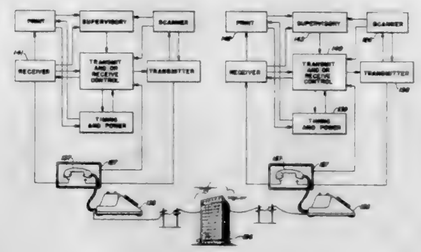


3,444,315

FACSIMILE ALARM CIRCUIT

George T. Shimabukuro, Monterey Park, and Waldemar Saeger, La Canada, Calif., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Oct. 1, 1965, Ser. No. 492,155
Int. Cl. H04n *7/02;* **H04l** *7/00*
U.S. Cl. 178—6 **3 Claims**



In a facsimile system including transmitter and receiver stations, alarm means for detecting a predetermined malfunction at said transmitter or receiver, respectively and also including means for signaling the detected malfunction to the other station.

3,444,316

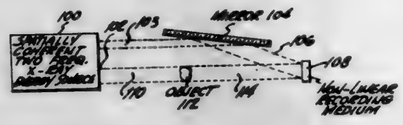
BEAT FREQUENCY HOLOGRAMS

Hendrik J. Gerritsen, Princeton Junction, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Feb. 3, 1966, Ser. No. 524,788
Int. Cl. H04n *9/54;* **G02b** *27/00*
U.S. Cl. 178—6.5 **10 Claims**

The recording on a non-linear medium of a hologram which is a function of the difference frequency between

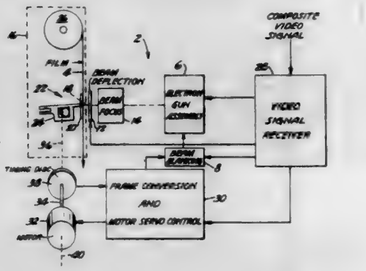
two narrowly separated frequencies with which the medium is illuminated. By this means an X-ray hologram at a difference frequency in the light spectrum may be formed from two X-ray frequency input signals. Similarly a difference frequency hologram in the infrared or far infrared, which may be transmitted by television or derived on a motion picture, may be formed from two light frequency input signals.



3,444,317
ELECTRON BEAM RECORDER WITH FRAME RATE CONVERSION

Richard F. Dubbe, Richfield, and Edward W. Reed, Jr., St. Paul, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed Nov. 3, 1965, Ser. No. 506,185
Int. Cl. H04n *5/84*
U.S. Cl. 178—6.7 **14 Claims**



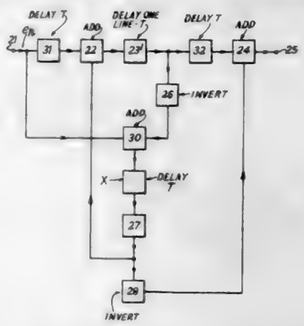
Electron beam recording apparatus adapted for use as a frame rate conversion system for recording video information on an electron sensitive media is shown wherein an electron beam is modulated by the video information at a number of scan frames per unit time and scanned on a media which is intermittently advanced and scanned by the electron beam at a number of media frames per unit time which is less than the number of scan frames per unit time and the electron beam is blanked by a blanking means so as to record on the media a predetermined number of scan frames per unit time which equal the number of media frames per unit time.

3,444,318
APPARATUS FOR PROCESSING TELEVISION SIGNALS

George Dewar Monteath, Tadworth, England, assignor to The Marconi Company Limited and Standard Telephones & Cables Limited, London, England

Filed Apr. 20, 1966, Ser. No. 543,868
Claims priority, application Great Britain, May 3, 1965, 18,576/65
Int. Cl. H04n *5/38*
U.S. Cl. 178—7.2 **5 Claims**

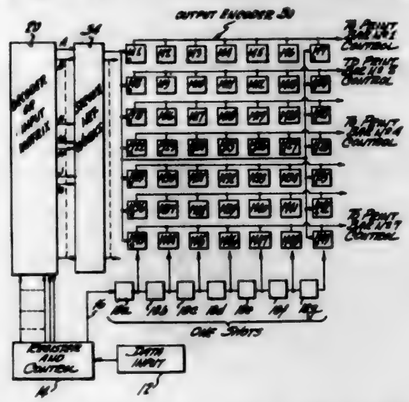
Apparatus is disclosed for effecting vertical aperture correction in television signals using a single delay device and a number of signal combining devices which combine the signals in such a manner as to produce at one point a correcting signal which is zero in plain areas of a picture. The degree of correction can be controlled by means of a signal attenuator located at the said point.



3,444,319
CHARACTER GENERATOR

Maurice Artzt, Princeton, and Milton M. Sowiak, Mercerville, N.J., assignors to Radio Corporation of America, a corporation of Delaware

Filed July 26, 1966, Ser. No. 568,003
Int. Cl. H04l *15/24, 15/34*
U.S. Cl. 178—30 **6 Claims**



A character generator for a matrix printer that prints character patterns by selecting various combinations of a plurality of character elements from a character forming matrix. Selected character elements of the matrix are grouped together to form a plurality of stroke patterns with certain elements being common to various stroke patterns and the stroke patterns are grouped together to form the character patterns, with certain stroke patterns, with certain stroke patterns being common to various character patterns.

3,444,320
TIME DIVISION FREQUENCY SHIFT TRANSMISSION SYSTEM

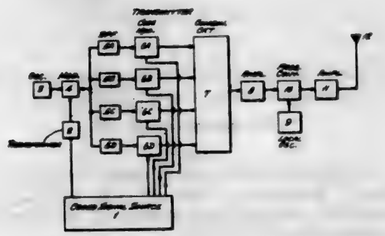
Masahisa Miyagi, Tokyo, Japan, assignor to Nippon Electric Company Limited, Tokyo, Japan, a corporation of Japan

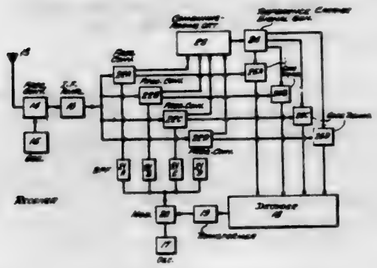
Filed Mar. 19, 1965, Ser. No. 441,224
Claims priority, application Japan, Mar. 21, 1964, 39/151,541
Int. Cl. H04l *5/00*
U.S. Cl. 178—50 **1 Claim**

A synchronization detection system for a time-division frequency-shift keying code transmission system in which codes are transmitted by keying the frequency of a carrier wave to two or more frequencies in time-division fashion.

The transmitter includes means for amplitude or phase modulating a first carrier by a transmitter pulse train and also means for selecting a plurality of carrier waves from said first carrier. The transmitter also includes means for keying the selected carrier waves in time-division fashion to code-modulate each selected carrier wave in synchronism with the frequency-shift keying.

The receiver includes modulating means utilizing a receiver pulse train in synchronism with the tarnsmitter pulse train, to amplitude or phase modulate a second carrier produced independently of said first carrier. The receiver further includes means to select a plurality of





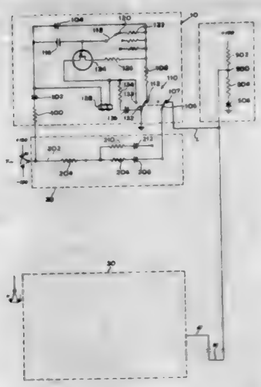
carrier waves corresponding to those selected in the transmitter, from the second carrier. Means are also provided for frequency-converting the received frequency-shift keyed wave to time-division code-modulated waves of the same frequency by interdetection of this received wave and the latter-mentioned carrier waves. The output from the frequency converting means is then fed to combining means to derive a code-modulated wave of the same frequency. Also included is means to produce a reference carrier for synchronization detection from the latter code-modulated wave and means to produce synchronization detection between the reference carrier and the code-modulated waves at the output of the frequency converting means.

3,444,321
DEFECTIVE CIRCUIT DETECTOR

Athanasius J. Pantos, 132 Kingsview Blvd., Weston, Ontario, Canada

Filed Oct. 11, 1965, Ser. No. 494,643
Claims priority, application Canada, Sept. 11, 1965, 940,338
Int. Cl. H04l *25/02;* **G08b** *21/00*
U.S. Cl. 178—69 **13 Claims**

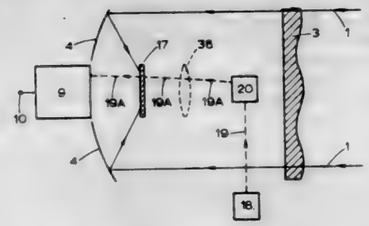
A line adapted to assume normal and nonnormal binary states is disconnectably connectable by a control switch to other circuitry. Detection means determine whether the line is in the nonnormal state for a period longer than would be encountered under proper operation. If so, the detection means disconnects the line from the circuit by disconnecting the switch. The switch is then maintained disconnected as long as the nonnormal condition exists, and when the nonnormal condition ceases, the detection means allows reconnection of the line to the circuit.



3,444,322
IMAGE PICKUP DEVICES

Pieter Schagen, Redhill, and Alexander Stark, Crawley, England, assignors to North American Philips Company Inc., New York, N.Y.

Filed June 9, 1965, Ser. No. 463,476
Claims priority, application Great Britain, June 10, 1964, 18,722/65
Int. Cl. H01j *29/89, 31/26;* **H04n** *3/16*
U.S. Cl. 178—7.87 **13 Claims**



An infrared image converter that employs a target composed of an infrared energy absorbing material for forming a thermal image thereon and a material that exhibits an absorption edge at a given wavelength. The wavelength of the edge varies with temperature so as to vary the optical transmission characteristic of the material. An infrared image is projected onto the target and a thermal image thereof is formed. The target is scanned with electromagentic radiation of said given wavelength. The target passes said radiation in proportion to the local temperature variations produced by the thermal image. A converter converts the output radiation into a useful electric signal.

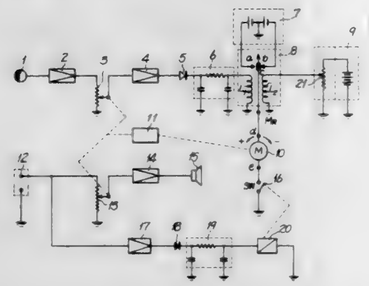
3,444,323
AUTOMATIC SOUND VOLUME CONTROLLING SYSTEM

Tatsuo Nagashima and Fujio Suganuma, Tokyo, Japan, assignors to TDK Electronics Company, Limited, Tokyo, Japan, a corporation of Japan

Filed Oct. 18, 1965, Ser. No. 496,875
Claims priority, application Japan, Nov. 26, 1964, 39/66,727
Int. Cl. H01m *1/02*
U.S. Cl. 179—1 **3 Claims**

An automatic volume control system for a loudspeaker carrying an audio output adjusts the amplification factor

of the loudspeaker output in accordance with the noise level at the location of the loudspeaker. A meter type relay element compares a voltage representative of the noise level with a reference voltage and the difference voltage drives a reversible motor in one direction or the other dependent upon the sense of the difference to ac-



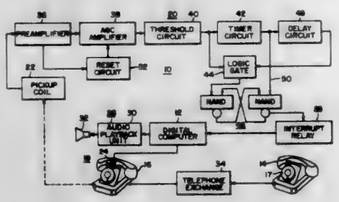
tuate potentiometers in one sense or the other to effect a change in one direction of the noise level amplification applied to the meter relay and a corresponding change in the opposite direction of the level of the audio input to the loudspeaker. The volume control system is operative only when there is no audio output.

3,444,324

TELEPHONE-COMPUTER-PROCESS FOR COMMUNICATING DATA AND TELEPHONE SIGNAL DECODER THEREFOR

Roger R. Dougan, Monroeville, Pitcairn, Francis T. Thompson, Penn Hill Township, Verona, and Tibor Rubner, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Dec. 23, 1965, Ser. No. 515,813
Int. Cl. H04m *11/00*; H04b *1/16*; H03g *3/30*
U.S. Cl. 179—2 **5 Claims**



A telephone-computer communications system includes decoding circuitry for distinguishing real telephone dial digit pulses from noise and false pulses. The circuitry includes an AGC amplifier and timing and logic circuitry which identifies the real pulses for inputting to the computer.

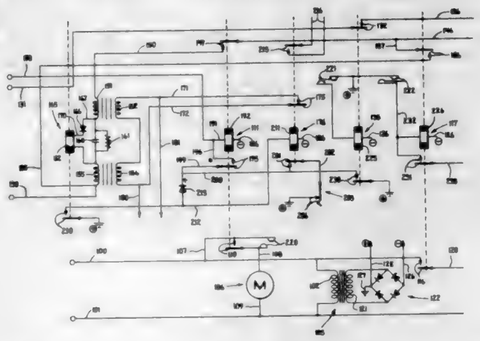
3,444,325

ALARM DIALING AND TRANSMITTING SYSTEM WITH MESSAGE TRANSMISSION RESPONSIVE TO CHANGE OF POLARITY ON TELEPHONE LINES

Herbert M. Blinn, 319 E. 121st Ave., Tampa, Fla. 33612

Continuation-in-part of application Ser. No. 426,840, Jan. 21, 1965. This application Dec. 13, 1967, Ser. No. 699,281
Int. Cl. H04m *11/04*
U.S. Cl. 179—5 **5 Claims**

Alarm dialing and transmitting equipment for use with conventional telephone equipment and including cam operated means for dialing a predetermined party and for playing a recorded message to the recorded party. The equipment is arranged to automatically continue calling



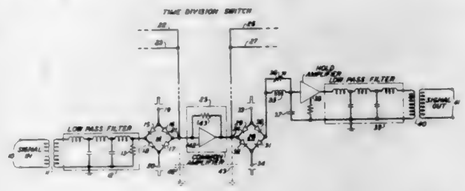
the predetermined party until the party answers and signals back to the equipment with a given signal.

3,444,326

TIME DIVISION SWITCHING CIRCUIT

Sotirios C. Kitsopoulos, Summit, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 24, 1964, Ser. No. 420,975
Int. Cl. H04j *3/10*
U.S. Cl. 179—15 **3 Claims**



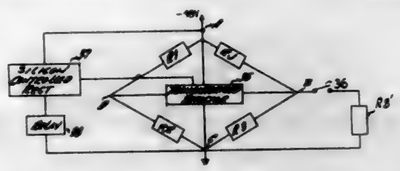
A time division switching system using a common bus that includes an amplifier circuit is disclosed. The output of the amplifier circuit is applied to a hold circuit, contained in each output terminal, which comprises a tunable series resonant circuit and a high input impedance amplifier circuit. The combination reduces crosstalk, compensates for frequency roll-off and reduces power losses resulting from the use of the sampling technique.

3,444,327

IDLE TEST UNIT

Harold William Doddington, Rio Piedras, Puerto Rico, assignor to International Telephone and Telegraph Corporation, a corporation of Delaware

Filed July 16, 1965, Ser. No. 465,520
Int. Cl. H04m *3/56*
U.S. Cl. 179—18 **5 Claims**



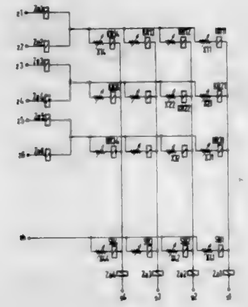
An idle test circuit comprises a resistor bridge which is unbalanced one way for busy conditions and another way for idle conditions. If two or more seizing circuits test the same idle circuit, both of the seizing circuits receive a busy signal. This circuit has special utility as a test circuit in a folded network.

3,444,328

COUPLER CIRCUIT HAVING VOLTAGE RESPONSE SWITCHING MEANS AT CROSS-POINTS THEREOF FOR TELEPHONE EXCHANGE COUPLING FIELD

Gerhard Büttner and Klaus Bushmann, Munich, and Wolfgang Papke, Socking uber Starberg, and Herbert Philipp, Munich, Germany, assignors to Siemens Aktiengesellschaft, Munich, Germany

Filed Sept. 3, 1965, Ser. No. 484,981
Claims priority, application Germany, Sept. 30, 1964, S 93,497
Int. Cl. H04m *3/56*
U.S. Cl. 179—18 **3 Claims**



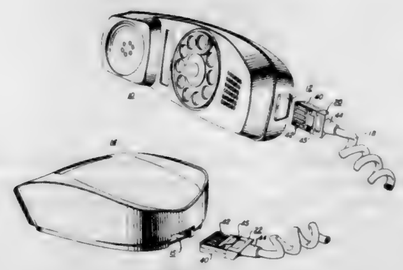
A control matrix in coordinate form having polarized relays for controlled coupling wherein at the crossing points thereof the operating coil of an associated relay is connected in series with a voltage dependent, current-direction independent resistor between the corresponding row and column lines and wherein energization of the relays to different operating positions may be effected over the same circuits of the control matrix.

3,444,329

TELEPHONE SET

Charles L. Krumreich, Indianapolis, Ind., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Oct. 27, 1965, Ser. No. 505,374
Int. Cl. H04m *1/02*
U.S. Cl. 179—100 **3 Claims**



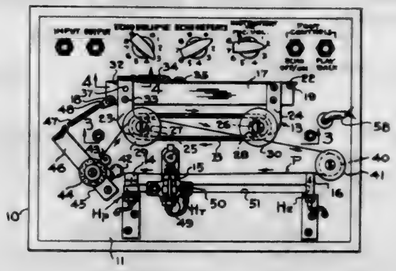
A telephone set includes a handset and a base each having a socket at one end thereof, only the entrance of each socket being exposed. The handset cord is provided with a plug at each end thereof that is accommodated by the socket and each plug has a detent that cooperates with the associated socket to latch the plug in place. The plugs when latched blend with the base and handset to conceal their presence.

3,444,330

ECHO PRODUCING ENDLESS LOOP MAGAZINE RECORDER

Michael A. Battle, Akron, Ohio, assignor to Market Electronics Company, Cleveland, Ohio, a corporation of Ohio

Filed Jan. 13, 1964, Ser. No. 337,243
Int. Cl. G11b *5/00*
U.S. Cl. 179—100.2 **4 Claims**



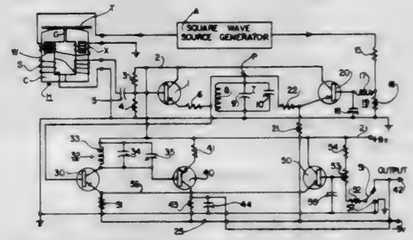
An echo producing recorder having an endless loop tape wound in a plurality of superposed convolutions on two equal sized freely rotatable spools, one of the spools being mounted on a pivoted arm and biased away from the other spool in order to maintain the tape in taut condition.

3,444,331

FLUX-GATE HEAD READING

Robert F. Brown, Jr., Dallas, Tex., assignor to The Geotechnical Corporation (a Division of Teledyne Industries Inc.), a corporation of Delaware

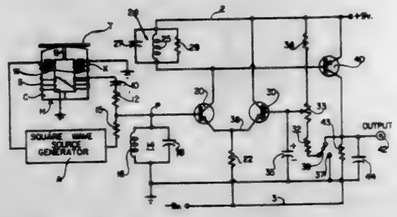
Filed Oct. 8, 1965, Ser. No. 493,982
Int. Cl. G11b *5/30*
U.S. Cl. 179—100.2 **6 Claims**



A method and apparatus for reading the density of a flux induced in the saturable core of a magnetic transducer in which an exciter signal of frequency which is high as compared with the frequency of the induced flux is used to unidirectionally saturate and then unsaturate a portion of said core. The circuit then obtains from other windings on the core intelligence pulse signals whose pulse positions correspond to the moments of core saturation and unsaturation by the exciter signal, and whose amplitudes are proportional to the momentary induced flux. A portion of the exciter signal is also coupled to provide a substantially constant drive to a resonant circuit tuned to the fundamental of the exciter signal frequency to maintain thereacross a ringing signal, and the amplitude of this ringing signal is then further modulated by applying said pulse signals to also drive the same resonant circuit, such further drive being proportional to said induced flux. Especially where the exciter frequency is fairly high it is desirable to provide means for adjusting the relative phases of said applied signals to maximize modulation of the ringing signal across the resonant cir-

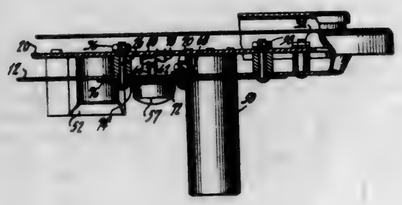
cuit, which condition occurs where the two drives are most nearly in phase. Means is also provided to automatically enhance the percent modulation of the composite ringing signal appearing across the resonant circuit, which signal is then amplitude demodulated.

3,444,332
FLUX-GATE HEAD CIRCUIT
Robert F. Brown, Jr., Dallas, Tex., assignor to Teledyne Industries, Inc., Geotech Division, a corporation of California
Filed Apr. 18, 1966, Ser. No. 543,309
Int. Cl. G11b *5/06*
U.S. Cl. 179—100.2 **5 Claims**



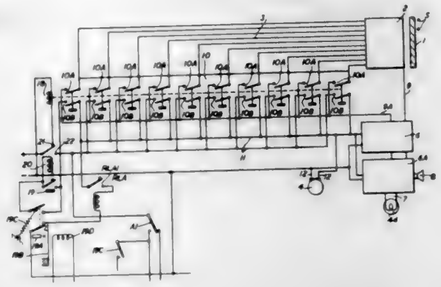
A method and apparatus for reading the density of a flux induced in the saturable core of a magnetic transducer in which an exciter signal of frequency which is high as compared with the frequency of the induced flux is used to unidirectionally saturate and then unsaturate a portion of said core. The circuit then obtains from other windings on the core intelligence pulse signals whose pulse positions correspond to the moments of core saturation and unsaturation by the exciter signal, and whose amplitudes are proportional to the momentary induced flux. A portion of the exciter signal is also coupled to provide a substantially constant drive directly to a resonant circuit tuned to the fundamental of the exciter signal frequency to maintain thereacross a ringing signal, and the amplitude of this ringing signal is then further modulated by applying said pulse signals to also directly drive the same resonant circuit, such further drive being proportional to said induced flux. Means is provided to automatically enhance the percent modulation of the composite ringing signal appearing across the resonant circuit, which signal is then amplitude demodulated.

3,444,333
PHONOGRAPH WITH CIRCUIT BOARD MOUNTED ON THE MOTORBOARD BENEATH THE TURNTABLE
John Allen Tourtellot, Indianapolis, Ind., assignor to Radio Corporation of America, a corporation of Delaware
Filed May 8, 1964, Ser. No. 366,020
Int. Cl. C11b *3/00*
U.S. Cl. 179—100.4 **6 Claims**



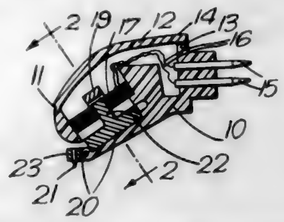
Phonograph apparatus construction in which the motorboard serves as a mounting support for a printed circuit board and a heat sink for a power transistor.

3,444,334
COIN-CONTROLLED SOUND RECORD PRODUCING APPARATUS
Charles William Clark, 24 Manchester Square, London W. 1, England
Filed Mar. 24, 1966, Ser. No. 537,232
Claims priority, application Great Britain, Mar. 24, 1965, 12,498/65
Int. Cl. G11b *3/64, 3/00*
U.S. Cl. 179—100.4 **1 Claim**



An automated recording and reproducing apparatus includes record delivering mechanism for applying a record to a turntable and for removing the record therefrom and a recording head and reproducing head operated by a control mechanism in response to first and second coin-controlled circuits for selectably recording and/or reproducing selected signals via amplifying circuits. The control mechanism includes self-locking push-button switches to provide selection of stored signals to be recorded or reproduced.

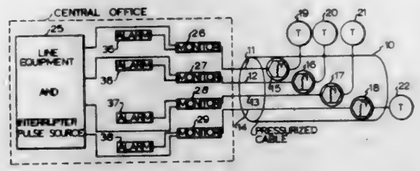
3,444,335
PHONOGRAPH PICK-UP WITH DE-COUPLING OF THE STYLUS MASS
John Walton, 19 New End, London NW. 3, England
Filed Jan. 4, 1965, Ser. No. 423,026
Int. Cl. H04r *1/16;* **G11b** *3/00*
U.S. Cl. 179—100.41 **1 Claim**



A phonograph pick-up comprising a transducer, a stylus in a removable stylus carrier and transmission means for transmitting movement of the stylus to the transducer, the stylus carrier being located in or engaging said transmission means and said stylus carrier extending traversely to the direction of motion of the stylus to be transmitted is characterized in that the stylus carrier is flexible between the stylus and a part of the stylus carrier shaped to engage said transmission means, the flexibility providing compliance and damping between the stylus and the transmission means in the direction of motion of the stylus so as to partially decouple the stylus from the transmission means and thereby to reduce the effective mass at the stylus tip, the compliance being determined in accordance with the de-coupled mass to give a transmission

characteristic which is a periodic over a limited frequency range or has a resonance, damped by said damping, at a frequency near or above the upper end of the audio frequency range.

3,444,336
PRESSURIZED CABLE FAULT SIGNAL CIRCUIT
Donald R. Holt and Wallace E. Jones, Jr., Durham, N.C., assignors, by mesne assignments, to D. O. Creasman Electronics, Inc., Candler, N.C., a corporation of North Carolina
Filed July 22, 1966, Ser. No. 567,194
Int. Cl. H04b *3/46;* **G08b** *21/00*
U.S. Cl. 179—175.3 **7 Claims**



A system for the continuous monitoring of pressure, by pressure operated switches at selected points along the length of a pressurized cable by use of working cable pairs. Each switch is associated with a different cable pair. Whenever the cable pair is in use by a telephone subscriber the monitoring system for the associated cable pair is disabled.

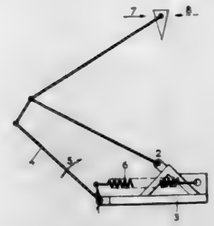
3,444,337
DISTRIBUTING FRAME CUT-OVER DEVICE
Gerald E. Hutton, Gale L. Knittle, and Emmett E. Riley, Springfield, Ill., assignors to American Telephone and Telegraph Company, New York, N.Y., a corporation of New York
Filed Dec. 21, 1965, Ser. No. 515,314
Int. Cl. H04m *1/11*
U.S. Cl. 179—178 **9 Claims**



This application describes a telephone central office cut-over switch which consists of a set of transfer contact springs assembled in an insulated body. The body has a finger grip at one end with two connections and a hook-shaped contact spring at the other end. The switch attaches over the heat coils associated with a given telephone line; annd the old switching equipment is connected through the temporary switch while the new equipment is wired to the protector unit which contains the heat coil. For cut-over, a pin which holds the transfer mechanism in one position is removed.

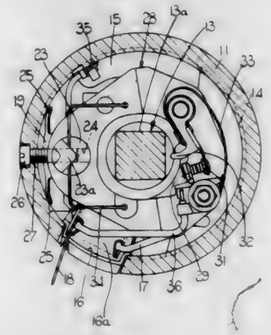
3,444,338
SAFETY DEVICES FOR POWER TAPS FROM OVERHEAD LINES
Roland Léger, Paris, France, assignor to Etablissements L. Faiveley, Saint-Ouen, France
Filed May 17, 1966, Ser. No. 550,701
Claims priority, application France, May 21, 1965, 17,928
Int. Cl. B60l *5/26, 5/30*
U.S. Cl. 191—66 **11 Claims**

A safety device for half-pantographs, the triggering device thereof being triggered in response to abnormal forces in any of a plurality of directions, supported and



transmitted by the pantograph counter-lever to an articulated retracting mechanism.

3,444,339
IGNITION DISTRIBUTORS
Norman Alfred Jukes, Walsall, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England
Filed Aug. 1, 1967, Ser. No. 657,626
Claims priority, application Great Britain, Aug. 23, 1966 37,674/66
Int. Cl. H01h *19/60*
U.S. Cl. 200—22 **9 Claims**

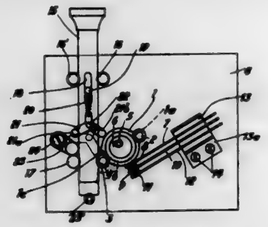


An ignition distributor including a first plate fixed relative to the casing, of the distributor, a second plate slidable on the first plate and carrying the fixed and movable contacts of the contact breaker assembly of the distributor, the first plate being formed with a hinged portion with which the second plate is engaged so that movement of the hinged portion is transmitted to the second plate to alter the position of the contact breaker assembly with respect to the cam shaft of the distributor thereby adjusting the amount by which the contacts can be opened in response to rotation of the cam shaft of the distributor.

3,444,340
DEVICE FOR CONTROLLING ELECTRICAL SWITCH ELEMENTS
Roger Chavenaud, Levallois, and Georges Janoska, Courbevoie, France, assignors to Societe a Responsabilite Limitee: Societe Lamy d'Etudes et de Recherches "Soler," Courbevoie, France, a corporation of France
Filed Oct. 30, 1967, Ser. No. 678,959
Claims priority, application France, Nov. 24, 1966, 84,887
Int. Cl. H01h *7/12, 43/10*
U.S. Cl. 200—38 **9 Claims**

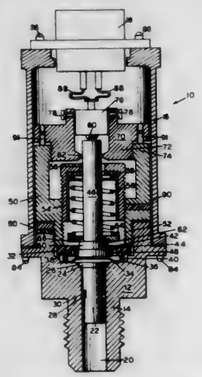
A control device having a resilient deformable ring with a plurality of spaced peripheral concave notches, two

of which, in one position, are engageable with spaced studs; and two of which in another position are engageable with the spaced studs; and means for deforming the



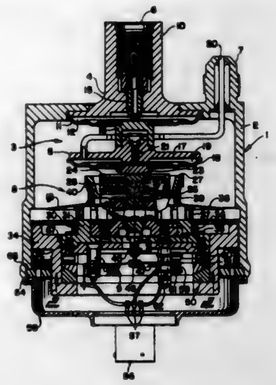
ring to move it between the positions, and contact means associated with the periphery of the ring and actuated upon movement of the ring.

3,444,341
PRESSURE ACTUATED SWITCH
Perceptimus J. Mighton, 1419 N. 78th E. Ave., Tulsa, Okla. 74115
Filed Feb. 23, 1961, Ser. No. 91,039
Int. Cl. H01h *35/38;* **F16j** *9/12*
U.S. Cl. 200—82 **1 Claim**



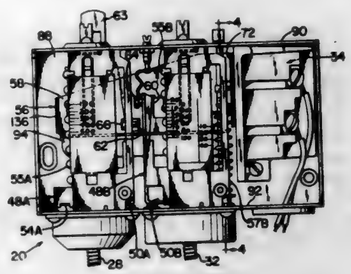
1. A pressure switch having a tubular base, a flexible diaphragm member affixed to said base to seal the tubular opening thereof, a switch actuator rod movably positioned in relation to said base having one end thereof in engagement with said diaphragm, a coil spring to apply predetermined pressure against said diaphragm, a switch base adjustably lockable to said tubular base, means lockable to said switch base to adjust said spring pressure, said switch base having an opening therein adaptable to slideably receive said switch actuator rod, and a switch affixed to said base having a switch actuator element contactable with said switch actuator rod; a piston slideably positioned in the tubular opening of said base, said piston engageable against that side of said diaphragm opposite that side engaged by said switch actuator rod, said piston having an annular groove formed therein to receive a gasket member, said groove defined in part by a forward side sloped in a direction opposite the direction from which pressure is applied to said piston, said gasket being a deformable O-ring positioned in said groove to contact said tubular opening of said base whereby said O-ring under pressure is disposed to deform primarily toward the interior of said groove whereby the area of contact between said O-ring and said tubular opening is not materially increased by increase of pressure within said tubular opening, yet provides a seal between said diaphragm and said pressure.

3,444,342
PRESSURE ACTUATED SNAP ACTION ELECTRIC SWITCH UTILIZING AN IMPROVED BELLEVILLE SPRING
Richard L. Kenyon, Los Angeles, and John R. Burns, Culver City, Calif., assignors to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Dec. 1, 1966, Ser. No. 598,486
Int. Cl. H01h *35/24, 35/40*
U.S. Cl. 200—83 **28 Claims**



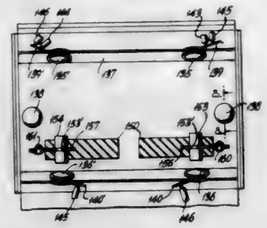
A fluid pressure actuated switch including a movable contact which is actuated upon deflection of a snap action Belleville spring by a flexible diaphragm.

3,444,343
SHUTTLE CONSTRUCTION UTILIZED TO TRANSMIT THE EXPANSION AND CONTRACTION EFFECTS OF HIGH AND LOW PRESSURE BELLOWS AND THE LIKE
Arthur L. Good, Elkhart, Ind., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Continuation-in-part of application Ser. No. 599,515, Dec. 6, 1966. This application Jan. 25, 1967, Ser. No. 611,669
Int. Cl. H01h *35/40*
U.S. Cl. 200—83 **18 Claims**



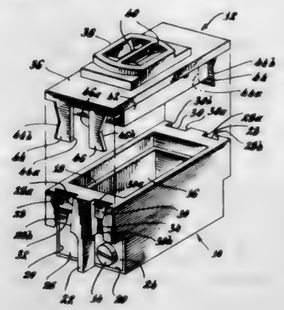
The shuttle construction is actuated by pressure responsive means of the regulator and actuates a switch means and the like. The shuttle means may be an edgewise movable main sheet metal body with actuated flange means, actuating flange means bent from and at right angles to the main sheet metal body. Spring attaching openings receive the ends of springs which support the shuttle construction on a parallel flat wall construction. The spring means are C-shaped sheet metal springs with web feet attached to the shuttle and to the wall.

3,444,344
REVERSIBLE DOOR OPERATOR SWITCH
Frederick A. Purdy, 521 Park Ave., New York, N.Y. 10021
Continuation-in-part of application Ser. No. 226,411, Sept. 26, 1962. This application Oct. 2, 1964, Ser. No. 401,264
Int. Cl. H01h *3/00*
U.S. Cl. 200—153 **15 Claims**



A motor operated door having a reversible motor for opening and closing a door, and a circuit for controlling the motor, a switch in the circuit having a tongue of pliable material having an inherently fixed shape into which such tongue returns when freed after bending, electrodes within the circuit extending through the tongue for making electrical contacts in alternating directions, means for bending the tongue, means for holding the tongue bent and means for releasing the holding means.

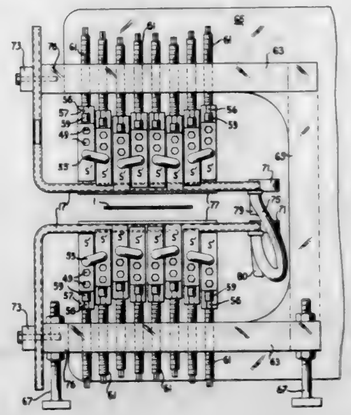
3,444,345
ELECTRICAL WIRING DEVICE WITH POSITIVE LOCKING COVER
Czeslaw Mackiewicz, Trumbull, Conn., assignor to Harvey Hubbell, Incorporated, Bridgeport, Conn., a corporation of Connecticut
Filed June 29, 1967, Ser. No. 650,116
Int. Cl. H01h *9/02*
U.S. Cl. 200—168 **11 Claims**



This invention pertains to an electrical wiring device of the interchangeable type. The housing of the device is formed with a shoulder at each end. The cover includes a locking prong which extends downwardly from each end and, after assembling the cover to the housing, is deformed beneath the shoulder to give a positive locking effect.

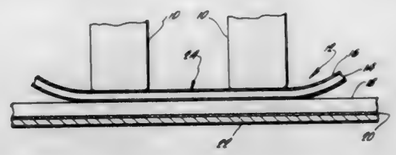
3,444,346
INDUCTIVE HEATING OF STRIP MATERIAL
Robert J. Russell, North Dighton, Mass., and Joseph Wesley Cable, Monroe, Conn., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Dec. 19, 1966, Ser. No. 602,716
Int. Cl. H05b *5/08, 9/02*
U.S. Cl. 219—10.61 **15 Claims**

Moving strip of conductive material capable of being heated by magnetic induction of current therein is passed through alternating magnetic flux emanating from one or more adjustably located conductors extending across the strip. In the flux field surrounding each conductor is a flux concentrating pole structure composed of a series



of adjustable pole segments, each series of such segments extending across the strip. When more than one conductor is employed analogously located segments in the various series of segments are ganged for simultaneous adjustments.

3,444,347
METHOD FOR SOLDER REFLOW CONNECTION OF INSULATED CONDUCTORS
John V. Mulcahy, Temple City, Calif., assignor to Unitek Corporation, Monrovia, Calif., a corporation of California
Filed Jan. 10, 1966, Ser. No. 519,763
Int. Cl. B23k *1/02*
U.S. Cl. 219—85 **8 Claims**

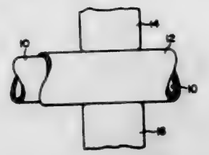


A method of reflow soldering of insulated conductors to portions of a workpiece to which the conductor is to be bonded. The method provides the steps of contacting the insulated conductor to the portion of the workpiece to which it is to be bonded with parallel gap welding electrodes. Thereafter pressure is exerted on the conductor by the electrodes and heat is supplied thereto to vaporize the insulation and cause the solder to melt and reflow over the now bared portion of the conductor. The electrical connection is completed by removing the electrodes from the workpiece and allowing the solder to solidify.

3,444,348
HERMETIC SEALING OF REFRACTORY METAL TUBING
Isaac S. Goodman, Livingston, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 12, 1966, Ser. No. 572,057
Int. Cl. B23k *11/02*
U.S. Cl. 219—117 **6 Claims**

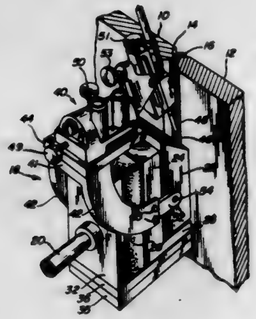
A method for the tip-off welding of refractory metal tubing, in air, to produce a vacuum tight seal which

comprises the steps of; inserting a length of oxidation resistant metal or metal alloy tubing within the refractory metal tube, pinching off or squeezing the tube in the



area overlying the oxidation-resistant metal or alloy and resistance tip-off welding the tube to provide a vacuum tight hermetic seal.

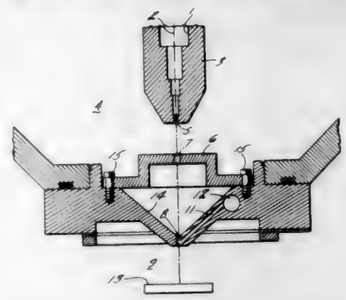
3,444,349
WELDING APPARATUS
Carl Max Rainey, Homewood, Ill., assignor to Chicago Bridge & Iron Company, Oak Brook, Ill., a corporation of Illinois
Filed June 3, 1966, Ser. No. 555,142
Int. Cl. B23k *9/12, 9/18*
U.S. Cl. 219—126 **3 Claims**



Welding apparatus for butt welding a vertical joint between two substantially abutting vertical members, including a weld retaining rigid shoe bar spanning the joint, a platform extending below the shoe bar for supporting the shoe bar in position vertically along the joint, the platform having an upper surface with a low coefficient of friction enabling slidable lateral displacement of the shoe bar with respect to the platform, resilient means urging the shoe bar into yieldable slidable engagement with the vertical members and enabling the shoe bar to slidably displace along the low friction upper surface of the platform as variations or obstructions are encountered by the shoe bar along the joint and a wire guide device rigidly mounted to the shoe bar to maintain the relative position between the shoe bar and the welding wire during the welding operation.

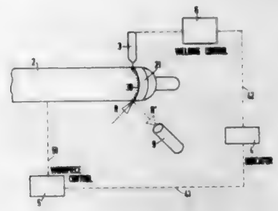
3,444,350
JET DIFFUSER PLATE FOR ELECTRON BEAM DEVICE
Robert M. Niedzielski, Thompsonville, Conn., and Donald E. Powers, Springfield, Mass., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Oct. 23, 1965, Ser. No. 503,398
Int. Cl. B23k *15/00*
U.S. Cl. 219—121 **21 Claims**

This disclosure relates to the working of materials with a beam of charged particles, and particularly to systems in which the workpieces are preferably located in a pressure environment different from that of the electron beam source. Aligned apertures are provided in the partitions between the different pressure environments for beam passage to the workpiece. A diffusion plate is located in



the gas flow into the environment of lower pressure to impede the direct flow of gas through the aligned beam apertures. The diffusion plate improves the maintenance of higher vacuums and reduces the difficulty of working the materials.

3,444,351
METHOD AND APPARATUS FOR WELDING AND CHECKING TUBULAR WORKPIECES
Heinz Stehle, Werner Kaden, and Alfred Schaal, Erlangen, Germany, assignors to Siemens Aktiengesellschaft, Erlangen, Germany, a corporation of Germany
Filed June 8, 1966, Ser. No.. 556,180
Claims priority, application Germany, June 11, 1965, S 97,566; May 6, 1966, S 103,657
Int. Cl. B23k *9/12, 9/16, 31/02*
U.S. Cl. 219—124 **13 Claims**

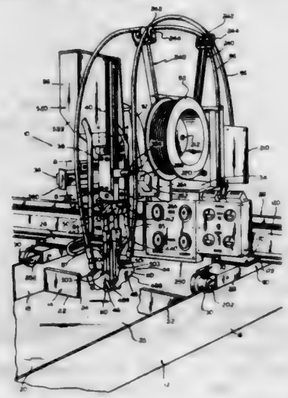


Method of coaxially joining tubular workpieces, such as the end cap and envelope tube of a nuclear fuel rod, by electrically welding a peripheral seam and checking the weld quality by radiation includes the steps of rotating the workpieces about their axis at substantially constant speed within a protective atmosphere and adjacent to a welding electrode to produce the weld, simultaneously subjecting the weld in still hot condition to continuous radiation, checking to obtain an indication of weld quality, and effecting a work control in accordance with the indication; and apparatus for carrying out the method.

3,444,352
ADJUSTABLE WELDING HEAD ARRANGEMENT
Ralph P. Ogden, Park Forest, Ill., and William P. Lawson, Hammond, Ind., assignors to Ogden Engineering Corporation, Schererville, Ind., a corporation of Indiana
Continuation-in-part of application Ser. No. 589,651 Oct. 26, 1966. This application June 12, 1968, Ser. No. 748,143
Int. Cl. B23k *9/12*
U.S. Cl. 219—125 **18 Claims**

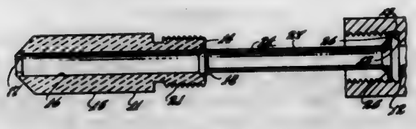
The disclosure relates to a dual welding head arrangement for welding machines of the automatic type that is

especially adapted for welding stiffener plates to fabricated I-beams and the like structures. The basic head arrangement is disclosed in submerged arc and gas shielded forms and is in the form of a pair of welding heads for simultaneously welding each fillet which are adjustably secured to a floating support structure that permits the heads to float laterally of both the stiffener and the plate being reinforced, respectively, with each head being in the



form of a housing in which is pivoted a body of electrically insulating material in which the nozzle for the welding wire is embedded in insulated relation with respect to the housing. A screw type adjustment device is interposed between each housing and insulating body of each head for adjusting the discharge end of the nozzle of each head relative to the fillet that is to be welded, independently of the guiding system for the head arrangement.

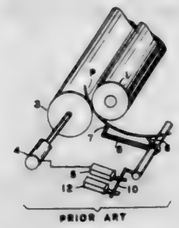
3,444,353
WELDING TIPS
William S. Wilson, % Allied Metal Products Co., 3349 N. P St., Philadelphia, Pa. 19134
Filed Feb. 5, 1965, Ser. No. 430,585
Int. Cl. B23k *35/04, 9/26, 35/22*
U.S. Cl. 219—136 **5 Claims**



A replaceable tip assembly, for a welding tool, comprises an elongated hollow shell (in certain embodiments non-conductive) with an abutment face at its inboard end, an inner metallic tube with an inboard end shoulder cooperating with said face and having an inside surface of a diameter to fit and conduct a current to a coaxial welding rod, and means adjacent the inboard end of the shell for fastening to a permanent part of the tool (and in certain embodiments there is a tapered and/or flared end surface on one or more of the parts, facilitating assembly and use of the tool).

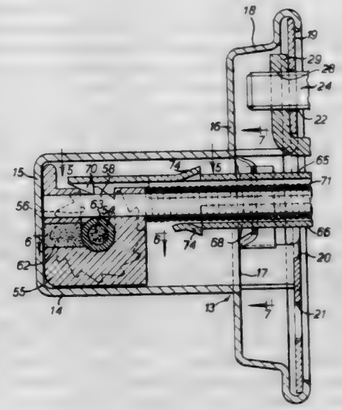
3,444,354
CONTROL MEANS FOR COPY MACHINES
Marvin I. Mindell, Great Neck, N.Y., assignor to Viewlex, Inc., Holbrook, N.Y.
Filed May 12, 1966, Ser. No. 549,601
Int. Cl. H05b *1/02*
U.S. Cl. 219—216 **3 Claims**

Control means for a copy machine of the type wherein a paper passes between two feeding rollers. A first sensor mounted before the bight of said rollers and adapted to be actuated to "on" position by the leading edge of said paper to turn said motor on. A second sensor mounted after the bight of said rollers and adapted to be actuated



by the leading edge of said paper, and means to connect said sensors to lock said first sensor in "on" position until the trailing edge of said paper releases said second sensor.

3,444,355
ELECTRICALLY HEATED APPLIANCES HAVING THERMAL CUT-OUTS
Arthur Tyler, Langley, Oldbury, near Birmingham, England, assignor to Bulpitt & Sons Limited, Birmingham, England, a British company
Filed July 5, 1966, Ser. No. 562,766
Claims priority, application Great Britain, July 6, 1965, 28,489/65, 28,490/65, 28,491/65; Nov. 23, 1965, 49,798/65
Int. Cl. H01h *37/76, 71/20;* **H05b** *1/02*
U.S. Cl. 219—331 **11 Claims**

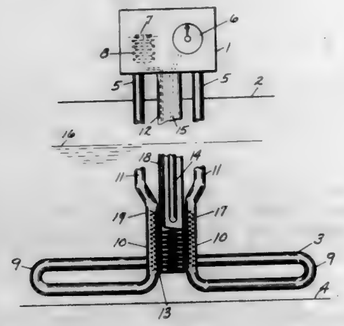


There is disclosed hereinafter a new thermally operated electrical cut-off device for use as a safety device with appliances employing electrical heaters. The device comprises at least two axially spaced ratchet wheels joined by a journal to form a ratchet cluster. The ratchets are engaged by pawls forming part of a plunger member where the plunger member is movable between an operative position and an inoperative position. The journal is mounted in a spacer member and both the journal and spacer may be provided with holes for receiving fusible material. The fusible material, when in a solid state, is used to fix the ratchet cluster and spacer to each other and to a thermal housing and when in a melted or liquid state permits the ratchets to rotate. The cluster, spacer and plunger are so constructed that they may be removed as a unit from the housing.

3,444,356
IMMERSION HEATER

John J. Fian, Erie, Pa., assignor of one-half to Glenn Electric Heater Corporation, Erie, Pa., a corporation of Pennsylvania

Filed Nov. 4, 1966, Ser. No. 592,184
Int. Cl. H05b 3/78
U.S. Cl. 219—331 3 Claims



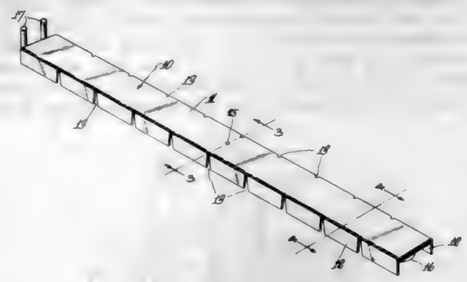
1. In an immersion heater for heating liquid having a thermowell with its upper end above the desired normal liquid level and a section at its lower end at and below the minimum liquid level, a sheathed heating element having the greater part of its active length below said minimum liquid level and with a portion of the sheath in its active length extending above said greater part, up to said minimum liquid level and up along and united to the exterior of said section of the thermowell, a thermostat means for controlling the liquid temperature, said thermostat means having a bulb in said thermowell responding to the temperature of the liquid in order to actuate a temperature-controlling switch, said bulb being filled with low temperature liquid which does not vaporize at temperatures in the range of the liquid temperatures controlled by said thermostat means, a capillary in said thermowell filled with a low temperature liquid which does not vaporize at temperatures in the range of the liquid temperatures controlled by the thermostat means and in heat transfer relation to said section of the thermowell whereby upon dropping of the liquid level below said minimum liquid level the temperature of the exposed sheath in the active length of the heating element rises and the rise in temperature of the exposed sheath heats the capillary and vaporizes liquid in said capillary and thereby greatly increases the pressure within the capillary, a normally closed safety cut-off switch for the heating element, and means responsive to the increase in pressure in the capillary due to said vaporization for opening said switch.

3,444,357
ELECTRIC HEATING APPARATUS

Lester D. Drugmand, Pittsburgh, Pa., assignor to Edwin L. Wiegand Company, Pittsburgh, Pa.

Filed Feb. 7, 1967, Ser. No. 614,503
Int. Cl. H05b 3/58
U.S. Cl. 219—535 8 Claims

An electric heater assembly which is longitudinally deformable to correspond to various curved surfaces to be heated, thus adapting the assembly for weld pre-heating and the like. The assembly includes a trough-shape housing and a metal-sheathed hair-pin type heater element held within the trough by means of a plurality of brackets, the element passing through slots in the brackets and the wall of one bracket being deformed to form an abutment engageable with the bight of the element. The walls of the trough are formed with a series of triangularly shaped slots to increase longitudinal flexibility of the

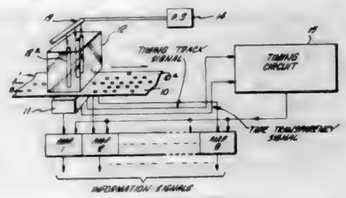


assembly. A reflector and heat insulator are included in the assembly to concentrate the heat.

3,444,358
RECORD READER

Robert Lee Malone, Palos Verdes Peninsula, Calif., assignor to Ex-Cell-O Corporation, Detroit, Mich., a corporation of Michigan

Filed May 14, 1965, Ser. No. 455,798
Int. Cl. G06k 7/00
U.S. Cl. 235—61.11 4 Claims

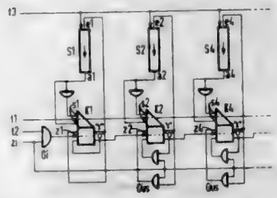


Record reader for optically reading recorded information marks including sensing of the optical properties of the record member per se. The record reader includes circuit means for responding to the electrical signals produced from reading the record member including modification of the read-out signals in accordance with the sensed optical properties of the record member.

3,444,359
MULTI-STAGE COUNTING APPARATUS HAVING CIRCULATING TIME STORES

Karl Anton Lutz, Munich-Solln, Germany, assignor to Siemens Aktiengesellschaft, a corporation of Germany

Filed Nov. 16, 1965, Ser. No. 508,122
Int. Cl. G06f 7/385; G06g 7/14
U.S. Cl. 235—92 10 Claims



1. In a multi-stage counting apparatus for separate counting of time-spaced pulses in which each stage has a circulating pulse store (S1, S2, S4) of 1-bit instantaneous storage capacity, the improvement comprising

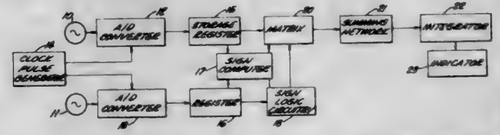
a bistable flip-flop (K1, K2, K4) for each stage connected together in tandem with the counting inlet (z2, z4) of each stage but the first connected to one of the outlets ("0") of the preceding stage flip-flop,

and the counting inlet (z1) of the first stage flip-flop supplied with the pulses to be counted, each flip-flop having a control inlet (s1, s2, s4) connected to the outlet of said circulating pulse store, the inlet (e1, e2, e4) of said store being connected to the other inlet ("1") of the flip-flop, each store having a pulse circulating time (V) equal to the minimum pulse succession time (T) of the pulses to be counted together, less the time interval between the appearance of a pulse at the control inlet of the flip-flop and the re-registration of that pulse in the same store, said flip-flop being operable to switch into a first condition ("1") with a voltage available at said other outlet ("1") when a pulse is supplied to said control inlet and back to a second condition ("0") when a pulse is coincidentally supplied to its counting inlet.

3,444,360
DIGITAL MULTIPLIER FOLLOWED BY A DIGITAL-TO-ANALOG CONVERTER

Merrill L. Swan, Arcadia, Calif., assignor to United Geophysical Corporation, Pasadena, Calif., a corporation of Delaware

Filed July 12, 1965, Ser. No. 470,978
Int. Cl. G06f 7/39
U.S. Cl. 235—156 17 Claims

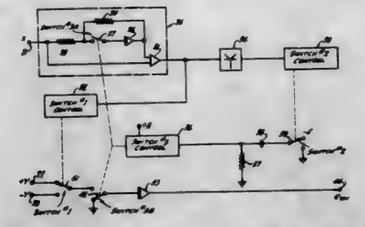


The multiplier of this invention produces an analog product of an analog multiplier and an analog multiplicand taking full account of the signs. The analog multiplier and multiplicand signals are converted to binary signals which are then multiplied together through the medium of special circuitry utilizing sign logic to multiply the numbers or their complements and to weight various intermediate products as explained to produce the final required output signal that presents the product both in magnitude and sign. The analog signals may be continuously variable functions of time.

3,444,361
METHOD AND MEANS OF GENERALIZED INTEGRATION

George A. Bekey, Venice, Calif., assignor to Beckman Instruments, Inc., Fullerton, Calif., a corporation of California

Filed Oct. 15, 1959, Ser. No. 846,657
Int. Cl. G06g 7/18
U.S. Cl. 235—183 13 Claims

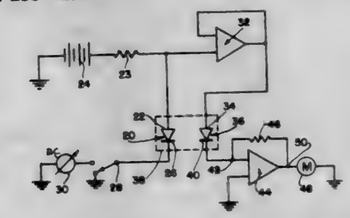


9. An integrator circuit for an analog function generator comprising a first circuit adapted to receive a variable input voltage and including switching means interrupting the input voltage thereto and producing control voltages equal to the difference between input voltages during consecutive sampling periods, a timing circuit connected to receive said control voltages for actuating switch control means for a predetermined period of time, means connecting said switch control means to the switch of said first circuit, and a second circuit adapted to receive a variable input voltage and including an accumulator having switching means at the input thereof controlled by the switch control means of said timing circuit for performing a summation of successive values of the input voltage thereto, whereby said summation is proportional to the integral of the variable voltage received by said sampling circuit multiplied by the differential of the variable voltage received by said first circuit.

3,444,362
ANTILOGARITHMIC FUNCTION GENERATOR

Alan R. Pearlman, Newton Highlands, Mass., assignor, by mesne assignments, to Teledyne, Inc., Hawthorne, Calif., a corporation of Delaware

Filed Oct. 30, 1964, Ser. No. 407,795
Int. Cl. G06g 7/26; H03k 19/08; H01l 11/00
U.S. Cl. 235—197 8 Claims



A device for generating antilogarithmic functions of an input voltage and having a pair of semiconductor devices with matched thermal responses, each semiconductor having a diode junction. A reference current source is connected to a first of the junctions and the latter is also connected so as to sum the input voltage with the voltage drop across the first junction. The second junction is connected to the first junction only through an isolating or buffering means so that the summed voltages are applied to the second junction without perturbation of the current from the reference source. An output signal is provided by conversion of the current through the second junction to a corresponding voltage.

3,444,363
ETERNAL LIGHT MEMORIAL STRUCTURE

William J. Peters, Grass Valley, Calif., assignor to E.F.I., Inc., a corporation of Delaware

Filed May 26, 1966, Ser. No. 553,201
Int. Cl. F21p 1/02
U.S. Cl. 240—10 2 Claims



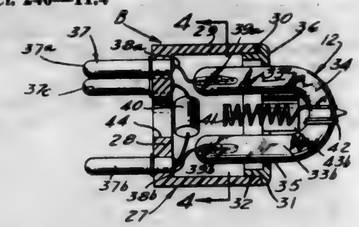
The perpetual light memorial structure includes a housing simulating a church in shape with a transparent door panel and having a removable bottom wall forming a floor in which is mounted means for supporting a battery on its side and an incandescent light socket between the

battery and transparent door. Yieldable electrical connections are provided between the poles of the battery and the side and bottom respectively of the light socket.

3,444,364
MOUNTING ASSEMBLY FOR A HIGH VOLTAGE GASEOUS DISCHARGE TUBE

Stephen E. Taylor, Burbank, and Gerald W. Sylvester, Glendora, Calif., assignors to Rite Autotronics Corporation, Los Angeles, Calif., a corporation of California

Filed Dec. 1, 1966, Ser. No. 598,429
Int. Cl. F21l 5/00
U.S. Cl. 240—11.4 5 Claims

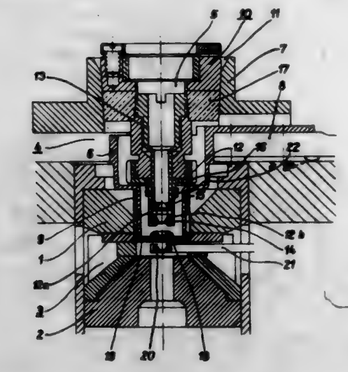


A mounting structure for a pulse triggered gaseous discharge tube, which can be connected directly to a spark plug. A U-shaped tube is mounted in a hollow body with its U-shaped portion extending through a diametric slot in one end wall. A flexible conductor having an end portion encircling the bridging portion of the tube and having a coiled portion forming a compression spring extends through the slot into the interior of the hollow body. The other end wall of the hollow body has plug connectors adapted to enter sockets on a support which has a male connector adapted to enter the body and contact the compression spring portion of the triggering electrode, a high voltage cable connector being connected with the male connector.

3,444,365
CONTINUOUSLY EVACUATED CORPUSCULAR-RAY APPARATUS, SUCH AS ELECTRON MICROSCOPE, HAVING A CRYOGENICALLY COOLED SPECIMEN CARTRIDGE

Wolfram Loebe, Berlin, Germany, assignor to Siemens Aktiengesellschaft, Munich, Germany, a corporation of Germany

Filed Oct. 19, 1965, Ser. No. 497,894
Claims priority, application Germany, Nov. 25, 1964, S 94,316
Int. Cl. H01j 37/26, 37/20; G01n 23/20
U.S. Cl. 250—49.5 6 Claims

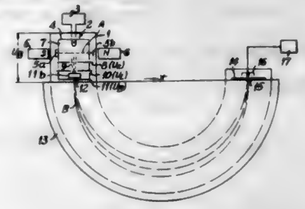


Combination with a vacuum vessel in a corpuscular-ray apparatus of a specimen cartridge having first and second coaxial component portions, a specimen carrier held by the first portion and surrounded by the second portion, both portions being mutually thermally insulated except for heating-conducting structure interconnecting the same and being formed of at least one elongated metal element disposed about the cartridge axis, and a cryogenic device in cooling contact with only the second of the portions, the heat-conducting structure having a conductance whereat the specimen carrier steady state temperature is higher than that of the second portion.

3,444,366
MASS SPECTROSCOPE HAVING MEANS FOR COMPENSATING FOR ELECTRON SPACE CHARGE IN THE ION SOURCE

Curt Brunnée and Günter Kappus, Bremen, Germany, assignors, by mesne assignments, to Varian MAT Gesellschaft mit beschrankter Haftung, Bremen, Germany

Filed Sept. 3, 1965, Ser. No. 484,813
Int. Cl. B01d 59/44; H01j 39/34
U.S. Cl. 250—41.9 1 Claim

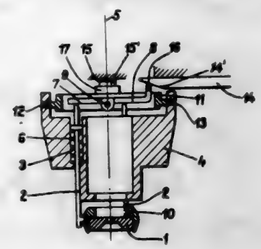


A mass spectroscope in which the ion acceleration voltage is altered to effect scanning has the ion extraction voltage formed by superimposing a voltage which varies proportionally to the acceleration voltage upon a supplementary voltage which is independent of the acceleration voltage so that the influence of the electron space charge on the ion paths and thus upon the sensitivity is compensated.

3,444,367
SPECIMEN TILTING DEVICE FOR PARTICLE BEAM APPARATUS

Alexander Asmus, Berlin, Germany, assignor to Siemens Aktiengesellschaft, Munich, Germany, a corporation of Germany

Filed June 29, 1965, Ser. No. 468,080
Claims priority, application Germany, June 30, 1964, S 91,781
Int. Cl. H01j 37/26
U.S. Cl. 250—49.5 20 Claims

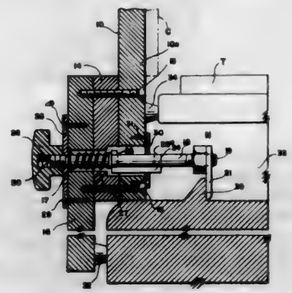


A specimen tilting device for a corpuscular ray apparatus, such as an electron microscope. The device includes a tiltable specimen carrier and an adjusting plate which is spaced from this carrier. A support means supports the adjusting plate for tilting movement about a tilt axis which is adjacent to the adjusting plate and which extends perpendicularly with respect to the principal or ray axis of the device. A means is provided for tilting the adjusting plate about this tilt axis, and a transmission means which moves parallel to the principal axis extends between and is in mechanical engagement with the adjusting plate and the specimen carrier for transmitting tilting of the adjusting plate to the specimen carrier. Because this transmission means moves parallel to the principal axis, none of the components of the device are required to swing laterally about a tilt axis, so that only an exceedingly small space is required for the structure while at the same time making relatively large tilting of the specimen carrier possible.

3,444,368
CASSETTE HOLDER WITH MEANS FOR ATTACHMENT IN THE BUCKY SLOT OF AN X-RAY TABLE

Wayne Cosby, Dallas, Tex., assignor of one-half to Fred H. Dunn, Dallas, Tex.

Filed Oct. 21, 1965, Ser. No. 499,718
Int. Cl. A61b 6/04
U.S. Cl. 250—58 3 Claims

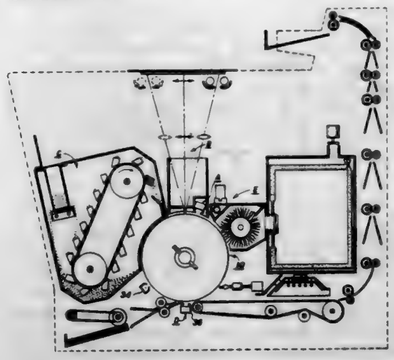


The present invention is directed to means for mounting a cassette holder to the edge of an X-ray table so that the cassette holder is above the upper surface of the X-ray table and can be moved along the length of the X-ray table.

3,444,369
METHOD AND APPARATUS FOR SELECTIVE CORONA TREATMENT OF TONER PARTICLES

Paul J. Malinaric, Penfield, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Oct. 11, 1966, Ser. No. 585,825
Int. Cl. G01n 21/34
U.S. Cl. 250—65 9 Claims



Method and apparatus for the reduction of background in transferred xerographic copy. A developed toner image on a photoconductive surface is subjected to a low level corona discharge of a polarity opposite the charge on the toner particles overlying the image areas. The corona discharge adjacent the image areas will be repelled by the like but higher charge pattern in the image areas of the photoconductive surface to thereby render image area toner uneffected. The corona discharge adjacent the non-image areas of the photoconductive surface will not be repelled and will thus convert the charge on the toner overlying the non-image areas to a polarity opposite that on the image area toner particles. This will permit the electrostatic transfer of either the image area toner or the non-image area toner to a backing sheet.

3,444,370
X-RAY FILM PACK WITH A FLEXIBLE ENVELOPE AND MEANS TO EVACUATE SAID ENVELOPE

Georges M. Boudin, Vincennes, and Annie Rabus, La Varenne, France, assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

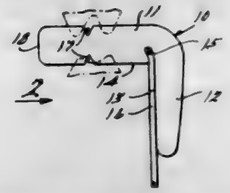
Filed Sept. 16, 1966, Ser. No. 580,085
Int. Cl. G01n 23/04; G03c 3/00
U.S. Cl. 250—68 5 Claims

An X-ray film pack comprising a sheet of sensitive film and an intensifying screen enclosed in face-to-face relation within a substantially air-tight, flexible envelope adapted to be evacuated through a perforation made in one wall of said envelope adjacent one edge thereof is provided with an aspiration-distributor device fixed to the inside of said envelope in embracing relation with the perforation through which the envelope is to be evacuated to assure a uniform and complete evacuation of gas from said envelope. The aspiration distributor device, in addition to being flexible, is permeable to the passage of gases but impermeable to the passage of actinic radiation to which the envelope is opaque.

3,444,371
DISPOSABLE ONE-PIECE DENTAL X-RAY FILM HOLDER

William F. Via, Jr., 464 Chalfonte, Grosse Pointe Farms, Mich. 48236

Continuation-in-part of application Ser. No. 519,706, Jan. 10, 1966. This application Mar. 3, 1966, Ser. No. 531,713
Int. Cl. G01n 23/04
U.S. Cl. 250—70 7 Claims



A disposable one-piece holder for a dental X-ray film is of L-shape, having a bite portion and a backup portion for the film disposed at right angles to each other. The holder is made from light soft material into which the teeth readily penetrate, providing a cheap unit which is disposable after use on a patient.

3,444,372
PHOTOGRAPHIC PHOSPHOR BELT

Edward G. De Hart, Cambridge, Mass., assignor to De Haart, Inc., Burlington, Mass., a corporation of Massachusetts

Continuation-in-part of application Ser. No. 334,710, Dec. 31, 1963, now Patent No. 3,273,477. This application Sept. 16, 1966, Ser. No. 580,053
Int. Cl. H01j 1/62
U.S. Cl. 250—71 6 Claims

A reuseable phosphor-coated film belt for use in a

camera of the kind disclosed in Patent 3,273,477 is shown and described. In one preferred embodiment the resolving power of the belt is improved over the phosphor films of the prior art by the orientation of crystals perpendicular to the film plane, and by the use of an infra-red-passing, actinic-reflecting binder. In another, the oriented



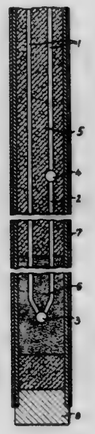
crystals spread on a thin Mylar film are backed by a thin evaporated film of aluminum, conforming to and partially surrounding the individual crystals. The aluminum surface is further backed by a base strip yielding a sandwich type tape which has a smooth protective tape at either side of the active phosphor.

3,444,373

APPARATUS AND METHOD FOR CONSTRUCTING APPARATUS FOR MEASUREMENTS OF NEUTRON FLUX

Walter Obrowski, Hanau, Karl-Heinz Börnig, Offenbach (Main), and Elmar Schrüfer, Langen, Germany, assignors to Licentia Patent-Verwaltungs-G.m.b.H., and Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany

Filed June 16, 1965, Ser. No. 464,519
Claims priority, application Germany, June 16, 1964, L 48,063
Int. Cl. G01t *3/00;* H01j *39/32*
U.S. Cl. 250—83.1 3 Claims



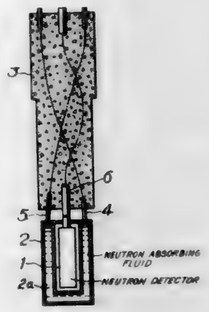
A neutron flux measuring device having a sheath made of heat conducting material filled partly with a neutron-sensitive and partly with a neutron-insensitive non-electrically conducting substance. Two thermoelements, one embedded in the neutron-sensitive substance the other in the insensitive substance are connected either in series or parallel and measure the amount of heat produced by the interaction of neutrons with the neutron-sensitive substance. The desired degree of packing density, at least of the neutron-sensitive material, may be obtained by drawing the device through a die to decrease the diameter of the sheath.

3,444,374

NEUTRON FLUX MEASURING DEVICE COMPRISING A DETECTOR SURROUNDED BY A DOUBLE-WALLED JACKET CONTAINING NEUTRON ABSORBING FLUID

Takehiko Kinoshita, Tokai-mura, Ibaragi-ken, and Tatsuo Yatsurugi, Mito-shi, Ibaragi-ken, Japan, assignors to Nihon Genshiryoku Kenkyujo, Tokyo, Japan, a corporation of Japan

Continuation of application Ser. No. 542,707, Mar. 30, 1966. This application May 29, 1967, Ser. No. 642,240
Int. Cl. G01t *3/00*
U.S. Cl. 250—83.1 2 Claims



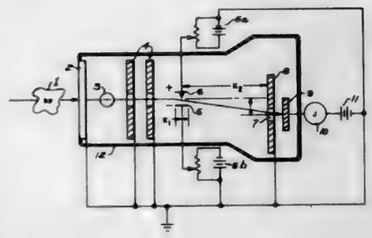
A neutron flux measuring apparatus comprising a gamma-compensated, parallel circular plate, boron trifluoride filled, ionization chamber type neutron detector. The detector is surrounded by a fluid-tight, double-walled jacket into which a neutron absorbing fluid is introduced. The fluid may be in liquid or gaseous form and the neutron absorbing substance in the fluid may be of varying concentrations.

3,444,375

PHOTOELECTRIC ENERGY SPECTROMETER

Robert C. Seamans, Jr., Deputy Administrator of the National Aeronautics and Space Administration, with respect to an invention of Randolph A. Becker, Altadena, Calif.

Filed July 27, 1966, Ser. No. 568,356
Int. Cl. G01t *1/16;* H01j *39/14*
U.S. Cl. 250—83.3 4 Claims



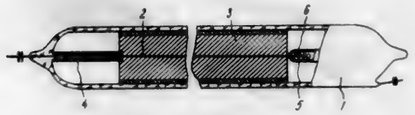
A photocathode emits electrons in response to the impingement of photons thereon. The velocity of the emitted electrons is determined by the frequency of the impinging radiation. The electrons pass through a collimating means and thereafter through a deflecting means. A discriminator comprising a plate having an "off axis" aperture permits electrons which are deflected to pass therethrough to a collecting target.

3,444,376

RADIOACTIVE RADIATION COUNTER TUBE WITH IMPROVED HIGH TEMPERATURE PROPERTIES

Simon Meerovich Perelman, Pervomaiskaja 28/24, Apt. 47; Isaak Aronovich Prager, Studencheskaja 28, Apt. 13; Anatoly Filippovich Tolmachev, Malenkovskaja ulitsa, 7, Apt. 45; David Lvovich Klebanov, Savvinskaja naberezhnaja 3, Apt. 136; and Jury Alexandrovich Gastev, kvartal 74, korpus 45, Apt. 59, all of Moscow, U.S.S.R.

Filed June 1, 1965, Ser. No. 460,449
Int. Cl. H01j *39/28;* G01t *1/16*
U.S. Cl. 250—83.6 2 Claims



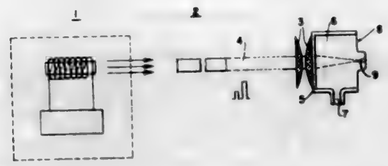
Radiation counter tube including elements with a work function of 3.5 electron-volts at operating temperature and separators having a TK–100 minimum of 475° C. and an envelope of 54% SiO_2, 18.5 Al_2O_3, 13.5% CaO, 8% BaO and 6% ZnO.

3,444,377

NEUTRON PULSE SOURCE

Heinrich Hora, Garching, and Benedikt Kronast, Munich, Germany, assignors to Institut für Plasmaphysik Gesellschaft mit beschrankter Haftung, Munich-Garching, Germany, a company of Germany

Filed Aug. 12, 1965, Ser. No. 480,251
Claims priority, application Germany, Aug. 12, 1964, J 26,383
Int. Cl. G21g *3/00*
U.S. Cl. 250—84.5 20 Claims



A neutron pulse source for producing very short neutron pulses of extremely high initial neutron flux densities. A given small volume containing a given density of heavy hydrogen isotopes in specified proportions in a hot plasma is heated with a laser beam pulse of a given amount of energy over a period of time. The nuclear reactions that result provide the desired neutron pulses.

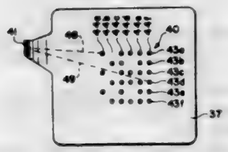
3,444,378

X-RAY TIMING DEVICE USING A LIGHT-CONDUCTING PADDLE WITH SPACED LIGHT-ADMITTING HOLES FOR UNINTERRUPTED LIGHT TRANSMISSION TO A DETECTOR

William G. Cibula, Chesterland, and Ronald Schuster, Mentor, Ohio, assignors, by mesne assignments, to Picker Corporation, White Plains, N.Y., a corporation of New York

Filed May 13, 1965, Ser. No. 455,480
Int. Cl. H05g *1/28*
U.S. Cl. 250—95 16 Claims

X-ray phototimer using a light-conducting paddle having a light-admitting portion. The light-admitting portion has a series of spaced, bottomed holes, the perimeter of each being defined by a closed curve. The spaced holes are preferably arranged in rows with certain of the rows



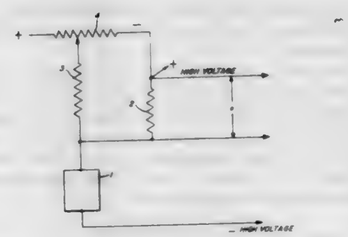
transverse to, and certain of the rows generally parallel to, the paths of light transmission from the holes to a spaced phototube used as a pickup for a phototiming circuit.

3,444,379

ELIMINATION OF DARK CURRENT EFFECTS IN PHOTOMULTIPLIER TUBES

Gustav Bergson, Jenkintown, Pa. (Cedarbrook Hill Apts. II, Apt. B-117, Wyncote, Pa. 19095)

Filed May 31, 1966, Ser. No. 554,194
Int. Cl. H01j *39/12*
U.S. Cl. 250—207 1 Claim



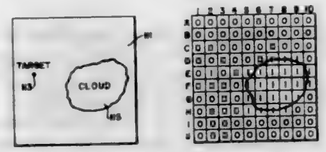
The ability of a photomultiplier tube to register low light levels is limited by the dark current through the tube and load resistor. The dark current is that current which flows in the absence of any light upon the tube. By connecting a high value resistor in series with a variable voltage of opposite polarity across the load resistor and adjusting the variable voltage until the voltage drop across the load resistor is virtually zero, a low level light reading is obtained.

3,444,380

ELECTRONIC BACKGROUND SUPPRESSION METHOD AND APPARATUS FOR A FIELD SCANNING SENSOR

James E. Webb, Administrator of the National Aeronautics and Space Administration with respect to an invention by Richard F. Maxwell, Jr., Baltimore, and Richard F. Higby, Severna Park, Md.

Filed Oct. 26, 1966, Ser. No. 590,145
Int. Cl. H01j *39/12*
U.S. Cl. 250—209 16 Claims



A method and apparatus for detecting a point source in a field of view which includes extended area bodies. The method uses the concept of dividing the field of view into a matrix in which fields of view are compared to determine the existence of a point source. The apparatus

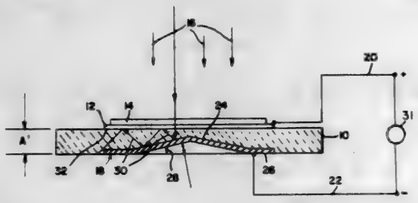
for carrying out this method includes a delay line used in conjunction with the comparison circuits to pass desired point target signals and inhibit signals generated by extended areas.

3,444,381

SILICON PHOTODIODE HAVING FOLDED ELECTRODE TO INCREASE LIGHT PATH LENGTH IN BODY OF DIODE

Paul H. Wendland, Los Angeles, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed May 22, 1967, Ser. No. 640,231
Int. Cl. H01j *39/12*
U.S. Cl. 250—211 9 Claims



The structure disclosed comprises a silicon photodiode useful to sense 1.06 micron radiation in an efficient and rapid manner.

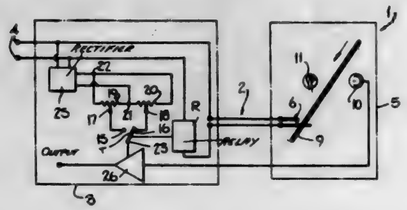
It is essentially a first electrode on one surface, a second electrode on the opposed surface with a readout device interconnecting the electrodes. The second electrode is deformed at the critical angle relative to the line of motion of incident radiation so that the radiation is totally internally reflected several times through the wafer. Fast and efficient response results.

3,444,382

SLUB-CATCHER MEASURING APPARATUS WITH AUTOMATIC SWITCHING FROM FIRST TO SECOND SENSITIVITY

Peter Dosch, Jona, Switzerland, assignor to Heberlein & Co. AG., Wattwil, St. Gall, Switzerland, a corporation of Switzerland

Filed Feb. 9, 1966, Ser. No. 526,233
Claims priority, application Switzerland, Mar. 17, 1965, 3,689/65
Int. Cl. G01n *21/30*
U.S. Cl. 250—219 6 Claims



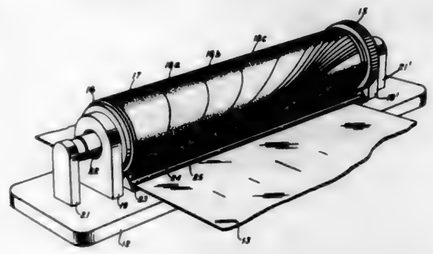
Apparatus detecting abnormal conditions in profile of cylindrical bodies of indefinite continuous length; sensing means including examining zone for detecting such conditions and means for varying sensitivity of same are provided; switch means controlling said last-mentioned means and operable upon insertion of cylindrical bodies to be examined into said examining zone to adjust said sensing means at one sensitivity for predetermined period of time and then at second sensitivity is also included and cooperates with alarm means responsive to said sensing means upon the occurrence of an abnormal condition.

3,444,383

OPTICAL MEASURING APPARATUS FOR DETERMINING INTERSPATIAL DISTANCES

Leon D. Harmon, Watchung, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York

Filed Aug. 15, 1966, Ser. No. 572,564
Int. Cl. G01n *21/30*
U.S. Cl. 250—219 4 Claims



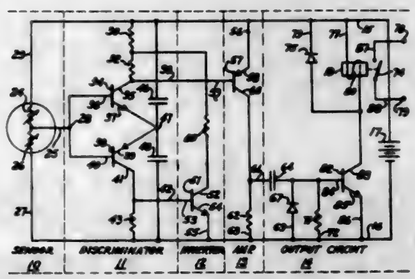
1. Optical apparatus comprising:
translucent cylindrical means enveloped by an opaque member having transparent portions disposed in a prescribed manner,
means for illuminating the interior of said cylindrical means,
means having a slit therein contiguous with said cylindrical means for allowing the passage of a plurality of discrete spatially related light rays from the interior of said cylindrical means through the intersectional areas of the transparent portions of said opaque member and said slit,
and means for rotating said cylindrical means to effect a change in the spatial relationship of said light rays in order to determine the basic interspatial separation of visual indicia upon which said light rays impinge.

3,444,384

MOTION SELECTOR USING RATIO OF RESPONSES OF TWO PHOTOELECTRIC CELLS

Geza E. Horeczky, 661 Via Santa Ynez, Pacific Palisades, Calif. 90272

Filed Nov. 7, 1966, Ser. No. 592,407
Int. Cl. H01j *39/12*
U.S. Cl. 250—221 12 Claims



This invention relates to circuitry and associated apparatus for detecting changes in conditions in a field of observation. A sensor having a plurality of radiation-responsive members responds to a change in the ratio of

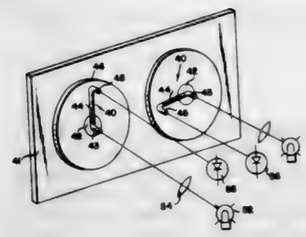
radiation impinging on the radiation-responsive members and controls associated circuitry to operate a load device. Focusing means is provided for defining the field of observation from which radiation may impinge the sensor, whereby when an object moves through the field of observation a change in the ratio of the impinging radiation on the radiation-responsive members occurs. The circuitry includes a discriminator circuit which responds to a change in the ratio of the electrical characteristics of the radiation-responsive members to produce an output signal. The circuitry is impervious to changes in ambient radiation which do not affect the ratio of electrical characteristics of the radiation-responsive members, such as might be caused by nightfall. A phase inverter may be provided to invert output signals of one polarity from the discriminator circuit so that all output signals are of like polarity. A switching means may be provided for controlling suitable indicating and/or control devices.

3,444,385

LIGHT GUIDE MOVABLE ON CONVEYOR FOR CODING

Edgar H. Paglee, Bethesda, Md., assignor, by mesne assignments, to Automated Handling Systems Inc., Washington, D.C., a corporation of the District of Columbia

Filed Apr. 28, 1966, Ser. No. 546,004
Int. Cl. H01j *5/16, 39/12*; G02b *5/14*
U.S. Cl. 250—227 10 Claims



Optical coding apparatus for materials handling conveyors having light sources and sensors mounted along tracks and having repositionable light transmitting bodies mounted on moving articles on the conveyor for selectively completing an optical circuit to indicate presence near a light source and sensor of certain articles are described herein.

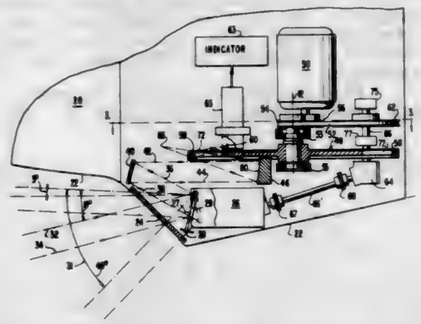
3,444,386

ROTARY SCANNER IMAGING DEVICE WITH MIRRORS MOUNTED THEREIN FOR REFLECTING RADIATION ENERGY TO PHOTODETECTOR MEANS

Henri B. Diamant, State College, Pa., assignor to HRB-Singer, Inc., State College, Pa., a corporation of Delaware

Filed Sept. 29, 1966, Ser. No. 582,947
Int. Cl. H01j *3/16*
U.S. Cl. 250—236 10 Claims

1. A mechanical imaging device operative in any spectral region comprising in combination:
carsousel scanning apparatus comprising a substantially circular plate member having a center axis and a plurality of substantially equally spaced apertures located proximate to the periphery of said plate member and first reflector means located adjacent each of said plurality of apertures for reflecting spectral energy inwardly of said periphery when each said first reflector means intersects a spectral path;
motor means coupled to said circular plate member for providing rotation thereof about said center axis;
at least one photodetector element selectively located adjacent said circular plate member for receiving spectral energy reflected from said first reflector means for providing a light modulated electrical signal output when said carousel scanning apparatus is rotated about said center axis;



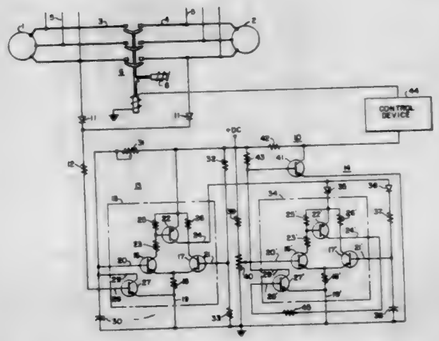
second reflector means having a predetermined contoured reflcting surface located adjacent said circular plate member on the opposite side of said plate member from said at least one photodetector element for directing spectral energy toward said first reflector means through said plurality of apertures, the carousel scanning apparatus scanning said second reflector means thereby upon rotation about said center axis; and
third reflector means directed toward an object to be scanned and being selectively located with respect to said second reflector means to translate a field of view of said object thereto such that said second reflector means and said third reflector means define said spectral path.

3,444,387

AUTOMATIC PARALLELING SYSTEM

William W. Billings and Wendell Calfee, Lima, Ohio, assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

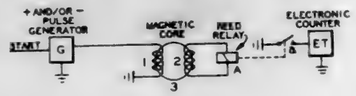
Filed June 20, 1967, Ser. No. 647,446
Int. Cl. H02j *1/00, 3/38*
U.S. Cl. 307—87 8 Claims



A static automatic paralleling system for controlling the connection of an alternating current generator to an energized line for operation in parallel with other generators. Superposed half-wave voltages of the generator

and the line are applied to a phase difference sensing circuit which provides signals to a frequency difference sensing circuit to obtain a final output signal when the phase difference and frequency difference between the generator and line are within predetermined limits. The final output signal controls the generator circuit breaker.
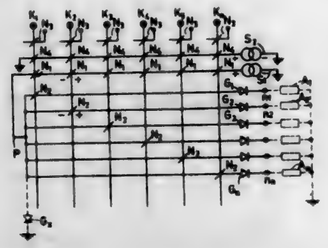
3,444,388
PULSE TRANSFORMER COUNTING CIRCUIT
Pieter David Cornelis Reefman, The Hague, Netherlands, assignor to De Staat der Nederlanden, Ten Deze Vertegenwoordigd Door de Directeur-Generaal der Posterijen, Telegrafie en Telefonie, The Hague, Netherlands
Filed Dec. 24, 1964, Ser. No. 420,989
Claims priority, application Netherlands, Dec. 31, 1963, 302,796
Int. H01f *27/42*
U.S. Cl. 307—88 **10 Claims**



An apparatus for transmitting information by means of a material having a practically rectangular hysteresis loop as a core material which acts both as a memory and a transformer, the core being provided with a winding to which pulses are supplied, and from which impulses are detected and/or dissipated. The total volt-second content of the hysteresis loop between the two saturated states is divided into a whole number of parts.

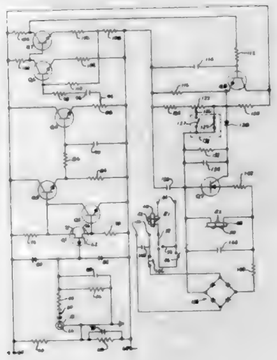
Thus the method of operating the apparatus of this invention comprises reading-out a multistable core by using the core as a transformer connected to a dissipating element.

3,444,389
MAGNETIC CORE COMMUTATOR CIRCUIT
Peter Blume, Hamburg-Lurup, Germany, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Continuation of application Ser. No. 413,914, Nov. 25, 1964. This application Apr. 4, 1966, Ser. No. 539,942
Claims priority, application Germany, Jan. 30, 1964, P 33,495
Int. Cl. H03k *17/80*
U.S. Cl. 307—88 **5 Claims**



1. A commutator circuit comprising a plurality of substantially rectangular hysteresis loop magnetic cores each having, readout, output and input windings coupled thereto, each of said cores being switchable from its original remanent condition in response to the presence of a signal on said input winding, means for serially connecting said readout windings between a first pulse source and one end of each of said output windings, a plurality of rectifiers, each of said rectifiers interconnecting the other end of said output winding to a load means, said first pulse source producing a pulse having a duration less than that required to restore the original remanent state of said cores, each of said cores including a further winding coupled thereto, and means for serially connecting said further windings to a second pulse source, said second pulse source producing a pulse having a duration such that the total duration of said first and second pulse source pulses is sufficient to restore the original remanent state of any of said cores.

3,444,390
PRESS IMPACT SENSOR
Victor S. Breidenbach and Patrick B. Close, Dayton, Ohio, assignors to Hyde Park Electronics, Inc., Dayton, Ohio, a corporation of Ohio
Filed Jan. 12, 1968, Ser. No. 697,496
Int. Cl. H01h *35/14*
U.S. Cl. 307—116 **13 Claims**

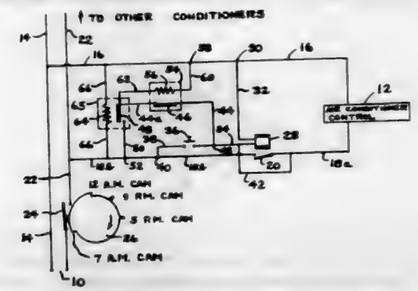


The operation of the tooling used in a press is continuously monitored using a piezoelectric transducer so mounted as to receive successive accelerating disturbances produced by operation of the tooling. The piezoelectric transducer has a resonant frequency of its own and during current and voltage amplification of the signal produced by the transducer, the signal is repeatedly filtered to suppress the resonant frequency signal of the transducer, retaining only low frequency signals produced by the transduced in response to operation of the press tooling. The transducer output is calibrated to an operating condition known to be proper. A sensing circuit actuated only by a signal larger than those encountered upon calibrating the signal output during proper operation deenergizes a control relay which, when the tooling is operating properly, restrains a press shut-off mechanism.

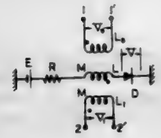
3,444,391
ELECTRICAL CONTROL OF ROOM AIR CONDITIONERS
James Ray Smith, Forest Park, Ohio, assignor to American Standard Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 20, 1967, Ser. No. 692,063
Int. Cl. H01h *7/00, 43/00*
U.S. Cl. 307—141 **7 Claims**

This invention proposes a control for room air conditioners which causes all conditioners in the system to be turned off at the end of a normal day (e.g. 5 p.m.), which permits any selected conditioner to be manually turned on during the early evening hours (e.g. 5 p.m. until midnight), which causes all conditioners to be automatically turned off at a predetermined night hour (e.g. midnight), and which causes all conditioners to be automatically turned on at the start of a normal day (e.g. 7 a.m.).

The control includes a turn-on relay for each conditioner, and two separate energizer lines for each relay. One energizer line includes a manual switch for actuation during the early evening hours. The other energizer line includes two time delay relays arranged to operate only at the start of a normal day.



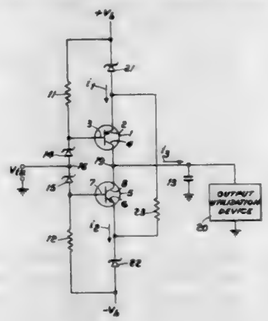
3,444,392
BURST INPUT REACTANCE COUPLED ASYNCHRONOUS LOGIC CIRCUIT
Yasuo Komamiya, Yokohama, and Takeji Sugiyama, Tokyo, Japan, assignors to Agency of Industrial Science and Technology, Tokyo, Japan, a governmental agency of Japan
Continuation-in-part of application Ser. No. 116,815, June 13, 1961. This application July 21, 1965, Ser. No. 482,015
Claims priority, application Japan, June 18, 1960, 35/28,232
Int. Cl. H03k *19/08, 19/10, 3/26*
U.S. Cl. 307—206 **8 Claims**



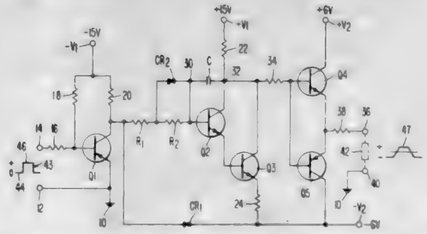
An asynchronous electronic logic circuit comprising a two terminal element having an N-type current-voltage characteristic, a resistor, an inductance, and a D.C. source connected in series such that the circuit has a monostable operating point. A reactance input means is operatively connected to the circuit. The two terminal element operates on a stable point of the N-type characteristic curve and means are provided for supplying an input signal in the form of a burst of electrical oscillations representing one binary condition and the absence thereof representing the other binary condition, the input signal causing the operating point of the two terminal element to be shifted along its N-type characteristic curve so that the circuit oscillates and transmits an output signal, whereas when no input signal is received, the two terminal element returns to its stable point no oscillation being generated and the circuit transmitting no output signal.

3,444,393
ELECTRONIC INTEGRATOR CIRCUITS
Marvin L. Sassler, Preakness, N.J., assignor to International Telephone and Telegraph Corporation, a corporation of Delaware
Filed Mar. 31, 1966, Ser. No. 539,111
Int. Cl. G06g *7/38*
U.S. Cl. 307—229 **2 Claims**

An integrating circuit wherein the collectors of two complementary transistors are connected serially, the power for said transistors being provided by two equal power supplies of opposite polarity, one connected to each emitter via a parallel combination of a capacitor and a resistor. An input voltage is applied to the bases of both said transistors simultaneously, and a capacitor is connected to the junction of said collectors, the charge stored on said capacitor being proportional to the time integral of said input voltage. In another embodiment of the invention the power supplies are connected to the transistors by Zener diodes rather than the parallel combination of capacitors and resistors, and a resistor is connected between the emitters.



3,444,394
RAMP-TYPE WAVEFORM GENERATOR
L. V. Colvson, Philadelphia, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Apr. 7, 1966, Ser. No. 541,000
Int. Cl. H03k *5/04*
U.S. Cl. 307—261 **2 Claims**

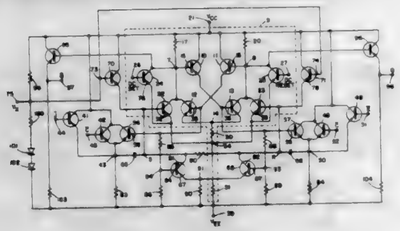


An electrical network responsive to a rectangular input waveform includes a capacitor which is charged in the process of producing the leading edge of an output waveform and is discharged in the process of producing the trailing edge of the output waveform. By varying the times that it takes the waveforms to move from one level to another and by varying the duration of the input waveform, various output waveforms including rectangular, sawtooth, trapezoidal and triangular waveforms may be obtained. The times that it takes the output waveform to move from one level to another are varied by varying the value of the capacitor and certain resistors in accordance with stated formulas.

3,444,395
J-K FLIP-FLOP
Philip B. Foster, Phoenix, Richard A. Gissel, Tempe, and Walter C. Seelbach, Scottsdale, Ariz., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed June 23, 1966, Ser. No. 559,820
Int. Cl. H03k *3/26*
U.S. Cl. 307—291 **8 Claims**

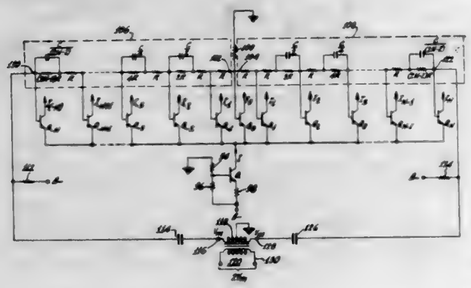
A J-K flip-flop having a set-reset bistable element including set and reset input terminals for receiving binary

logic signals. A first capacitor couples binary logic signals to the set input terminal and a second capacitor couples binary signals to the reset input terminal. These first and second capacitors charge to different levels of voltage as the set-reset bistable element is switched from one con-



ductive state to another. First and second current sources are connected respectively to the first and second capacitors and these current sources are biased by internal flip-flop voltages to rapidly discharge the first and second capacitors during J-K operation and thereby greatly increase the switching speed of the circuit.

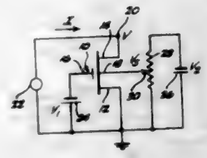
3,444,396
SIGNAL TRANSLATING CIRCUIT PROVIDING SIGNAL-CONTROLLED TIME DELAY
Edward C. Fox, Trenton, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Mar. 24, 1965, Ser. No. 442,370
Int. Cl. H03k *17/28*
U.S. Cl. 307—293 10 Claims



An electronic time delay modulator includes a multitap delay line and circuitry for scanning the taps of the delay line in accordance with a complex control signal. The scanning is carried out by electronic analog commutator means which fades rather than switches from one tap of the delay line to the next. The analog commutator comprises electronic circuitry which is controlled by a complex electrical control signal to effect scanning of the taps of the delay line in a manner that a signal applied to the delay line is smoothly modulated in relative delay as a function of the complex electrical control signal.

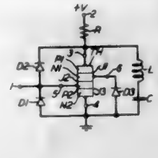
3,444,397
VOLTAGE ADJUSTABLE BREAKDOWN DIODE EMPLOYING METAL OXIDE SILICON FIELD EFFECT TRANSISTOR
Vernon W. Lym, Torrance, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed July 21, 1966, Ser. No. 566,883
Int. Cl. H03k *3/26*

In the disclosed breakdown device there is applied between the source and drain electrodes of a metal oxide silicon field effect transistor a reverse voltage of a magnitude sufficient to estabish voltage breakdown in the field effect transistor between the source and drain electrodes. A reverse bias voltage is applied between the gate and source electrodes, and a variable bias voltage of the same polarity



as the gate-source bias voltage but of a magnitude less than that of the gate-source voltage is applied between the substrate and source electrodes to control the source-drain voltage at which the breakdown occurs.

3,444,398
THYRISTOR SWITCH UTILIZING DIODES TO IMPROVE RECOVERY TIME
Dennis V. Brockway, Rockaway, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed May 10, 1966, Ser. No. 549,030
Int. Cl. H03k *3/26*
U.S. Cl. 307—305 15 Claims



1. A switch circuit comprising at least one thyristor having four layers forming three junctions between said layers, the middle junction existing between said second and third layers having an inherent reverse recovery time, an anode terminal connected to the first layer, an anode gate terminal connected to the second layer, a gate terminal connected to the third layer, a cathode terminal connected to the fourth layer, a turn-off circuit connected in series with said anode and cathode terminals capable of driving a reverse current from said cathode terminal to said anode terminal, a first diode connected between said cathode and gate terminals, a second diode connected between said gate and anode terminals, and a third diode connected between said cathode and anode gate terminals, the reverse recovery time of said middle junction being less than that of said first diode and greater than that of said second and third diodes.

3,444,399
TEMPERATURE CONTROLLED ELECTRONIC DEVICES
Wesley N. Jones, Severna Park, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 24, 1965, Ser. No. 489,953
Int. Cl. H01h *37/32*
U.S. Cl. 307—310 11 Claims

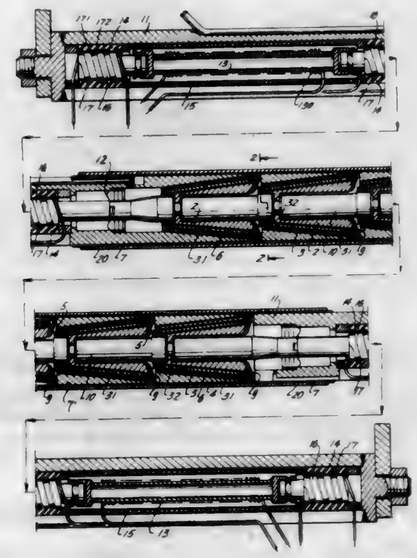
Positive Temperature Coefficient (PTC) thermistors are utilized to create an artificial environment for an electronic device to operate within. Cup-shaped PTC thermistor members are joined together to form environmental chambers in which electronic devices operate in an artificial environment created by the members. A Nega-

tive Temperature Coefficient (NTC) thermistor is used with two PTC thermistors to form a switch. Additionally, an NTC thermistor controls the resistance of a first PTC thermistor in close thermal transfer relationship with a



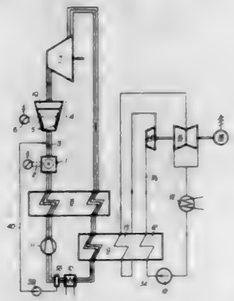
second PTC thermistor, the variation of the resistance of the first PTC thermistor regulating the current flow through an electrical load in a series circuit relationship with the first PTC thermistor.

3,444,400
THERMIONIC CONVERTER
Karl Janner and Dietrich Budnick, Erlangen, Germany, assignors to Siemens Aktiengesellschaft, Erlangen, Germany, a corporation of Germany
Filed Oct. 22, 1965, Ser. No. 500,870
Claims priority, application Germany, Nov. 25, 1964, S 94,320
Int. Cl. H02k *7/00*
U.S. Cl. 310—4 19 Claims



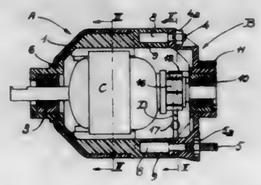
1. Converter fuel element for nuclear reactors comprising a plurality of axially aligned thermionic diodes electrically connected in series, each of said diodes including an annular emitter electrode and an annular collector electrode coaxially surrounding and radially spaced from one another, said electrodes being formed with mutually opposed matching conical surfaces, the emitter electrodes of said diodes containing a supply of nuclear fuel for the reactor and being insulatingly connected to one another, said emitter electrodes as a unit and said collector electrodes being relatively displaceable in their axial direction so as to adjust and correct the spacing between said emitter and said collector electrodes.

3,444,401
METHOD AND ARRANGEMENT FOR GENERATING ENERGY FROM NUCLEAR FISSION IN A HIGH TEMPERATURE REACTOR
Paul Gilli, Vienna, Austria, assignor to Waagner-Biro Aktiengesellschaft, Vienna, Austria
Filed June 26, 1967, Ser. No. 648,637
Claims priority, application Austria, June 27, 1966, A 6,122/66
Int. Cl. G21d *7/02*
U.S. Cl. 310—11 16 Claims



The heated cooling gases from a high temperature reactor are used as working gas in a magneto-gas-dynamic generator and further in a gas turbine, and/or a steam generator providing steam for a steam turbine and possibly a regenerative heat exchanger. Different ways of constructing the core of the high temperature reactor with either thermionic or thermo-electric elements are shown.

3,444,402
SMALL ELECTRIC MOTORS HAVING PERMANENT MAGNETS
Gaston Cartier, Ave. de Margencel, Cluses, Haute-Savoie, France
Filed Dec. 20, 1965, Ser. No. 515,040
Claims priority, application France, Dec. 21, 1964, 45,422; June 10, 1965, 46,095
Int. Cl. H02k *1/04*
U.S. Cl. 310—43 14 Claims

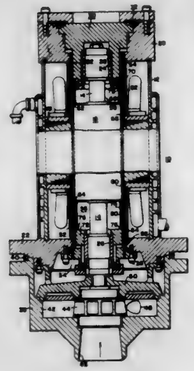


An electric motor having a rotor, and having a stator; said stator comprising permanently magnetized magnetic pole pieces; an open-ended plastic moulded shell housing said stator; said shell having a bearing for said rotor, a cap member adapted to close the open end of said shell and having a second bearing for said rotor, a metal shell housing said magnetic pole pieces, and said open-ended plastic shell being fixedly united to and around said metal shell and said magnetic pole pieces.

3,444,403
SUBMERSIBLE MOTOR WITH STATOR LINER SUPPORT
Edward A. Macha, Monroeville, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 31, 1966, Ser. No. 553,785
Int. Cl. H02k *5/10*
U.S. Cl. 310—86 2 Claims

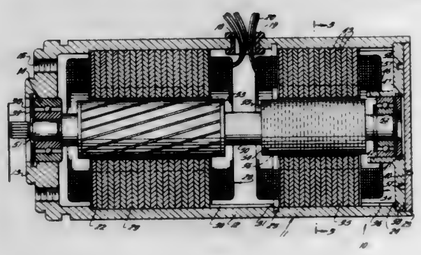
A hermetically enclosed motor having an annular flange

telescopically disposed within each end portion of a stator enclosure can, the annular flanges extending toward and axially spaced from the end of the rotor, whereby the



flanges and the rotor are substantially coextensive with the can for supporting the can against substantial radial inward contraction.

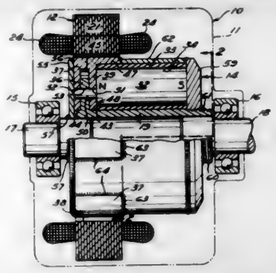
3,444,404
SERVOMOTOR GENERATOR
Albert Diamond, Plainview, N.Y., assignor to Vernitron Corporation, Farmingdale, N.Y., a corporation of New York
Filed July 17, 1967, Ser. No. 653,920
Int. Cl. H02k *47/04, 47/14, 47/20*
U.S. Cl. 310—113 **6 Claims**



A servomotor-generator combination having a cylindrical housing closed at the motor end and having a null adjusting closure plate at the generator end. A shaft extends through the motor and generator and is journalled in bearings at each housing end. An electrically conductive nonmagnetic sleeve is fixed to a laminated magnetic core on the shaft within the generator stator.

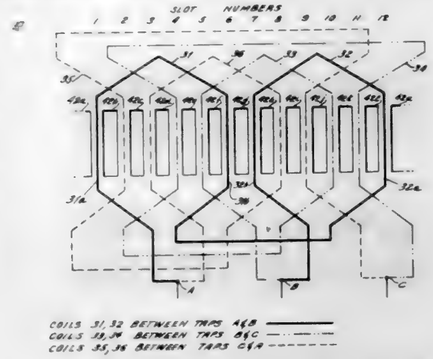
3,444,405
PERMANENT MAGNET GENERATOR
James N. Ellis, Palos Verdes Peninsula, Calif., assignor to Lear Siegler, Inc., Santa Monica, Calif., a corporation of Delaware
Filed June 2, 1967, Ser. No. 643,177
Int. Cl. H02k *21/16*
U.S. Cl. 310—156 **11 Claims**

A generator in which the flux field is provided by permanent magnets in the rotor with the axes of the magnets parallel to the rotor shaft. The rotor pole faces are provided by pole pieces which have radial portions in contact with ends of the magnets and circumferential pole



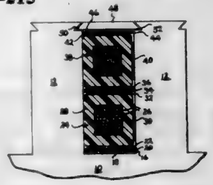
face portions. An annular stator carrying conventional output windings is employed, the air gap between the rotor pole face portions and the stator being radial.

3,444,406
TWELVE-SLOT, SIX COIL, SHORT-CHORDED, SINGLE-LAYER ARMATURE WINDING FOR BRUSHLESS DC MOTOR
Eugene W. Aha, Bristol, Tenn., assignor to Sperry Rand Corporation, Bristol, Tenn., a corporation of Delaware
Filed Apr. 28, 1966, Ser. No. 546,040
Int. Cl. H02h *29/02*
U.S. Cl. 310—195 **5 Claims**



A brushless D.C. motor is constructed with a single layer armature winding divided into three delta connected sections, with each section consisting of two concentric coils connected in series. The armature iron is divided into twelve poles and each coil spans five of these poles.

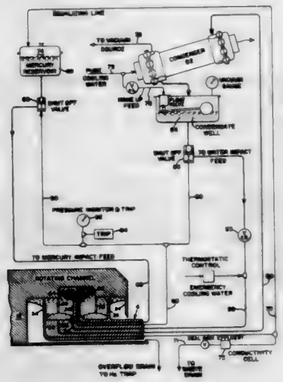
3,444,407
RIGID CONDUCTOR BARS IN DYNAMOELECTRIC MACHINE SLOTS
Edward S. Yates, Fultonville, N.Y., assignor to General Electric Company, a corporation of New York
Filed July 20, 1966, Ser. No. 566,623
Int. Cl. H02k *3/36, 3/12*
U.S. Cl. 310—215 **3 Claims**



Insulated conductor bars are retained in the slots by resilient supporting means bearing against the conductor

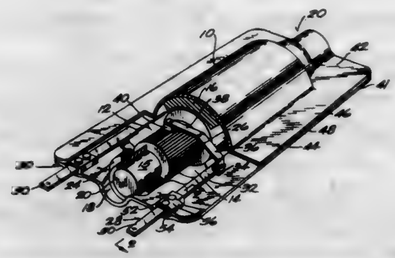
insulation on at least three sides of each bar. The supporting means include an adhesive elastomeric material. The elastomeric material is disposed between the bottom of the slot and the bottom insulated conductor, between the bottom and top conductors, between the top conductor and the wedge, and between one side of each conductor and the corresponding side of the slot. A fillet of elastomeric material is advantageously disposed at the intersection of the conductors and the core slot at the top, in the case where the conductors are positioned vertically, to provide an additional resilient restraint against dropping of the conductors in the slots.

3,444,408
LIQUID METAL ELECTRICAL COLLECTOR
Gerd E. Krulls, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed Aug. 25, 1967, Ser. No. 663,286
Int. Cl. H02k *9/28*
U.S. Cl. 310—227 **7 Claims**



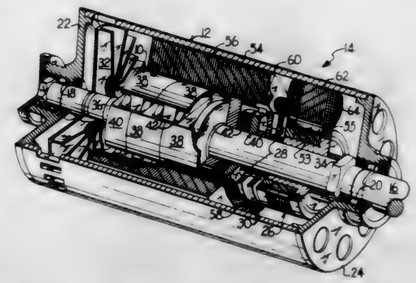
Electrical collector using liquid metal to conduct electricity between rotating and stationary member in dynamoelectric machine where liquid metal is isolated from atmosphere by a liquid coolant and seal.

3,444,409
BRUSH ASSEMBLY FOR DYNAMOELECTRIC MACHINE
Edward Latta, Owosso, Edmund J. Godin, Detroit, and Jerome Phillips, Owosso, Mich., assignors to Controls Company of America, Melrose Park, Ill., a corporation of Delaware
Filed Nov. 9, 1967, Ser. No. 681,736
Int. Cl. H02k *13/10*
U.S. Cl. 310—239 **12 Claims**



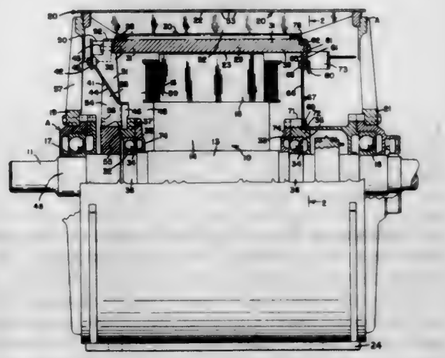
A brush assembly construction wherein a brush is supported by a spring arm which is attached to or is a part of a relatively rigid arm. The brush assembly is supported within an electric motor housing by clamping the rigid arm in a seam in the housing, the seam being defined by abutting edges of the motor housing sections. The relatively rigid arm is electrically insulated from the housing and has an interlocking engagement with the motor housing at the seam. In a more specific aspect of the disclosure, a circuit breaker is connected between the rigid arm and spring arm to complete an electrical circuit to the motor brush and is operative, in response to a change in a motor condition, to open the motor brush circuit.

3,444,410
ALTERNATOR WITH MULTIPLE COIL ROTATING FIELD
James L. Crawford, Chillicothe, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Mar. 2, 1967, Ser. No. 620,175
Int. Cl. H02h *1/22*
U.S. Cl. 310—262 **5 Claims**



High speed alternator apparatus having a Lundell configuration of a steel core concentrically disposed on a shaft with internal field coils and further having a selectable plurality of field coils and associated rotor pole pieces integrally disposed about the common rotor shaft to provide a multiplicity of flux paths through the pole pieces to increase the usable field flux for a given amount of field coil excitation.

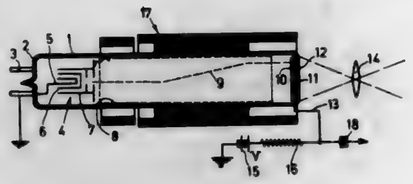
3,444,411
EXPANSION COMPENSATING ROTOR SUPPORT
Wesley O. Sauby, Minneapolis, Minn., assignor to Electric Machinery Mfg. Company, Minneapolis, Minn., a corporation of Minnesota
Filed July 11, 1966, Ser. No. 564,243
Int. Cl. H02k *1/22*
U.S. Cl. 310—266 **5 Claims**



An expansion compensating rotor support for compensating for both radial and axial expansion of the rotor

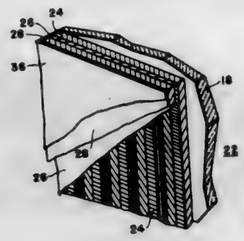
and comprising an annulus attached to the rotor at circumferentially-spaced localities to form beams therebetween and a laminated disc-like structure connected to a bearing for the rotor and to said annulus at localities intermediate the points of attachment of the annulus to the rotor to compensate for axial expansion of the rotor.

3,444,412
PHOTO-RESPONSIVE DEVICE HAVING PHOTOSENSITIVE PbO LAYER WITH PORTIONS OF DIFFERENT CONDUCTIVITY TYPES
Edward Fokko de Haan, Paulus Philippus Maria Schampers, and Johannes Hendrikus Nicolaas van Vucht, all of Emmasingel, Eindhoven, Netherlands
Original application Mar. 10, 1964, Ser. No. 350,713, now Patent No. 3,372,056, dated Mar. 5, 1968. Divided and this application Oct. 18, 1967, Ser. No. 676,198
Claims priority, application Netherlands, Mar. 12, 1963, 290,119
Int. Cl. H01j *31/38*
U.S. Cl. 313—65 **28 Claims**



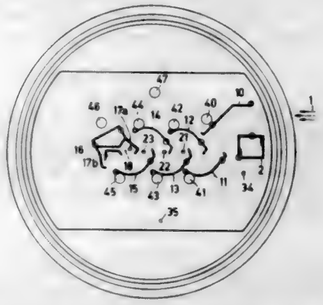
A photo-responsive device, in particular a television camera tube, employing a photo-sensitive PbO layer the major portion of which, at least 4μ in thickness in the direction of current flow, being intrinsically conductive, the layer also having a relatively thin portion of p-type conductivity adjoining a negative terminal connection.

3,444,413
CATHODE RAY TUBE PROVIDED WITH A CONTINUOUS PHOSPHOR LAYER FOR PRODUCING INDEXING SIGNALS
Ronald T. Harrold, Murrysville, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 28, 1966, Ser. No. 561,280
Int. Cl. H01j *29/18*
U.S. Cl. 313—92 **5 Claims**



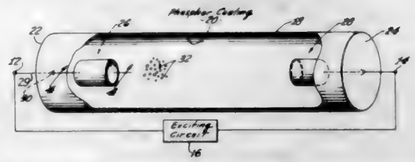
A cathode ray tube in which an index signal generating system is provided. The screen structure of the cathode ray tube consists of a display phosphor with a continuous layer of a sensing material disposed on the back surface of the display phosphor. Certain areas of the sensing layer are modified to either activate or de-activate the area to provide a sensing layer with an active sensing pattern.

3,444,414
PHOTOMULTIPLIER
Michel Betoule, Rene Petit, and Jean Claude ReBuffie, Correze, France, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 4, 1967, Ser. No. 607,314
Claims priority, application France, Jan. 17, 1966, 46,075
Int. Cl. H01j *39/12*
U.S. Cl. 313—96 **4 Claims**



A high-current fast-response multiplier employing an anode having a small aperture therein positioned between the last two dynodes and in front of the last dynode.

3,444,415
FLUORESCENT DISCHARGE LAMP
Clifford D. Skirvin, Pomona, Calif., assignor to Microdot, Inc., South Pasadena, Calif., a corporation of California
Filed Dec. 10, 1965, Ser. No. 512,948
Int. Cl. H01j *1/62*
U.S. Cl. 313—109 **16 Claims**

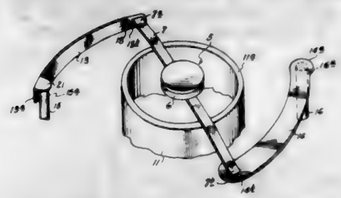


This invention relates to a system for producing luminescence in fluorescent tubes. The invention includes gases in the tubes for producing ions when energized. The invention also includes a phosphor on the walls of the tube for emitting photons to provide luminescence. The invention further includes a gas such as ammonia in the tube for causing the photons to be produced substantially only in a range of frequencies for producing luminescence. The invention also includes a second gas such as iodine for facilitating the production of luminescence by the photons.

3,444,416
ELECTRON EMITTING DEVICE AND METHOD OF ASSEMBLING THE SAME
Susumu Yoshida, Tokyo, Takamitsu Tsuboi, Atsugi-shi, and Kiichi Ueno, Fujisawa-shi, Japan, assignors to Sony Corporation, Tokyo, Japan, a corporation of Japan
Filed Sept. 6, 1967, Ser. No. 665,847
Claims priority, application Japan, Sept. 10, 1966, 41/59,779
Int. Cl. H01j *1/94, 19/48*
U.S. Cl. 313—270 **13 Claims**

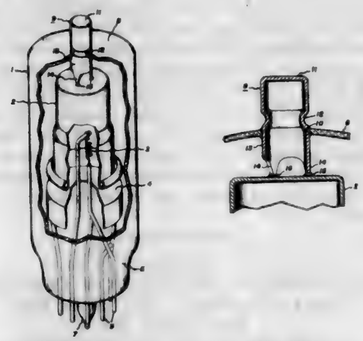
In an electron emitting device, an insulating member has an annular support ledge projecting from a face thereof, an elongated heater element preferably of a Ni-Mo-Fe alloy extends diametrically across the support ledge and carries a thermion emitting member substantially centered with respect to the ledge, leaf springs are

mounted at one end at locations on the insulating member that are outside the ledge and have their other ends secured to the heater element ends, one of the springs is resiliently flexible parallel to the plane of the edge surface of the ledge to longitudinally tension the heater element and the other spring is resiliently flexible in



directions generally normal to such plane to hold the heater element against the ledge, and the insulating member with the heater element thus mounted thereon is fixed in a grid structure having a central aperture in an end wall thereof with the thermion emitting member at a predetermined, invariable distance from such aperture.

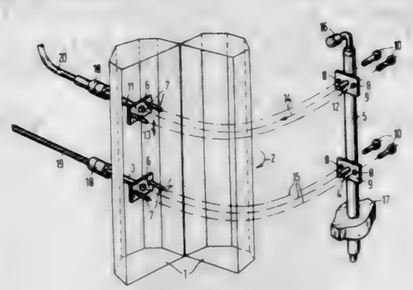
3,444,417
ELECTRIC DISCHARGE DEVICE HAVING A TUBULAR ANODE LEAD TERMINATING IN A PLURALITY OF SPACED PROJECTIONS FORMED INTEGRALLY WITH SAID LEAD AND SECURED TO THE ANODE BY PERCUSSIVE WELDS
Joe F. Stephens, Owensboro, Ky., assignor to General Electric Company, a corporation of New York
Filed Jan. 12, 1967, Ser. No. 608,825
Int. Cl. H01j *5/52*
U.S. Cl. 313—331 **1 Claim**



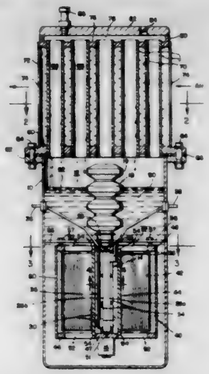
An electric discharge device, particularly of the rectifier type, having an improved tubular anode lead sealed in the dome of the envelope. The improved lead has a closed end exterior of the envelope and an open end within the envelope. The open end terminates in a plurality of spaced projections, preferably three, which are electrically and mechanically rigidly secured to the anode by percussive welds.

3,444,418
FREQUENCY MODULATION TUBE WITH A SURROUNDING MAGNETIC SYSTEM
Herbert Sarnezki and Eberhard Ade, Munich, Germany, assignors to Siemens Aktiengesellschaft, Munich, Germany, a corporation of Germany
Filed Aug. 5, 1966, Ser. No. 570,659
Claims priority, application Germany, Aug. 9, 1965, S 98,738
Int. Cl. H01j *25/34*
U.S. Cl. 315—3.5 **12 Claims**

A velocity-modulated tube having a surrounding magnetic system which is constructed in the form of two mirror-image halves, and at least one high-frequency connection line rigidly mounted in the magnetic system, which simultaneously supports and centers the tube structure within such magnetic system and which may also carry means for effecting other electrical connections to such a tube structure.

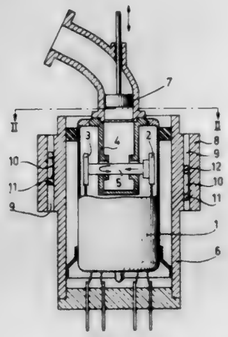


3,444,419
EVAPORATIVELY COOLED TRAVELING-WAVE TUBE
James W. Hansen, Los Angeles, and Leonard T. King, Hermosa Beach, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Feb. 21, 1967, Ser. No. 617,684
Int. Cl. H01j *25/34*
U.S. Cl. 315—3.5 **10 Claims**



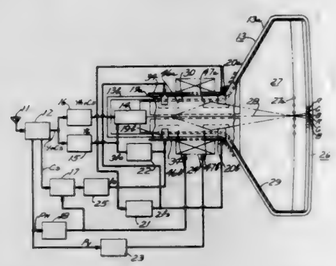
The disclosed assembly includes a hermetically sealed chamber in which a traveling-wave tube is vertically mounted, with a fluid coolant normally existing in the liquid state disposed in the chamber in contact with the electron gun, collector, focusing arrangement, and extended outer surface of an aligning and heat-conveying encasing assembly for the slow-wave structure of the tube. Boiling of the liquid coolant due to heat generated by the tube, causing coolant movement along tube surfaces, and subsequent condensation of the evaporated coolant in a plurality of air-cooled condenser tubes extending upwardly from the chamber enables heat removal from the tube.

3,444,420
METHOD OF ADJUSTING POWER OUTPUT OF A REFLEX KLYSTRON EMPLOYING MOVABLE PERMANENT MAGNETS AND A REFLEX KLYSTRON WITH MOVABLE MAGNETS FOR ADJUSTING POWER OUTPUT
Jan Willem Rommerts and Thomas Jan Westerhof, Emmasingel, Eindhoven, Netherlands, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 18, 1966, Ser. No. 543,119
Claims priority, application Netherlands, Apr. 23, 1965, 6505165
Int. Cl. H01j 25/22
U.S. Cl. 315—5.18 6 Claims



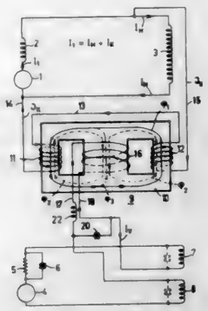
A reflex klystron is provided with permanent magnets movable in external guides to adjust the klystron for maximum power output.

3,444,421
CATHODE RAY TUBE
Satoshi Shimada and Akio Ohkoshi, Tokyo, Japan, assignors to Sony Corporation, Tokyo, Japan, a corporation of Japan
Filed Dec. 29, 1966, Ser. No. 605,760
Claims priority, application Japan, Dec. 30, 1965, 41/13
Int. Cl. H01j 29/70, 29/58
U.S. Cl. 315—21 6 Claims



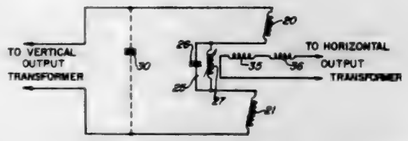
This invention relates generally to a cathode ray tube of the type having a single gun and a post acceleration and focusing tube, and more particularly to such a cathode ray tube which has provided therewith an improved color switching device which includes two pairs of electrodes which are provided on opposite sides of the outer surfaces of the neck portion of the cathode ray tube, and two pairs of inner electrodes which are made of a low resistance material and which are located in positions corresponding to the outer electrodes. A layer of high resistance material is provided around the inner electrodes. The color switching is accomplished by applying switching signals in opposite directions to the two pairs of outer electrodes.

3,444,422
CIRCUIT ARRANGEMENT FOR CORRECTING THE PIN-CUSHION DISTORTION UPON DEFLECTION OF AN ELECTRON BEAM IN A DISPLAY TUBE
Jörg Wölber, Hamburg, Germany, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 28, 1965, Ser. No. 505,540
Claims priority, application Germany, Oct. 29, 1964, P 35,388; Dec. 12, 1964, P 35,679
Int. Cl. H01j 29/76
U.S. Cl. 315—24 16 Claims



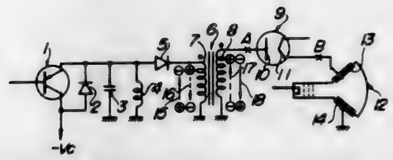
A pincushion correction system for a television deflection system employs a transductor having first and second windings wound on a saturable core. The first winding is connected in parallel with the horizontal deflection coil and the second winding is connected in series with the vertical deflection coil and the frame deflection generator. The frame deflection current flowing in the second winding varies the inductance of the first winding so as to correct the side-to-side pincushion distortion. A capacitor and an inductor are connected in parallel with the second winding to form an LC resonant circuit that phase shifts the induced voltage of horizontal frequency in said second winding approximately 180 degrees. The phase shifted voltage is applied to the vertical deflection coil which has a relatively large inductance so that the applied voltage is integrated to correct the top-to-bottom pincushion distortion.

3,444,423
PINCUSHION CORRECTION CIRCUIT
Harry Lee Marshall, 2131 Bueter Road, Fort Wayne, Ind.
Filed May 19, 1967, Ser. No. 639,877
Int. Cl. H01j 29/70, 29/76
U.S. Cl. 315—24 7 Claims



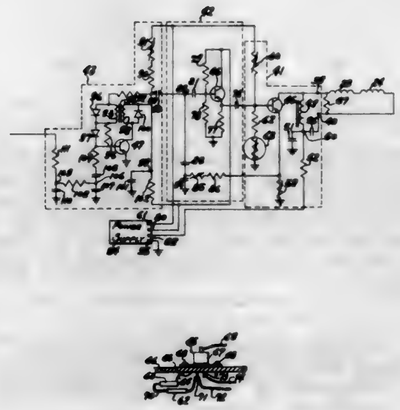
A pincushion correction circuit for a television receiver. Horizontal frequency current is induced in the vertical deflection windings to shock into oscillation a parallel resonant circuit connected in series with the vertical windings. Adjustment of the resonant circuit phase shifts the induced current for maximum correction. The top characteristic is improved at the expense of a small impairment of the bottom characteristic.

3,444,424
HORIZONTAL DEFLECTION CIRCUIT WITH PROTECTIVE DIODE
Tokuzi Ushikubo, Sayama-shi, and Iwao Kikuchi, Kodaira-shi, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Filed Oct. 12, 1965, Ser. No. 495,230
Claims priority, application Japan, Oct. 21, 1964, 39/59,844
Int. Cl. H01j 29/76
U.S. Cl. 315—27 17 Claims



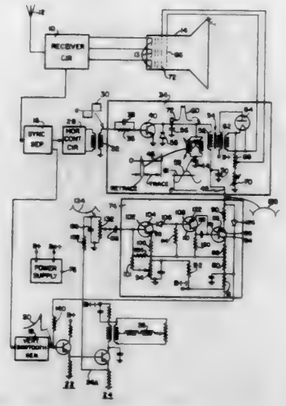
A transistorized horizontal deflection circuit for television receivers wherein damage to the horizontal deflection power transistor due to abnormal currents developed in the high voltage circuit supplying high voltage to the cathode-ray tube is prevented through provision of a protective diode in a closed circuit including the transistor and a coil of the flyback transformer, the diode having a polarity opposite to the polarity of the emitter junction of the tranamitter.

3,444,425
TELEVISION VERTICAL DEFLECTION CIRCUIT
George A. Kent, Fort Wayne, and Richard J. Waring, Auburn, Ind., assignors to The Magnavox Company, Fort Wayne, Ind., a corporation of Delaware
Filed June 24, 1966, Ser. No. 560,259
Int. Cl. H01j 29/70
U.S. Cl. 315—27 3 Claims



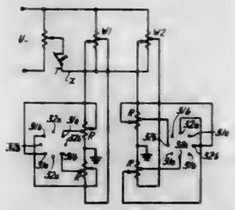
A vertical deflection circuit for use in a transistorized television receiver is described. The circuit includes a blocking oscillator, a driver stage, and an output stage, the vertical deflection coils being directly coupled to the output stage. A thermistor is provided in the base circuit of the output transistor and is put in thermal contact with that transistor to stabilize the output current of the transistor.

3,444,426
HORIZONTAL SWEEP SYSTEM WITH AUTOMATIC RASTER SIZE REGULATION
Mel E. Buechel, Chicago, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Dec. 29, 1967, Ser. No. 694,462
Int. Cl. H01j 29/70
U.S. Cl. 315—27 17 Claims



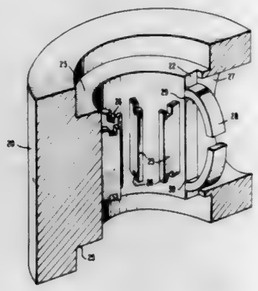
The system operates to horizontally deflect the electron beam in a cathode ray tube and includes a semiconductor switch having its output electrodes coupled in series with a horizontal deflection winding and a voltage supply. A circuit coupled to the supply maintains the raster width constant with changes in the intensity and/or the vertical position of the electron beam.

3,444,427
METHOD AND DEVICE FOR ALIGNING THE FIELD AXIS OF A STIGMATOR IN AN ELECTRON-OPTICAL LENS SYSTEM
Moriz v. Rauch, Berlin, Germany, assignor to Siemens Aktiengesellschaft, Munich, Germany, a corporation of Germany
Filed Mar. 24, 1965, Ser. No. 442,389
Claims priority, application Germany, Mar. 25, 1964, S 90,205
Int. Cl. H01j 29/56, 29/46
U.S. Cl. 315—31 2 Claims



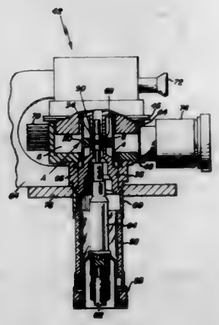
A method and device for aligning the field axis of a stigmator in an electron microscope lens system wherein an image of an object is produced by the operation of the lens system. Abrupt changes in the intensity of the stigmator field are made and the resulting displacement jumps of the image are observed. The stigmator field is shifted to a position where the image displacement due to the change in field intensity vanishes.

3,444,428
MAGNETRON ANODE BLOCKS
René Zwobada, Paris, France, assignor to Societe Lignes Telegraphiques et Telephoniques, Paris, France, a joint-stock company of France
Filed Jan. 7, 1965, Ser. No. 423,951
Claims priority, application France, Jan. 15, 1964, 960,370, 960,371; Dec. 21, 1964, 999,337
Int. Cl. H01j 25/50, 25/58
U.S. Cl. 315—39.53 1 Claim



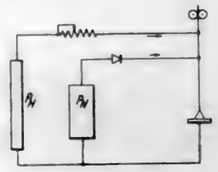
An anode for a magnetron is disclosed which is a hollow cylindrical member having a plurality of vanes extending radially inwardly to define a plurality of ringing cavities. A coupling structure includes a longitudinal inner groove along the curved bottom of one of the ringing cavities, a bore in an outer wall of the member at right angles to the axis thereof and extending inwardly to the bottom of the inner groove and a circular groove extending further inward from the bottom of the bore and intersecting the inner groove at opposite ends thereof and a coupling sleeve engaging the bore and circular groove across the inner groove to provide a pair of shorting stubs across the coupling.

3,444,429
ANODE STRUCTURE FOR MICROWAVE FREQUENCY OSCILLATORS
Edward T. Downing, Winchester, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed June 29, 1966, Ser. No. 561,480
Int. Cl. H01j 25/58
U.S. Cl. 315—39.75 12 Claims



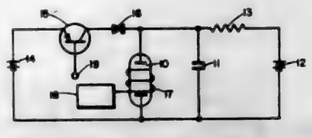
An anode vane member defining a step portion of reduced height at the free end adjacent to the cathode member for crossed field oscillator devices.

3,444,430
ELECTRIC ARC STABILISATION
James C. Needham, Cambridge, England, assignor to The Welding Institute, London, England, a body corporate of Great Britain
Filed May 2, 1966, Ser. No. 547,028
Claims priority, application Great Britain, May 4, 1965, 18,749/65
Int. Cl. B23k 9/10; H05b 7/18
U.S. Cl. 315—171 9 Claims



A direct current welding arrangement is disclosed in which the arc is supplied by a principal and a supplementary power source. The principal source has a waveform which does not fall cyclically to zero and which provides the major part of the arc current. The supplementary source has an output voltage which is greater than the principal source and a short circuit current output which is not greater than 50% of that of the principal source. A rectifier is connected in series with the principal source across the arc and the supplementary source is connected in parallel with the rectifier-source series combination to prevent current flow from the supplementary source through the principal source.

3,444,431
ELECTRIC FLASH BEACON
Seymour Goldberg, Lexington, Mass., assignor to EG & G, Inc., a corporation of Massachusetts
Filed Oct. 23, 1965, Ser. No. 503,948
Int. Cl. H05b 41/34, 41/14
U.S. Cl. 315—200 1 Claim

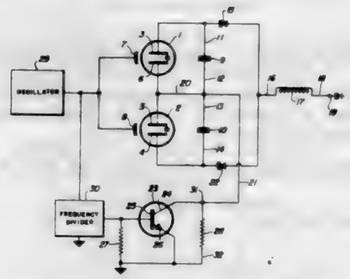


A circuit for operating an electric flashtube including a capacitor charging circuit, a trigger circuit connected to ionize the gas in the flashtube thereby permitting discharge of the charged capacitor therethrough, and a low voltage DC circuit adapted to maintain the flashtube conducting for a predetermined time after the capacitor discharges.

3,444,432
FLASH INTENSIFIER APPARATUS
Walter J. Mahnken, Littleton, Colo., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Aug. 15, 1966, Ser. No. 572,371
Int. Cl. H05b 37/02
U.S. Cl. 315—227 5 Claims

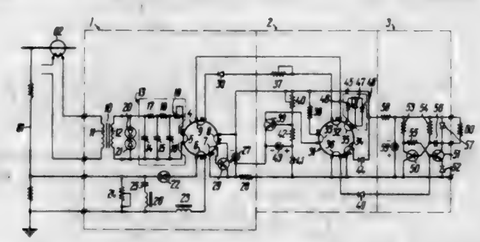
Flash apparatus is provided in which capacitors in a charging circuit are charged to a first voltage level by the ringing action of an underdamped R-L-C circuit. Diodes are included in the charging circuit to hold the voltages accumulated on the capacitors. Switching means are further provided to periodically short circuit the resistor out of the charging circuit whereby the capacitors are charged to a second higher voltage level. A flash tube

is connected in shunt with each capacitor, and means are provided for intermittently initiating conduction in the flash tubes, thereby to discharge the capacitors through



their respective flash tubes for normally producing flashes of predetermined brilliance and periodically producing flashes of intensified brilliance.

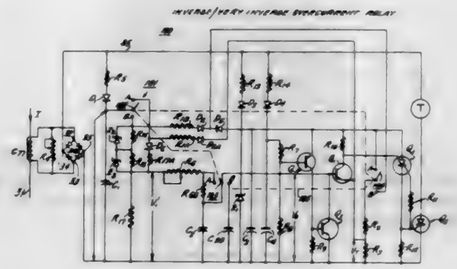
3,444,433
PROTECTIVE DEVICE HIGH-VOLTAGE D.C. POWER TRANSMISSION LINES
Vasily Makarovich Maranchak, Lefortovsky val 7/6, korp 9, kv. 12; and Stanislav Petrovich Veisky, Marxistskaya ulitsa 43, kv. 10, both of Moscow, U.S.S.R.; and Vladislav Vladimirovich Krivenkov, Oktyabrsky prospekt 60, kv. 36, Moskovskaya Oblast, Ljubertsy, U.S.S.R.
Filed Apr. 5, 1966, Ser. No. 540,387
Int. Cl. H02h 1/04
U.S. Cl. 317—36 5 Claims



A protective device for high-voltage D.C. power transmission lines having a discriminating member including a transformer having primary and secondary windings, the latter being connected to a primary winding of a rectangular hysteresis loop core, the other of which is connected to a voltage divider of the line being protected. The loop core has three secondary windings, two of which constitute blocking windings of an oscillator, the third being a source of unidirectional voltage pulses produced in the discriminating member due to the reversal of the core magnetism. A timing member constituted as a step-type counter of unidirectional pulses is connected to the source of unidirectional pulses of the discriminating member and an output member is connected to the output of the timing member.

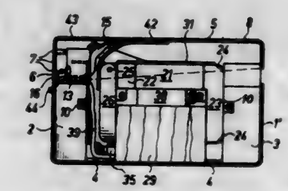
3,444,434
STATIC TIME-OVERCURRENT RELAY
Stanley E. Zocholl, Holland, Pa., assignor, by mesne assignments, to I-T-E Imperial Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Mar. 6, 1967, Ser. No. 620,701
Int. Cl. H02h 3/08
U.S. Cl. 317—36 9 Claims

This invention teaches a static overcurrent relay, which category of static relays are conventionally comprised of solid state components designed to emulate inverse time-current characteristics. The most important function of such static overcurrent relays is the ability to substantially exactly follow the inverse time-current characteristic curves which are capable of being emulated only by electromechanical relays insofar as the present state of the art is concerned. The static relay device taught herein employs a variable reference voltage circuit which generates a variable reference output which, in turn, is linearly



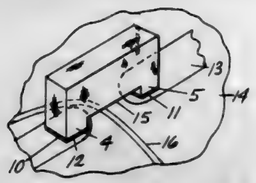
related to the input signal by a characteristic curve having a slope determined by the value of the resistance elements employed in the variable reference voltage circuit. This arrangement produces a static relay device yielding a time-current characteristic curve having a considerably flatter slope than that obtainable with conventional static relay devices, thereby more closely emulating the ideal time-current characteristic curve.

3,444,435
ELECTROMAGNETIC IGNITION DEVICE, PARTICULARLY FOR LIGHTERS
Richard Halm, Schorndorfer Strasse 8/1, Baltmannsweiler, Germany
Continuation-in-part of application Ser. No. 397,969, Sept. 21, 1964. This application July 13, 1967, Ser. No. 653,229
Claims priority, application Germany, July 15, 1966, H 59,972
Int. Cl. F23q 3/01
U.S. Cl. 317—81 12 Claims



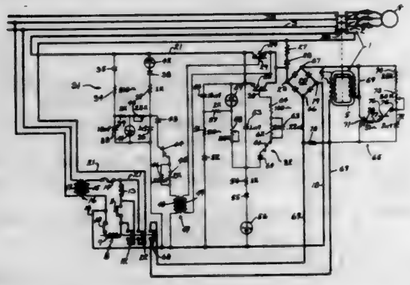
Electromagnetic ignition device with a permanent magnet in a magnet circuit, including a laminated U-shaped yoke provided with a low-tension winding and a high-tension winding, into one leg portion of which yoke a permanent magnet is inserted, the other leg portion carrying the high and low tension windings. An armature is movably arranged between the yoke leg portions. Pivoting of a lid downwards tensions a leaf-type spring finally to tear the armature from abutment with the yoke. Fuel is emitted from a storage reservoir through a valve actuated by the pivoting of the lid. Following emission of fuel, the armature, in tearing off the yoke, breaks open the low tension winding to cause a spark to jump a gap in the high tension winding to ignite the fuel.

3,444,436
MOUNTED CAPACITOR WITH SPACED TERMINAL FEET
Nello Coda, Erie, Pa., assignor to Erie Technological Products, Inc., Erie, Pa., a corporation of Pennsylvania
Filed Apr. 26, 1967, Ser. No. 633,931
Int. Cl. H02b 1/04
U.S. Cl. 317—101 10 Claims



A capacitor with spaced feet mounted on a printed circuit board or the like in which the capacitor terminals comprise conductive extensions of the electrodes to the supporting surfaces of the feet.

3,444,437
CONTROL CIRCUIT RESPONSIVE TO THE SUM TOTAL CURRENT TO A LOAD
Walter F. Huette, New Berlin, Odo J. Struger, Milwaukee, and Ivan L. Brandt, Fox Point, Wis., assignors to Allen-Bradley Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Oct. 21, 1965, Ser. No. 499,362
Int. Cl. H01h 47/32
U.S. Cl. 317—148.5 6 Claims

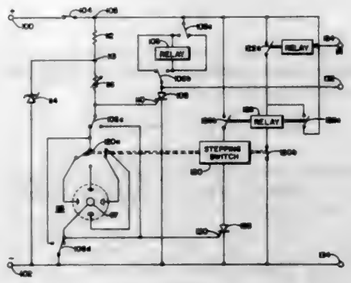


A motor control circuit includes a pilot switch that connects the input of a rectifier across the A.-C. line and the rectifier output across the coil of a D.-C. magnet switch. SCR's are connected in parallel to the input of the rectifier to control pick-up. Another SCR is connected across the magnet switch coil to control drop-out. Each SCR has a Shockley diode coupled to its gate circuit to fire it. Each Shockley diode is connected across a sampling capacitor which develops its breakover voltage. Each Shockley diode on the A.-C. line side is connected to discharge a large capacitor to the gate of the SCR.

3,444,438
THRESHOLD SEMICONDUCTOR DEVICE
Elmar J. Umblia, Hagersten, and Heinrich Wesemeyer, Nynashamn, Sweden, assignors to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden
No Drawing. Filed Sept. 8, 1965, Ser. No. 485,910
Claims priority, application Sweden, Sept. 18, 1964, 11,227/64
Int. Cl. H01k 47/26, 50/12
U.S. Cl. 317—234 3 Claims

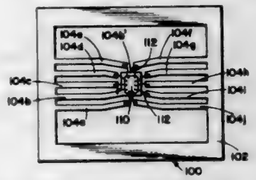
A threshold semiconductor device includes spaced electrodes. Between the electrodes is a semiconductor material containing at least three of the following material components: selenium, tellurium, thallium and arsenic. The device switches from a high ohmic to low ohmic state when the voltage across the electrodes exceeds a certain threshold value.

3,444,439
ELECTRICAL TIMER SYSTEM HAVING ELECTROLYTIC TIMING CELL
Hendrikus M. Hoeksema, Doernigheim (Main), Germany, assignor to Honeywell G.m.b.H., Frankfurt am Main, Germany, a corporation of Germany
Filed Oct. 19, 1966, Ser. No. 587,861
Claims priority, application Germany, Nov. 4, 1965, H 57,588
Int. Cl. H01g 9/00, 9/18
U.S. Cl. 317—231 9 Claims



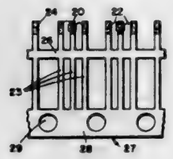
This invention relates generally to electronic circuitry, more particularly to electronic circuitry which forms a timer, and more specifically to an electronic timer which uses an electrolytic cell for timing control.

3,444,440
MULTIPLE LEAD SEMICONDUCTOR DEVICE WITH PLASTIC ENCAPSULATION SUPPORTING SUCH LEADS AND ASSOCIATED ELEMENTS
Harold B. Bell, Phoenix, and George A. Doyle, Scottsdale, Ariz., assignors to Motorola, Inc., Chicago, Ill., a corporation of Illinois
Filed Nov. 27, 1964, Ser. No. 414,202
Int. Cl. H01l 3/00, 5/00
U.S. Cl. 317—234 10 Claims



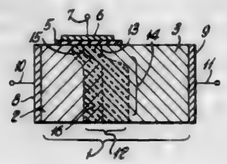
A semiconductor device is assembled and encased in plastic by a one-step transfer molding operation. In each embodiment of the device, electrical leads for the device are supported by separable means while the semiconductor unit and fine-wire connections from electrodes on the semiconductor unit are secured to such leads for the device, and with such leads and associated elements so retained, the semiconductor unit wires and corresponding portions of the leads are housed in a cavity of a transfer mold, plastic is introduced into the cavity and around the portions of the semiconductor device therein to completely encapsulate and support the elements after the plastic is cured. Upon removal from the mold, any superfluous metal material is trimmed therefrom to provide a plastic encapsulated device ready for connection into apparatus.

3,444,441
SEMICONDUCTOR DEVICES INCLUDING LEAD AND PLASTIC HOUSING STRUCTURE SUITABLE FOR AUTOMATED PROCESS CONSTRUCTION
Robert W. Helda and Milan L. Lincoln, Scottsdale, Ariz., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Original application June 18, 1965, Ser. No. 465,123. Divided and this application Oct. 6, 1967, Ser. No. 673,464
Int. Cl. H01l 5/02, 11/02
U.S. Cl. 317—234 4 Claims



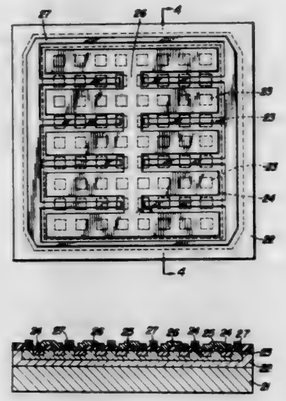
A plastic encapsulated semiconductor device is mass produced by a series of steps involving the use of a multiple-unit lead frame in the form of an elongated, rectangular metallic strip having a particular geometric configuration. The lead frame strip includes a continuous lead mounting portion which extends the length of the strip, and a plurality of leads integral with the mounting portion extending at right angles therefrom. The leads are arranged in spaced parallel groups joined by a continuous tie band extending parallel to the lead mounting portion, intermediate the lead mounting portion and the lead ends. At least one lead of each group includes an end portion adapted for the bonding of a semiconductor element thereto, while the ends of the other leads of each group are adapted for wire bonding to form electrical connections with the semiconductor element. The method includes the steps of die-bonding and wire bonding to complete the electrical structure, followed by the step of encapsulating the semiconductor elements and the adjacent lead portions in plastic, and then severing the mounting portion and tie band from the metallic strip, whereupon the completed assembly is ready for testing and separation of the individual units.

3,444,442
AVALANCHE TRANSISTOR HAVING REDUCED WIDTH IN DEPLETION REGION ADJACENT GATE SURFACE
Takayuki Yanagawa, Tokyo, Japan, assignor to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan
Filed Apr. 25, 1967, Ser. No. 633,526
Claims priority, application Japan, Apr. 27, 1966, 41/26,810
Int. Cl. H01l 11/14
U.S. Cl. 317—235 5 Claims



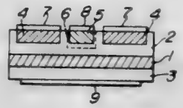
A surface controlled avalanche transistor (SCAT) in which the width of the depletion layer of the portion of the p-n junction nearest to the gate electrode is made narrower than the portion of the depletion layer which is more remote from the gate electrode.

3,444,443
SEMICONDUCTOR DEVICE FOR HIGH FREQUENCY AND HIGH POWER USE
Heiji Moroshima, Kodaira-shi, Japan, assignor to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Filed Dec. 12, 1967, Ser. No. 689,942
Claims priority, application Japan, Dec. 26, 1966, 41/84,436
Int. Cl. H01l 11/00, 15/00
U.S. Cl. 317—235 7 Claims



A transistor specifically suitable for use in high frequency and high power operation comprising an emitter region disposed in a lattice form in a base region formed in a main surface of a silicon semiconductor substrate, said emitter region dividing the base region into many separated portions at the main surface and surrounding each of them and the surface of the semiconductor substrate being coated with an SiO_2 film over which a base electrode layer is provided to connect said separated plural portions together.

3,444,444
PRESSURE-RESPONSIVE SEMICONDUCTOR DEVICE
Akio Yamashita, Ikeda-shi, and Masaru Tanaka, Toyonaka-shi, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan
Filed Oct. 17, 1966, Ser. No. 587,130
Claims priority, application Japan, Oct. 28, 1965, 40/66,770; Nov. 4, 1965, 40/68,008; Sept. 8, 1966, 41/60,017, 41/60,018
Int. Cl. H01l 11/00, 15/00
U.S. Cl. 317—235 3 Claims

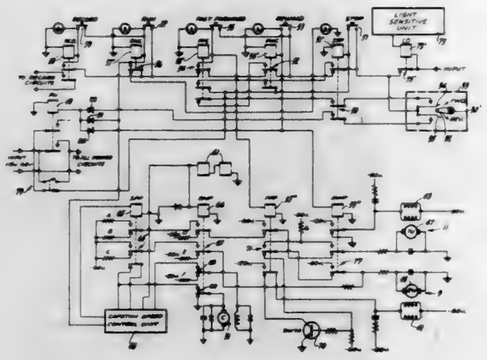


A pressure-responsive semiconductor device having a control section consisting essentially of a region having a deep energy level impurity formed in a surface region of one conductivity type is shown. A heavily doped region of the same conductivity type as said surface region exists on said region having a deep energy level impurity. The junction between said surface region and said heavily doped region is located in the vicinity of the principal surface of the device.

3,444,445
PLURAL MOTOR TORQUE CONTROL FOR TAPE TRANSPORT MECHANISM

John T. Mullin, Beverly Hills, Calif., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Continuation of application Ser. No. 712,537, Jan. 31, 1958. This application Jan. 15, 1962, Ser. No. 173,849
Int. Cl. H02p 7/74
U.S. Cl. 318—7 15 Claims



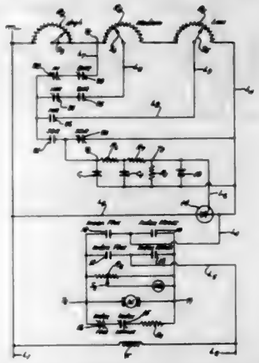
1. A tape transport mechanism for transferring a tape between first and second tape reels, a first reversible motor for driving the first reel in either of two opposite directions, a second reversible motor for driving the second reel in either of two opposite directions, first means normally coupled to said first and second motors for energizing said first and second motors to drive the first and the second reels in opposite directions whereby tension is maintained on the tape, second means coupled to said first and to said second motors for energizing said first and second motors to drive the first and the second reels at torques different from each other but in the same direction for an acceleration of the tape to an operating speed, switching means coupled to the first and second energizing means for disconnecting said first energizing means from said motors and for coupling said second energizing means to said motor to obtain an acceleration of the tape, means coupled to said switching means for reversing the polarity of the energizings applied by said first and second energizing means to said first and said second motors to bring the tape to a standstill and initiate the movement of the tape in the opposite direction, and means controlled by said reversing means when the tape movement is initiated in the opposite direction for disconnecting said second energizing means from said motors and reconnecting said first energizing means to said motors to restablish tension on the tape at standstill.

3,444,446
FINE-MEDIUM-COARSE SERVOMOTOR POSITION CONTROL

Fred G. Burg, Los Angeles, and Socrates Lenders, Wilmington, Calif., assignors, by mesne assignments, to Houdaille Industries, Inc., Buffalo, N.Y., a corporation of Michigan

Filed June 24, 1965, Ser. No. 466,688
Int. Cl. H02p 1/00, 5/46
U.S. Cl. 318—18 11 Claims

Apparatus for controlling the indexing of a turret having a number of selected positions including means for selecting a desired position, means which produces a signal corresponding to the deviation of the turret from its selected position and a pair of two-state logic elements connected to the selecting means and the turret and switched upon predetermined signal levels such that the turret drive motor operates at different speeds dependent upon the state of the logic elements. The drive motor operates with

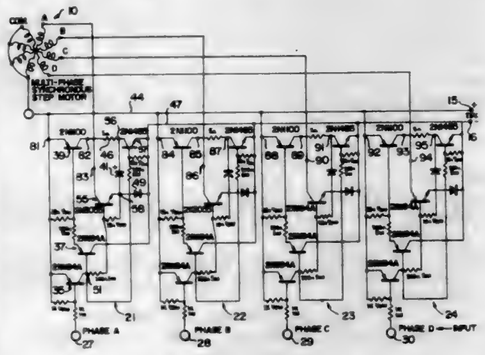


plural speeds so as to assure that rapid change in turret position may be obtained and thus a very high speed, a moderate speed, and a slow final positioning speed is utilized.

3,444,447
MULTI-PHASE STEP MOTOR CONTROL CIRCUITS INCLUDING MEANS FOR SUPPLEMENTING THE NORMAL ENERGIZATION OF THE WINDINGS

Harold R. Newell, South Newbury, N.H., assignor to Mesur-Matic Electronics Corporation, Warner, N.H., a corporation of Delaware

Filed Sept. 22, 1966, Ser. No. 581,334
Int. Cl. H02k 29/02
U.S. Cl. 318—138 12 Claims

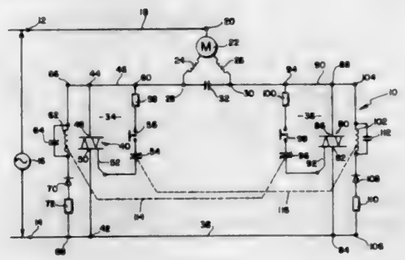


1. Control circuitry for exciting the field windings of a multi-phase step motor, comprising a driver circuit for applying energizing currents to said field windings in a predetermined sequential switching format, so that each field winding is energized during certain preselected time increments of said switching format and de-energized during certain other preselected time increments of said switching format; a power supply for said driver circuit; said driver circuit including a plurality of switching circuits corresponding in number to the number of stepping phases to which said motor is to be subjected during one complete period of rotor rotation, each of said switching circuits including means for storing energy from said power supply during time increments in which the associated field winding is de-energized and for supplying the stored energy in the form of additional energizing current to said associated field winding during time increments in which said associated field winding is energized.

3,444,448
MULTIPLE INPUT, SOLID STATE, REVERSING, MOTOR CONTROL WITH DIRECTION LOCK-OUT

Newell G. Welch, Waynesboro, Va., assignor to Acme Visible Records, Inc., Crozet, Va., a corporation of Delaware

Filed Nov. 21, 1966, Ser. No. 595,847
Int. Cl. H02p 1/22, 1/40
U.S. Cl. 318—207 11 Claims

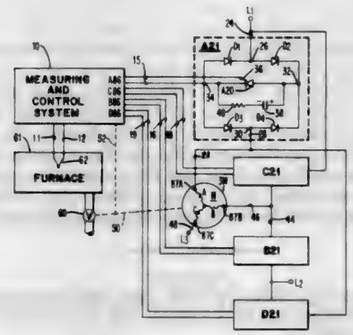


A motor control comprising a reversible motor, a first circuit for providing current for clockwise rotation of said motor, a second circuit for providing current for counterclockwise rotation of said motor, said circuits each including a manually operable switch and a relay operable switch in series, a gated control means having a pair of electrodes and a control gate, said switches being connected in series with said control gate, and a relay, said relay in one of said circuits operatively connected to the relay operable switch in the other of said circuits, said relay being in parallel with said gated control means. The motor control includes an A.C. source operatively connected to said motor and said control circuits; the gated control means being a bi-directional semiconductor triode, and further including a diode in series and a capacitor in parallel with said relay.

3,444,449
PROTECTION CIRCUIT FOR SOLID STATE SWITCHING NETWORK

Louis D. Di Napoli, Philadelphia, and William J. Shaffer, North Wales, Pa., assignors to Leeds & Northrup Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Feb. 13, 1967, Ser. No. 615,526
Int. Cl. H02p 1/40
U.S. Cl. 318—207 9 Claims

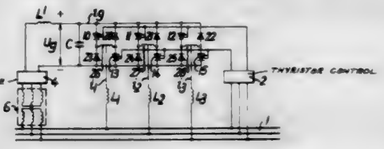


An improved switching network for selecting the direction of rotation of a three-phase motor by turning on silicon controlled rectifier (SCR) switching elements which will provide the required phase orientation of the motor supply connections. The SCR's are connected in full wave rectifying bridge circuits so that current through the SCR's is unidirectional. The SCR's are each shunted by a series capacitor and resistor. The capacitors become charged to prevent a high rate of change of potential across an unselected SCR when a selected SCR connected to the same terminal as the unselected SCR is turned on.

3,444,450
REACTIVE POWER SUPPLY USING INVERTER CIRCUITS

Floris Koppelmann, Berlin, Germany, assignor to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, Germany

Filed Feb. 15, 1966, Ser. No. 527,427
Claims priority, application Germany, Dec. 17, 1965, L 49,976
Int. Cl. H02p 1/26, 1/42, 7/60
U.S. Cl. 318—227 10 Claims

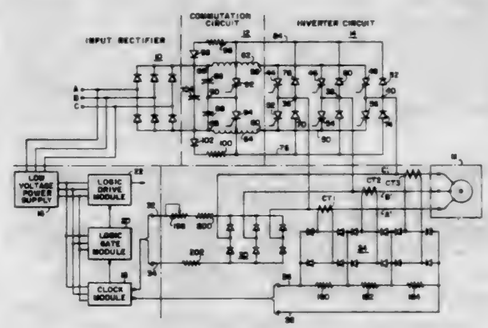


A device for supplying inductive reactive power to the phases of a poly-phase power main. The device includes an inverter composed of a plurality of inverter units, one for each phase; voltage source, connected to the inverter, to supply a D.C. operating voltage thereto; and a plurality of choke coils, one for each phase, each interconnecting one of the inverter units to its associated mains phase. Each of the inverter units includes at least one controllable rectifier and one current return diode connected to supply an output current, while the D.C. voltage source includes a capacitor which may be charged via an A.C.-to-D.C. converter from the mains. Control means are also connected to the inverter to control the conduction of each of the inverter units in synchronism and in controlled phase relation with the mains voltages for feeding inductive reactive current from the inverter to the mains.

3,444,451
CLOSED LOOP MOTOR CONTROL SYSTEM

Leland A. Schlabach and Laszlo Gyugyi, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Aug. 26, 1966, Ser. No. 575,386
Int. Cl. H02p 7/62
U.S. Cl. 318—227 10 Claims



1. In a system for supplying alternating current to an electrical motor by means of an inverter circuit, the combination of means in a closed loop regulating system for generating two pulsed waveforms in which the phase dif-

ference between pulses in the two waveforms determines the voltage output of the inverter circuit, and means responsive to the voltage appearing at the input to said motor for varying the phase difference between the pulses in the two waveforms to thereby maintain the sum of the inverter output voltage and the voltage regenerated by the motor constant regardless of motor speed and load.

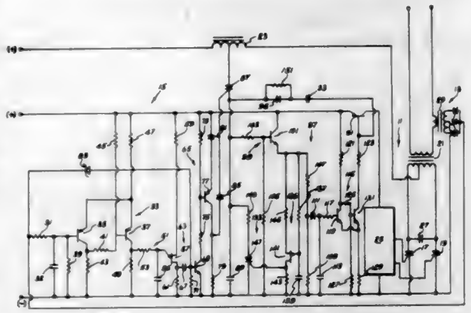
3,444,452
HIGH VOLTAGE RECTIFIER ARRAY INCLUDING A NEUTRALIZING CONDUCTOR
Peter Johannes Hubertus Janssen, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Feb. 3, 1964, Ser. No. 342,166
Claims priority, application Netherlands, Feb. 8, 1963, 288,761
Int. Cl. H02m *1/18, 7/00;* **H01l** *3/00*
U.S. Cl. 321—11 **9 Claims**



1. A high voltage rectifier comprising an input electrode connected to one terminal of a source of alternating voltage to be rectified, an output electrode for supplying a direct voltage to a load, a plurality of semiconductor rectifying junction elements serially connected between said input and output electrodes, a conductor connected to a second terminal of said voltage source, each of said rectifying elements having a distributed parasitic capacitance relative to said conductor, a neutralizing conductor arranged in the vicinity of said rectifying elements to form therewith a plurality of distributed neutralizing capacitances which vary in a non-linear manner for different ones of said rectifying elements, an insulation layer separating said rectifying elements from said neutralizing conductor, said neutralizing conductor comprising a layer of conductive material which partially covers said insulation layer and is arranged so as to shield said rectifying elements from the effects of said parasitic capacitances, said conductive layer being arranged so that the area of coverage is greatest near the input electrode and decreases towards the output electrode thereby simultaneously to produce a non-linear decreasing variation in said neutralizing capacitances from the input to the output electrode and a variation in said parasitic capacitances from the input to the output electrode approximately inverse thereto, and means for coupling said one terminal of the alternating voltage source to said neutralizing conductor so that said neutralizing conductor is the only means for neutralizing said parasitic capacitances.

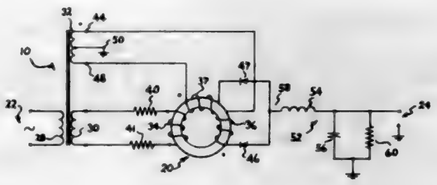
3,444,453
CIRCUIT FOR CONTROLLING THE OPERATION OF A STATIC INVERTER UNDER OVERLOAD CONDITIONS
Bruce E. Peterson, Northbrook, Ill., assignor to Vapor Corporation, Chicago, Ill., a corporation of Delaware
Filed July 13, 1966, Ser. No. 564,870
Int. Cl. H02m *1/18;* **H02h** *7/12*
U.S. Cl. 321—11 **6 Claims**

A control circuit is provided for a static inverter which interrupts the operation of a static inverter under overload conditions. During periods of operation when the load current is within normal operating limits, the control circuit is inoperative. In the event of a slight overload having a short time duration, the control circuit fails to de-energize the inverter. However, should the overload condition persist, the inverter operation is interrupted. During periods of excessive overload, i.e., short circuit conditions, the inverter operation is immediately



interrupted thereby eliminating any possibility of component damage. After the inverter is de-energized, the control circuit, after a short time period, automatically resets and the inverter becomes operative, and should the overload condition persist, the control circuit recycles.

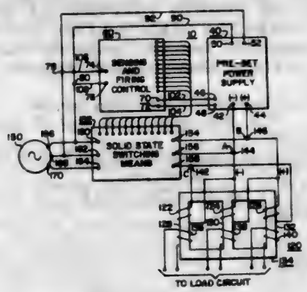
3,444,454
FUNCTION GENERATOR UTILIZING LINEAR AND SATURABLE CORE TRANSFORMERS
Hubert K. Burke, Schenectady, and Gerald J. Michon, Waterford, N.Y., assignors to General Electric Company, a corporation of New York
Filed Dec. 29, 1966, Ser. No. 605,742
Int. Cl. H02p *13/14, 13/16*
U.S. Cl. 321—16 **10 Claims**



An A-C signal is applied to the primary windings of a linear and a saturable core transformer. The secondary winding outputs of both transformers are summed to provide the desired output signal, which signal may be rectified and filtered to provide a D-C output. The linear transformer provides an output varying linearly with an increase in A-C amplitude and the saturable transformer provides an output which varies linearly and, subsequent to reaching saturation, remains substantially constant.

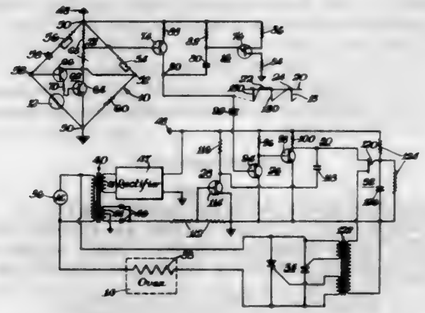
3,444,455
SOLID STATE MEANS FOR THE PREVENTION OF TRANSIENT SATURATION OF INDUCTIVE APPARATUS
Frederick O. Johnson, Monroeville, and Leo A. Finzi, Irwin, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 14, 1967, Ser. No. 615,964
Int. Cl. H02p *13/04, 13/14, 13/16*
U.S. Cl. 323—18 **7 Claims**

An electrical circuit for preventing transient saturation of the magnetic core of electrical inductive apparatus, such as transformers, during the period of time between the closing of the switching means which connects the



inductive apparatus with a source of alternating potential, and the reaching of a steady state flux condition in the magnetic core.

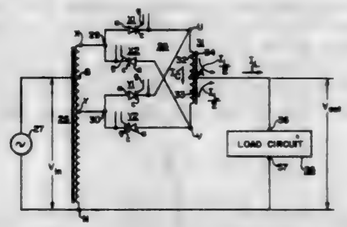
3,444,456
CONTROL CIRCUIT FOR LOW NOISE CONTROLLED RECTIFIER SYSTEMS
Joseph J. Codichini, Kennett Square, Pa., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Dec. 6, 1966, Ser. No. 599,540
Int. Cl. G05f *1/46*
U.S. Cl. 323—22 **12 Claims**



A time proportioning temperature controller uses a pulse signal whose pulse width is modulated in accordance with deviations of a process variable from a preselected physical condition to control the electrical power supplied to a load. The power supplied to the load is varied by a silicon controlled rectifier (SCR) which is switched at the zero-crossover time of the alternating current supply voltage. The zero-crossover times are sensed using a full wave rectifier to provide a pulse which is then differentiated. The differentiated pulse corresponding to the trailing edge of the zero-crossover pulse is used to gate the SCR. The passage of this gating pulse to the SCR is controlled by the pulse width modulated signal.

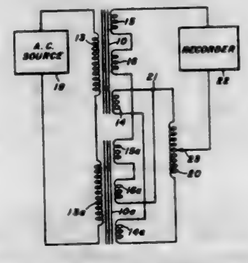
3,444,457
VOLTAGE REGULATOR SYSTEM UTILIZING A CENTER-TAPPED INDUCTOR
John Rosa, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 23, 1967, Ser. No. 625,396
Int. Cl. H02p *13/06;* **H02m** *5/12, 5/20*
U.S. Cl. 323—22 **16 Claims**

Voltage regulator apparatus for an alternating current electrical system including a center-tapped inductor having each end connected to first and second alternating potentials through solid state switching devices, and its center-tap connected to a load circuit. A firing circuit senses the parameter to be regulated and the unidirectional circulating current in the inductor, switching the solid state



switching devices to regulate the parameter, and to reduce the impedance of the inductor to AC load current by maintaining the magnitude of the circulating current greater than one half the load current.

3,444,458
DEVICE FOR DETECTING VARIATIONS IN MAGNETIC PROPERTIES OF FERROMAGNETIC MATERIAL
Ralph H. Scott, Bristol Township, Bucks County, Pa. (62 Oldbrook Road, Levittown, Pa. 19057)
Filed Nov. 21, 1966, Ser. No. 595,858
Int. Cl. H03j *1/04, 3/14*
U.S. Cl. 324—34 **1 Claim**

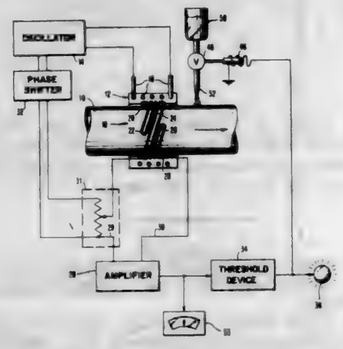


A device which continuously indicates changes in the magnetic properties of a ferromagnetic material, such as steel strip. Includes two confronting magnetic cores with a gap between them to receive a ferromagnetic specimen. The ends of the cores carry pickup windings or equivalent means, in which signals are induced in accordance with the reluctance between the cores. Signals go to a recorder, which shows when a change occurs. The device may be used in a processing line for steel strip for indicating changes in magnetic properties of the strip without interfering with normal operation of the line. A change in magnetic properties usually indicates a change in the chemical or metallurgical properties. Thus the device enables an improper operating condition to be corrected promptly.

3,444,459
EDDY CURRENT FLAW DETECTOR UTILIZING HELICAL SENSING COILS SURROUNDING THE TEST PATH
Charles Prindle, Croton-on-Hudson, and Harvey M. Feinman, New York, N.Y., assignors to Robintech Incorporated, a corporation of New York
Filed Jan. 13, 1966, Ser. No. 520,501
Int. Cl. G01r *33/14*
U.S. Cl. 324—40 **12 Claims**

Apparatus for detecting flaws in a cylindrical body having at least a surface portion which is electrically conductive, including electromagnetic inductive means for

providing changing magnetic fields at the surface portion while the body is axially moved through the apparatus in a cylindrical test path or circumferential zone to thereby set up eddy currents in the conductive surface. Electromagnetic sensing devices are circumferentially arranged around the test path and operable to detect flaws therein by detecting distortions of the magnetic field accompanying distortions in the eddy current patterns occasioned by such flaws. The sensing devices comprise an even number of coils arranged in an equally spaced relationship around the circumference of the test path, each of the coils



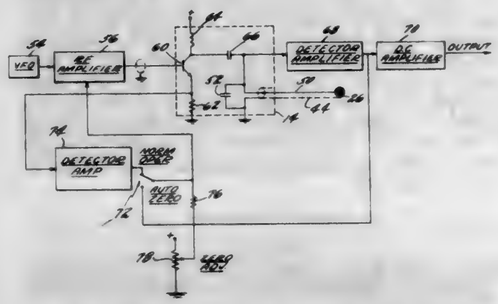
being of oblong shape with the elongated portions of the coils extending helically in a band or zone around the cylindrical test path in a saddle configuration so that each turn of each coil traverses a substantial arc of the circumference of the test path. The coils are electrically connected in phase opposition to adjoining coils, and the coils form a generally uniform pattern about a circumference of the path of the body to be tested so that the coils are essentially insensitive to uniform circumferential defects while maintaining optimum sensitivity to all other types of defects.

3,444,460

ELECTRODELESS RADIO FREQUENCY CONDUCTIVITY PROBE AND CIRCUITS THEREFOR

Albert W. Penney, Jr., Glastonbury, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Nov. 30, 1966, Ser. No. 598,011
Int. Cl. G01r 33/14, 17/06
U.S. Cl. 324—40 3 Claims



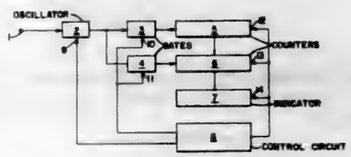
A flat, spiral, magnetic coil is etched on a conductive coating of a thermal insulator circuit board, the other side of the board having a dual, interleaved Faraday shield etched thereon. The flat spiral magnetic coil is supplied with a constant current to achieve voltage directly proportional to resistance, thereby achieving a linear conductance measurement; feedback allows nulling of DC and low frequency AC response.

3,444,461

SYSTEM FOR MEASURING THE PERIOD OF A NUCLEAR REACTOR BY MEASURING THE FREQUENCY OR PERIOD DIFFERENCE OF NONSIMULTANEOUSLY GENERATED SIGNALS

Noboru Amano and Tomozo Furukawa, Mito, Japan, assignors to Nihon Genshiryoku Kenkyu sho, Minato-ku, Japan

Continuation-in-part of application Ser. No. 222,833, Sept. 11, 1962. This application Sept. 9, 1965, Ser. No. 486,177
Claims priority, application Japan, Nov. 7, 1961, 36/40,174
Int. Cl. G21c 17/14
U.S. Cl. 324—68 3 Claims



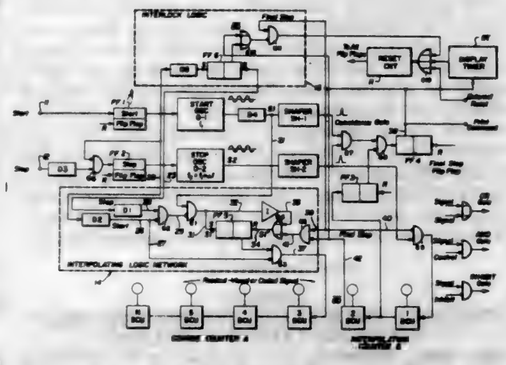
1. A system for measuring the period of a nuclear reactor by means of frequency conversion comprising: an oscillator having an oscillation frequency varying proportionally to the logarithm of an input signal; a first counting circuit for counting the output frequency of said oscillator; a first gate means for switching on and off the output of said oscillator entering into the first counting circuit; a second counting circuit for receiving the result counted in the first counting circuit and for counting the output frequency of said oscillator; a second gate for switching on and off the outputs of said oscillator entering into the second counting circuit; an indicating circuit for receiving and indicating the result of the second counting circuit; and a circuit for controlling the sequence of said measurement.

3,444,462

LOGIC NETWORK AND METHOD FOR USE IN INTERPOLATING TIME INTERVAL COUNTERS

Zoltan Tarczy-Hornoch, Berkeley, Calif., assignor to W. K. Rosenberry, doing business as Zeta Research, Lafayette, Calif.

Filed June 25, 1964, Ser. No. 377,971
Int. Cl. G01r 11/00; G11c 15/00; H03k 13/04
U.S. Cl. 324—68 14 Claims



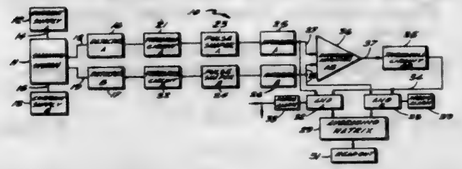
Logic network and method for determining the magnitude of a physical quantity in coarse and fine quanta in which the number of coarse quanta is determined and stored within a possible error of one count, information is stored representing the possibility of the one count error in the stored number of coarse quanta, the number of fine quanta is determined and stored, and in which the stored information representing the possible error in the number of coarse quanta and the stored number of the fine quanta are correlated to generate a signal for causing, if necessary, a correction of the stored number of coarse quanta.

3,444,463

PARTICLE ANALYZING APPARATUS AND METHOD UTILIZING MULTIPLE APERTURES

Wallace H. Coulter, Miami Springs, and Walter R. Hogg, Hialeah, Fla., assignors to Coulter Electronics, Inc., Hialeah, Fla., a corporation of Florida

Filed Feb. 14, 1966, Ser. No. 527,146
Int. Cl. G01n 27/00; G06f 7/38; G06g 7/00
U.S. Cl. 324—71 24 Claims



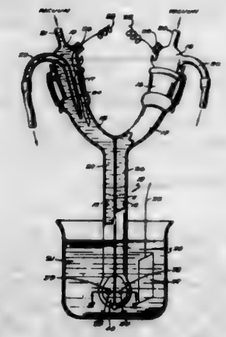
Electronic systems for use with a Coulter particle analyzing apparatus having a plurality of apertures of related sizes, in which circuitry is provided which discretely accumulates the detected signals from each aperture, differentially compares the accumulating signals from two or more apertures, and identifies an aperture which is blocked or otherwise is malfunctional. Embodiments of these systems also contain circuitry which discard the signals from the malfunctioning aperture and average the remainder or which provide a direct readout from the operative apertures.

3,444,464

MULTIPLE APERTURE FITTINGS FOR PARTICLE ANALYZING APPARATUS

Wallace H. Coulter, Miami Springs, and Walter R. Hogg, Hialeah, Fla., assignors to Coulter Electronics, Inc., Hialeah, Fla., a corporation of Illinois

Filed Nov. 26, 1965, Ser. No. 509,986
Int. Cl. G01n 27/02, 27/06
U.S. Cl. 324—71 17 Claims



Multiple aperture apparatus for use with electronic particle study means of the Coulter type, as detailed more fully in the following discussion. The apparatus is characterized by the provision of means for mounting a plurality of microscopic apertures (which also may be termed passageways) to pass therethrough a plurality of independent streams of sample suspension, that is, fluid carrying particles. The disclosed apparatus further includes structure defining a first chamber for a first fluid body which comprises said suspension, and means providing a plurality of second chambers for a second fluid body, each aperture providing a microscopic passageway between the first chamber and one of said second chambers. Electrode means positioned in said chambers for connection with a Coulter type device or the like, such that an electric path may be established through each aperture, with the electrode in the first chamber being common to said paths.

3,444,465

PROBE FOR A GRAPHIC COMMUNICATION SYSTEM INCLUDING MEANS FOR ELIMINATING SHUNT CAPACITANCE EFFECTS

James F. Teixeira, Hudson, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed July 5, 1966, Ser. No. 562,725
Int. Cl. G01r 31/02; H01h 9/06
U.S. Cl. 324—72.5 7 Claims



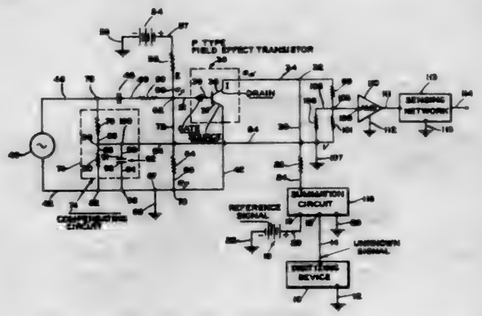
A probe for a graphic communication system. A standard metallic ballpoint pen refill including a writing tip is enclosed within a casing with the writing tip extending through an opening at one end of the casing. The ballpoint pen refill, upon pressure being applied to the writing tip, is caused to be moved within the casing and to make electrical connection with a contact member fixedly mounted within the casing in the path of movement of the refill. In this latter position, the refill conducts electrical signals to a unity gain amplifier connected to the contact member. The output of the amplifier is applied to an output conductor and also to an electrically-conductive guard tube between the refill and the casing and surrounding the refill. The output of the amplifier maintains the guard tube and the refill at the same potential thereby effectively eliminating shunt capacitance present between the refill and the casing.

3,444,466

APPARATUS FOR DETECTING THE LEVEL OF AN UNKNOWN VOLTAGE RELATIVE TO THE LEVEL OF A KNOWN VOLTAGE

John J. Lotwis, Jr., New Milford, N.J., assignor to The Bendix Corporation, a corporation of Delaware

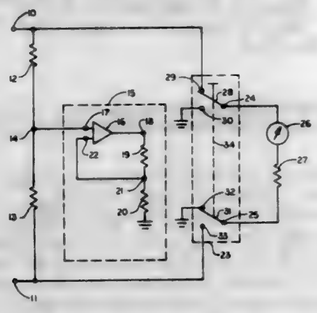
Filed Mar. 10, 1965, Ser. No. 438,543
Int. Cl. G01r 17/02, 19/22
U.S. Cl. 324—98 6 Claims



A voltage level detector including means for providing a summation voltage having a polarity in accordance with the difference between known and unknown voltages.

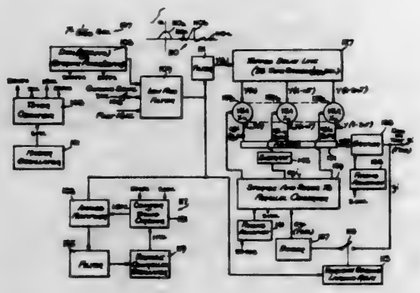
A current flow control device is connected at its input to an A.C. voltage source and is biased by the summation voltage and by a D.C. voltage to provide an output having a phase relation to the A.C. input, and which output is detected by comparing the phase angles of the input and output voltages.

3,444,467
METER AND ALARM CIRCUIT INCLUDING SWITCHING MEANS FOR MEASURING EITHER OF TWO POTENTIALS AND AMPLIFIER TRIGGERING MEANS FOR COMPARING THE TWO POTENTIALS
Arnie L. Cliffgard, Fountain Valley, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed Dec. 8, 1967, Ser. No. 689,046
Int. Cl. G01r *19/14*; G08b *21/00*
U.S. Cl. 324—133 1 Claim



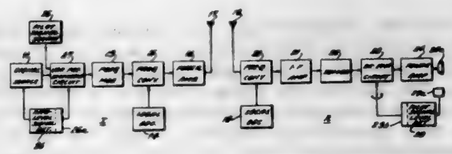
An improved alarm circuit for use with measuring instrumentation such as pH, oxygen, etc. employing a meter which can be switched to measure either the input potential or the set point reference potential and a potentiometric amplifier provided with positive feedback and having a dead band to actuate an alarm signal when the input potential exceeds the set point potential a predetermined amount.

3,444,468
DATA TRANSMISSION METHOD AND SYSTEM UTILIZING ADAPTIVE EQUALIZATION
Paul R. Drouilhet, Jr., Lexington, and Jerry L. Holsinger, Bedford, Mass., assignors to Massachusetts Institute of Technology, Cambridge, Mass., a corporation of Massachusetts
Continuation of application Ser. No. 471,948, July 14, 1965. This application Oct. 20, 1965, Ser. No. 506,421
Int. Cl. H04b *1/12, 3/04*
U.S. Cl. 325—42 17 Claims



Equalization system for data that has been distorted by transmission. The adjustable gain factors of the equalizer are corrected on the basis of reducing each of a sequence of signals representative of the output errors of the equalizer by a uniform factor and applying the reduced values to the gain factors on a one to one basis. The equalizer is realized using analog or digital tapped delay lines. Adaptive equalization may be obtained by transmitting reference signals in the form of pseudonoise or other two level sequences with the data, which allows updating of the equalizer in the presence of data. Sampling in accordance with the nulls of an out-of-phase pilot tone eliminates problem tail distortion.

3,444,469
VARIABLE-EMPHASIS COMMUNICATIONS SYSTEM OF THE FREQUENCY OR PHASE-MODULATION TYPE
Masahisa Miyagi, Tokyo, Japan, assignor to Nippon Electric Company Limited, Tokyo, Japan, a corporation of Japan
Filed Apr. 13, 1966, Ser. No. 542,301
Claims priority, application Japan, Apr. 16, 1965, 40/22,492
Int. Cl. *1/62, 1/10*
U.S. Cl. 325—46 7 Claims



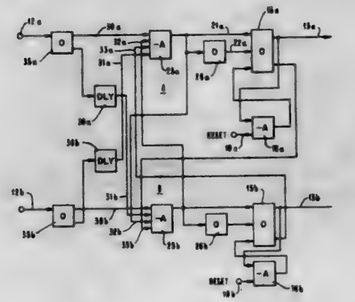
A communications system employing variable emphasis circuits with both receiver and transmitter facilities to obtain the most advantageous compromise between signals and noise ratio and signals and distortion ratio, wherein both ratios are vastly improved to improve the overall transmission quality. The transmitter emphasis circuit is automatically adjusted in accordance with the information signal level of signals derived from an information signal source. A pilot signal source of invariant amplitude is applied to the transmitter emphasis circuit whose output frequency modulates the carrier. The pilot signal lies in the higher frequency region. The variable de-emphasis circuit provided in the receiver facility is automatically adjusted by the output of a comparator circuit which compares the level of the pilot signals components of the receive signal against a local reference signal source.

ERRATUM

For Class 325—204 see:
Patent No. 3,444,471

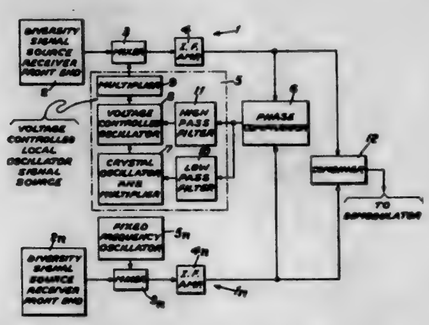
3,444,470
PULSE DISCRIMINATING LATCH
Murray H. Bolt and Howard H. Nick, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Jan. 13, 1966, Ser. No. 520,334
Int. Cl. H03k *5/20*
U.S. Cl. 328—109 8 Claims

This disclosure teaches an improved pulse discriminating latch, a sequential circuit having a plurality of input terminals and output terminals and operable in response to a signal at an input terminal to produce a signal at the corresponding output terminal and to become nonresponsive to any subsequent pulses. This invention provides improved timing so that the circuit can discriminate between two pulses that are as close together as one-half



the delay of the logic circuits that make up the pulse discriminating latch.

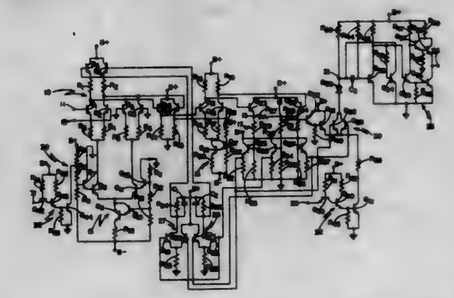
3,444,471
DIVERSITY RECEIVING SYSTEM WITH A VOLTAGE CONTROLLED OSCILLATOR COUPLED TO A CRYSTAL CONTROLLED OSCILLATOR IN AT LEAST ONE CHANNEL
Heyward A. French, Ridgewood, N.J., assignor to International Telephone and Telegraph Corporation, a corporation of Delaware
Filed Apr. 28, 1966, Ser. No. 545,982
Int. Cl. H04b *1/06*
U.S. Cl. 325—304 10 Claims



A diversity receiver of the predetection combining type which includes: a voltage controlled oscillator coupled to the output of a crystal controlled oscillator in at least one of the channels of the receiver; a phase control means responsive to the signals in the channels of the diversity receiver to control the crystal controlled oscillators and the voltage controlled oscillators to vary the phase relation of said signals and a means to combine said signals.

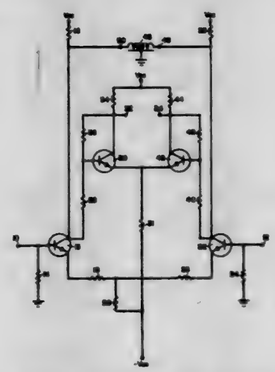
3,444,472
SENSE AMPLIFIER CIRCUIT
Brant T. Johnson, Cambridge, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed June 12, 1967, Ser. No. 645,427
Int. Cl. H03f *1/34, 1/08*
U.S. Cl. 330—25 10 Claims

Sense amplifier circuit including differential amplifier section. Two outputs from the amplifier section are used to produce a reference voltage independent of input signals. The two outputs are compared with the reference voltage in a comparison circuit in order to detect an input signal and to produce an output signal. A feedback arrangement compares the outputs and the reference voltage



and adjusts conditions at the input portion of the amplifier in order to balance the quiescent operating conditions. The circuit is amenable to fabrication in monolithic integrated circuit form.

3,444,473
FAST RECOVERY READ AMPLIFIER
Michael Sherman, Granada Hills, Calif., assignor to Singer-General Precision, Inc., a corporation of Delaware
Filed Dec. 23, 1965, Ser. No. 515,929
Int. Cl. H03f *3/68*; H03k *17/26, 17/28*
U.S. Cl. 330—30 4 Claims

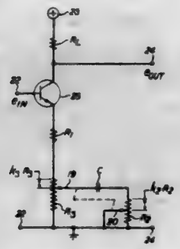


A read amplifier particularly suitable for high speed readout of magnetic memory elements uses a pair of DC amplifiers coupled by a delay line. Pulse pairs of opposite polarity are fed into the amplifiers. The output signal from each amplifier is used to quench the output of the opposite amplifier after the delay period of the delay line to provide a fast recovery for each DC amplifier.

3,444,474
ACTIVE EQUALIZER CIRCUIT
David P. Borenstein, Red Bank, and Arden B. Wright, Ocean Township, Monmouth County, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 10, 1965, Ser. No. 512,991
Int. Cl. H03f *3/04*
U.S. Cl. 330—31 5 Claims

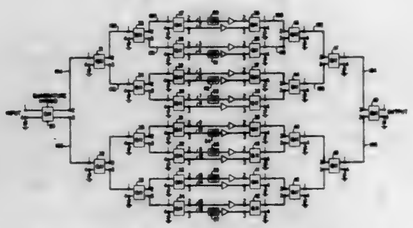
1. An equalizer comprising:
an amplifier,
means for energizing said amplifier;
a first potentiometer having first and second fixed terminals and a variable contact, said first fixed terminal connected to said amplifier;

a second potentiometer having first and second fixed terminals and a variable contact;
capacitor means connected between said first fixed terminal of said second potentiometer and the variable contact of said first potentiometer;



means connecting said second fixed terminals of said potentiometers and the variable contact of said second potentiometer;
and means for simultaneously controlling the movement of said variable contacts of said potentiometers.

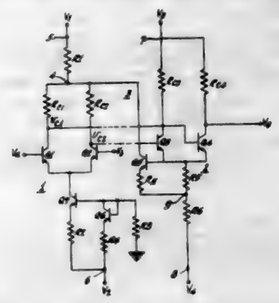
3,444,475
BROADBAND HYBRID-COUPLED CIRCUIT
Harold Seidel, Warren Township, Somerset County, N.J., assignor to Bell Telephone Laboratories, Incorporated, Berkeley Heights, N.J., a corporation of New York
Filed Apr. 19, 1967, Ser. No. 632,058
Int. Cl. H03f 3/60
U.S. Cl. 330—53 3 Claims



This application describes a broadband hybrid-coupled fan-out circuit wherein the broadbanding is obtained by the particular location of 180 degree phase shifters in the several branches of the fan-out. Specifically, for any pair of symmetrically-situated input and output hybrids, the electrcal lengths of the branches located along one of the two wavepaths connecting said pair of hybrids differ from the electrical lengths of the corresponding branches located along the other interconnecting wavepath by 180 degrees over the band of operating frequencies.

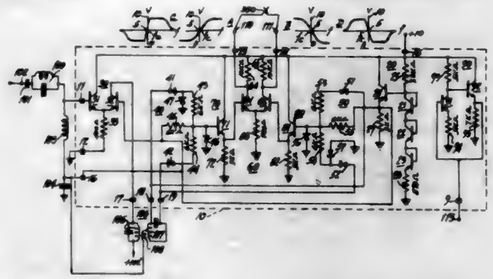
3,444,476
DIRECT COUPLED AMPLIFIER WITH FEEDBACK FOR D.C. ERROR CORRECTION
Arthur J. Leidich, New Brunswick, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Mar. 19, 1965, Ser. No. 441,090
Int. Cl. H03f 1/34, 3/42
U.S. Cl. 330—69 17 Claims

A direct coupled differential amplifier having a direct coupled feedback path to stabilize transistor base-emitter junction variations and other variations, such as power supply fluctuations, is described. According to one feature, the feedback path is from the common emitter connection of the subsequent stage to a common load impedance element in the preceding stage. According to another feature, D.C. feedback is accomplished in a single differential stage having a constant current source transistor by coupling undesirable D.C. signals from the common emitter point of the differential stage by way of the



base-emitter junction of a feedback transistor to the base or control input of the constant current source transistor.
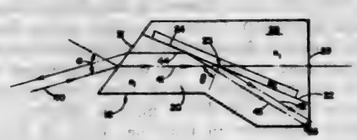
3,444,477
AUTOMATIC FREQUENCY CONTROL APPARATUS ESPECIALLY SUITABLE FOR INTEGRATED CIRCUIT FABRICATION
Jack Avins, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Continuation-in-part of application Ser. No. 620,006, Mar. 2, 1967. This application June 26, 1967, Ser. No. 648,667
Int. Cl. H03b 3/08
U.S. Cl. 331—8 33 Claims



Automatic frequency control circuitry especially suitable for fabrication using integrated circuit techniques includes a pair of symmetrical detector networks driven from a common phase-shift circuit to provide push-pull voltages to the opposite sides of a differential amplifier, an output voltage of which is indicative of the frequency deviation of a heterodyned signal from a predetermined reference frequency and is used to control a variable reactance device included in a local oscillator unit employed in providing the heterodyning function.

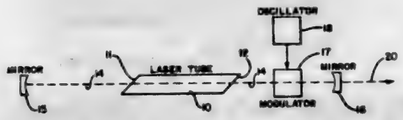
3,444,478
BLEACHABLE REFLECTANCE OUTPUT COUPLER
Richard Austin Gudmundsen, Santa Ana, and Earl L. Steele, Newport Beach, Calif., assignors to North American Rockwell Corporation, a corporation of Delaware
Filed May 12, 1966, Ser. No. 549,639
Int. Cl. H01s 3/02
U.S. Cl. 331—94.5 10 Claims

1. An output coupler for a pulsed laser beam comprising means for reflecting radiation pulses received from a pulsed laser, said means including a bleachable reflectance means which is highly reflective for a preselected time and which is changed to a condition of high transmissivity after a preselected exposure to radiation, and means optically coupled to said bleachable reflectance



means for transmitting radiation pulses passed by said bleachable means.

3,444,479
METHOD AND APPARATUS FOR PRODUCING A FREQUENCY MODULATED LASER BEAM
Stephen E. Harris and Russell Targ, Palo Alto, Calif.; said Targ assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Feb. 2, 1965, Ser. No. 429,831
Int. Cl. H01s 3/05, 3/10, 3/22
U.S. Cl. 331—94.5 6 Claims



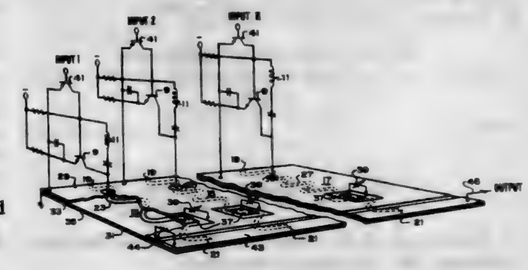
1. Apparatus for producing a laser beam with frequency modulation sidebands comprising:
a laser oscillator having an optical cavity of predetermined optical length L and characterized by being capable of oscillating in a plurality of independent cavity modes
said cavity modes having an average frequency spacing ω_m equal to

$$\frac{\pi c}{L}$$

where c is the velocity of light,
means for modulating the optical length L of said optical cavity, and
means forming a signal generator for generating a radio frequency oscillator signal having a frequency ω_0,
means for electrically coupling said signal generator means to said modulator means to produce phase modulation of said laser oscillator output at the radio frequency ω_0,
the frequency ω_0 of the radio frequency oscillator signal being approximately but not exactly equal to said cavity mode spacing ω_m,
whereby said laser is caused to oscillate with frequency modulation sidebands having nearly Bessel function amplitudes.

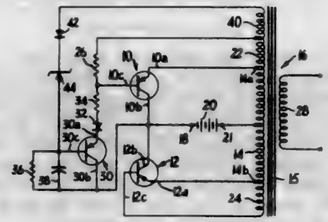
3,444,480
HIGH FREQUENCY OSCILLATOR EMPLOYING A TRANSMISSION LINE HAVING AN ELECTRICALLY ADJUSTABLE SECTION OF GROUND PLANE
Alexander Tykulsky, Menlo Park, Calif., and Charles A. Kingsford-Smith, Loveland, Colo., assignors to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Aug. 9, 1967, Ser. No. 659,353
Int. Cl. H03b 5/18, 7/12
U.S. Cl. 331—96 5 Claims

A transistorized oscillator uses an etched-circuit transmission line as the frequency-determining element and uses the transit time through the transistor as a portion of



the requisite phase shift around the feedback loop to sustain oscillations.

3,444,481
INVERTER STARTING CIRCUIT
William W. Fisher, Woodstock, N.Y., assignor to Rotron Manufacturing Company, Inc., Woodstock, N.Y., a corporation of New York
Filed May 31, 1967, Ser. No. 642,432
Int. Cl. H03k 3/281
U.S. Cl. 331—113 6 Claims

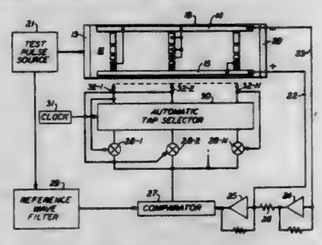


A starting circuit for inverters of the type including a pair of transistors having output electrodes connected to the output winding of transformer and control electrodes connected to feed-back windings on the transformer to render the transistors alternately conducting, in which the input and output electrodes of a third transistor are connected in a series path between the control electrode of one of the pair of transistors and a terminal of a direct current source so as to positively drive the one transistor into an initially conductive condition when the third transistor is conductive. A timing circuit isolates the starting transistor from the inverter after a predetermined time by biasing the starting transistor to cut-off.

3,444,482
ADJUSTABLE DELAY LINE FILTER HAVING PLURALITY OF BINARILY WEIGHTED SEGMENTS AFFIXED TO A BODY OF PIEZOELECTRIC MATERIAL
Floyd K. Becker, Colts Neck, N.J., assignor to Bell Telephone Laboratories, Incorporated, Berkeley Heights, N.J., a corporation of New York
Filed May 1, 1967, Ser. No. 635,048
Int. Cl. H04b 3/04; H02n 1/00
U.S. Cl. 333—18 9 Claims

A longitudinally excited acoustic delay line provided with transverse piezoelectric receivers has these receivers divided into binarily weighted segments. Selective connection of certain of these segments to a common output imparts to the delay line of fixed, but arbitrarily chosen, response characteristic. A desired response char-

acteristic results from selection of appropriate segments by automatic transversal equalizer techniques involving



a comparison of the responses of the delay line and a reference filter to identical test pulses.

3,444,483

PULSE BIAS CIRCUIT UTILIZING A HALF-WAVELENGTH SECTION OF DELAY LINE

Erich O. Schulz-Du Bois, Oldwick, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Feb. 23, 1966, Ser. No. 529,398
Int. Cl. H03h 7/30
U.S. Cl. 333—29 **7 Claims**



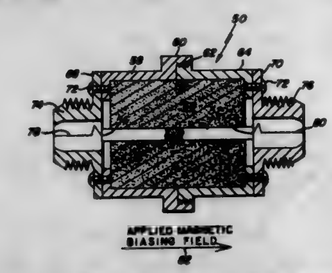
A half-wavelength section of delay line is used as a power storing medium in a pulse biasing circuit for use with reactive loads. By interposing the delay line between the pulse source and the reactive load, the energy reflected at the load can be stored and reused. The arrangement is designed to reduce the average power dissipated in the biasing circuits of electro-optic modulators by from 90 to 99 percent. The circuit can be used to handle periodic or quasi-periodic pulse sequences.

3,444,484

SOLID STATE DELAY LINE FOR PROPAGATION OF MICROWAVE FREQUENCY ENERGY IN SPIN WAVE MODE

Robert W. Bierig, Sudbury, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware

Filed Apr. 3, 1967, Ser. No. 627,951
Int. Cl. H03h 9/00, 9/30, 5/00
U.S. Cl. 333—30 **9 Claims**



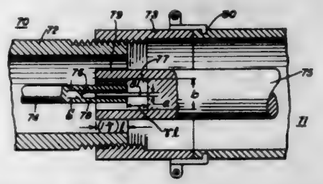
A time delay device for propagation of electromagnetic wave energy in the spin wave mode in a body of a single crystal gyromagnetic material utilizing a uniform external DC biasing magnetic field applied parallel to the longitudinal axis of the body. Surrounding the gyromagnetic body is a polycrystalline sleeve member of a magnetic material having a higher saturation magnetization value than the body. Immersion of the composite structure in an externally applied biasing magnetic field of appropriate magnitude will result in the shaping of the inhomogeneous internal magnetic field in a predetermined manner. The device is rendered in two distinct regions of delay time dispersion. Over a portion of the frequency range the device is substantially nondispersive and there will be no change of delay time with a change of the frequency of the propagated energy. Over another region of the frequency range the device may be referred to as being linearly dispersive in that the slope of delay time curve increases linearly with incremental changes in frequency.

3,444,485

SINGLE ADJUSTMENT, VARIABLE SELECTIVITY-CONSTANT FREQUENCY COAXIAL TRANSMISSION LINE FILTER

Herman C. Okean, Huntington, N.Y., assignor to Bell Telephone Laboratories, Incorporated, Berkeley Heights, N.J., a corporation of New York

Filed Mar. 17, 1967, Ser. No. 624,043
Int. Cl. H01p 7/00; H03j 3/22
U.S. Cl. 333—73 **9 Claims**



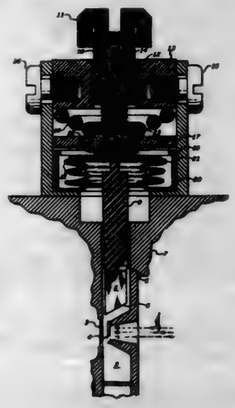
The invention described is a single-adjustment, variable-selectivity resonator intended for use as a bandpass filter. Each of the family of resonators disclosed utilizes a pair of ganged sections of coaxial transmission line as a variable inductance and a variable capacitance. The sections are adapted such that changing the length of either section correspondingly alters the length of the other section in a manner to produce a continuously variable L–C ratio while maintaining an essentially constant L–C product.

3,444,486

DIELECTRIC SUPPORTED POSITIONABLE INDUCTIVE TUNER FOR RESONATORS

Nathan M. Banes, John D. Feehan, and Raymond M. Stepura, Gainesville, Fla., assignors to Sperry Rand Corporation, a corporation of Delaware

Filed Dec. 13, 1966, Ser. No. 601,476
Int. Cl. H01p 7/06
U.S. Cl. 333—83 **4 Claims**



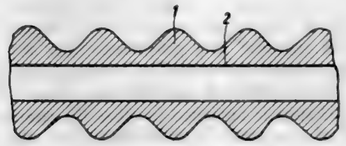
A turnable resonant cavity equipped with a longitudinally extensive dielectric tuning probe, one end portion of which is covered with a conductive material. The probe is variably inserted longitudinally into the resonant cavity to adjust the frequency thereof by varying the penetration of the conductive portion of the probe into the cavity magnetic field. Solely the uncovered dielectric portion of the probe slidably engages the cavity wall through which insertion is made.

3,444,487

WAVEGUIDE HAVING CORRUGATED EXTERIOR AND SMOOTH METAL-COATED INTERIOR

Wolfgang Krank and Gerhard Schickle, Backnang, Wurttemberg, Germany, assignors to Telefunken Patentverwertungsgesellschaft m.b.H., Ulm (Danube), Germany

Filed Oct. 3, 1966, Ser. No. 583,769
Claims priority, application Germany, Oct. 1, 1965, T 29,512
Int. Cl. H01p 3/12, 3/14
U.S. Cl. 333—95 **17 Claims**



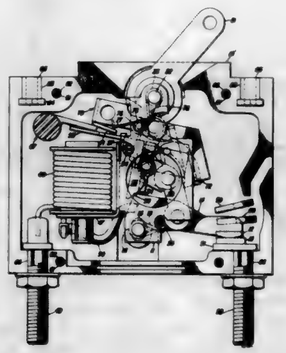
A flexible waveguide structure, which has a non-circular internal cross section, is provided with a hollow dielectric support tube whose outer surface is corrugated and defines the outer wall of such waveguide structure and a thin metal layer disposed on the inner surface of the support tube which defines a smooth inner wall for such structure.

3,444,488

MULTIPOLE CIRCUIT BREAKER

George S. Harper, Cambridge, Md., assignor to Airpax Electronics Incorporated, Cambridge, Md., a corporation of Maryland

Filed Feb. 23, 1967, Ser. No. 618,001
Int. Cl. H01h 75/00, 77/02, 83/00
U.S. Cl. 335—10 **6 Claims**



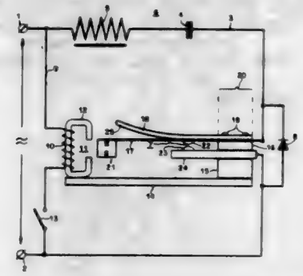
A multipole circuit breaker allowing selective manual making and breaking of the poles and automatic simultaneous breaking of the poles under a circuit overload condition by means of a continuous trip bar disposed between the striker of the trip lever and the armature of the electromagnet of each pole.

3,444,489

OSCILLATORY CIRCUIT WITH VIBRATORY SWITCH

Alex Nyfeler, Baar, Zug, Switzerland, assignor to Electrometre S.A., Zug, Switzerland, a body corporate of Switzerland

Filed Jan. 9, 1967, Ser. No. 607,987
Claims priority, application Switzerland, Jan. 13, 1966, 458/66
Int. Cl. H01h 51/34
U.S. Cl. 335—87 **16 Claims**



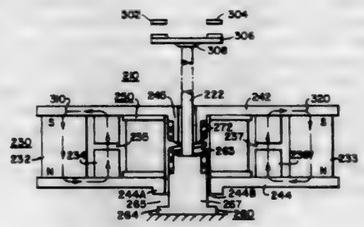
A vibratory switch arrangement for delivering controlled pulses to a transmission network having an oscillatory contact-carrying blade electromagnetically driven and means including a shaped stop for controlling the period and transient behavior of the switch.

3,444,490

ELECTROMAGNETIC STRUCTURES FOR ELECTRICAL CONTROL DEVICES

Donald E. Krummel and David L. Bowles, Lima, Ohio, assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

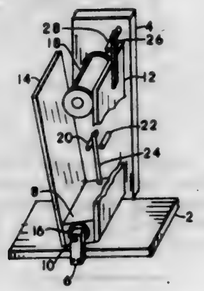
Filed Sept. 30, 1966, Ser. No. 583,362
Int. Cl. H01h 67/02, 9/20
U.S. Cl. 335—126 **8 Claims**



1. An electromagnetic structure comprising a pair of substantially parallel, spaced magnetic plates, at least one outer magnetic member disposed to extend between the plates with a predetermined non-magnetic gap between each outer leg member and the plates, a central magnetic leg member extending from one plate toward the other plate for only a portion of the spacing between the plates, said other plate including a central opening substantially aligned with the central leg member, an armature disposed to pass through the opening in said other plate and to move reciprocally between a first position in which one end of the armature is disposed adjacent to the central leg member and a second position in which said one end is spaced away from the central leg member by a predetermined non-magnetic gap, means for biasing the armature toward the second position, one or more permanent magnetic members disposed to extend between the plates to provide a magnetic flux which passes through the armature and the central leg member to latch the armature in the first position, and

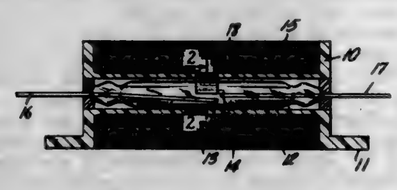
means for actuating the armature between the first and second positions including coil means disposed between the plates around the central leg member and said one end of the armature, said coil means being energizable to actuate most of the magnetic flux from the permanent magnetic members between a first path which includes the armature and the central leg member and second path which includes the outer leg member.

3,444,491
BINARY RELAY UTILIZING ARMATURE INERTIA FOR SHIFTING BINARY POSITIONS
Ranald O. Whitaker, 3145 N. Delaware, Indianapolis, Ind. 46205
Filed Dec. 5, 1966, Ser. No. 599,036
Int. Cl. H01h 67/02
U.S. Cl. 335—128 8 Claims



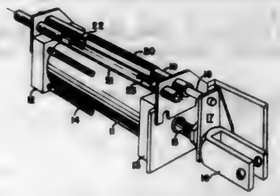
An electromagnet fixed to a base is positioned between the arms of a U-shaped armature. The armature is pivotally mounted to the base so that as one arm is drawn to the magnet, the other moves away. For the off condition of the electromagnet, the armature has two stable positions. The first is with the first arm nearer the magnet. The second is with the second nearer the magnet. Consider the armature to be in the first stable position. When the magnet is activated, the first arm is drawn to the magnet, operating electrical contacts associated with the armature, and distorting a spring. When the magnet is deactivated, energy stored in the return spring throws the armature to the second stable positions. Upon a second activation of the electromagnet, the second arm is drawn to the electromagnet, operating associated electrical contacts if any, and distorting a return spring. Upon a second reactivation, the spring returns the armature to the first stable position.

3,444,492
ARC DEPRESSING MEANS FOR SEALED RELAY
Edward Swiderski, Hazlet, N.J., assignor to Wheelock Signals, Inc., Long Branch, N.J., a corporation of New Jersey
Filed Jan. 4, 1967, Ser. No. 607,222
Int. Cl. H01h 9/30, 1/66, 51/28
U.S. Cl. 335—201 2 Claims



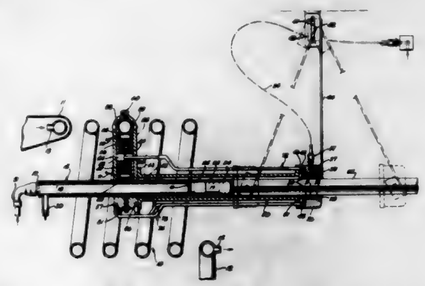
A sealed relay structure in which provision is made for mounting a permanent magnet externally of a sealed capsule containing overlapping contacts. The permanent magnet produces a magnetic flux in a plane passing between the contacts to prevent arcing.

3,444,493
MAGNETICALLY OPERATED REED SWITCH ASSEMBLY
Gerardus Wilhelmus Elisabeth Nieuwhof, Georgetown, Ontario, Canada, assignor to Atomic Energy of Canada Limited, Ottawa, Ontario, Canada, a corporation of Canada
Filed Aug. 29, 1966, Ser. No. 575,686
Int. Cl. H01h 51/28, 1/66, 9/02
U.S. Cl. 335—206 1 Claim



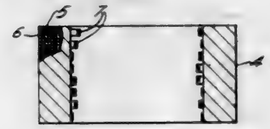
A magnet operated reed switch wherein a permanent magnet on the end of a slidable rod within a ferromagnetic shield tube is arranged to close the contacts of one or other of two reed switches positioned adjacent each end of the tube, when the magnet is exposed at the end of the shield tube adjacent the appropriate reed switch. The slidable rod would be connected to the mechanism whose travel is to be limited e.g., a piston in a hydraulic cylinder and the length of the shield tube would be of such length as to allow the switching action of the reed switches to occur at the desired position of travel of the slidable rod.

3,444,494
HIGH POWER VARIABLE INDUCTOR
John T. Lierley, La Habra, and Kenneth E. Clissett, Newport Beach, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Nov. 17, 1967, Ser. No. 683,879
Int. Cl. H01f 27/10, 29/06; H01c 5/00
U.S. Cl. 336—62 4 Claims



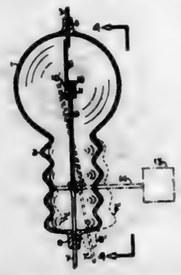
The device of the present invention provides a stepless variable inductor with firm contact at any specified inductance within the range of the coil without using sliding or rolling contacts. Stepless contact is achieved by means of a rotary hydraulic interface which enables the use of a bellows-operated clamp contactor featuring pressure actuation and liquid cooling. An inherent advantage of this device is the firm grip contact with the coil and center tube effected by a non-magnetic clamping mechanism which disposes of problems of burning at the point of contact and over heating of the actuation device by the high power electromagnetic field.

3,444,495
SUPERCONDUCTORS
David Brynmor Thomas, Abingdon, England, assignor to Science Research Council, London, England
Filed Oct. 16, 1967, Ser. No. 675,620
Claims priority, application Great Britain, Oct. 18, 1966, 46,634/66
Int. Cl. H01f 27/28
U.S. Cl. 336—223 5 Claims



A composite electrical conductor comprises a length of superconductor and a normal conductor of high electrical conductivity which parallels the superconductor and to which the superconductor makes good electrical contact at predetermined intervals along the length of the superconductor. A coil embodying this principle may consist of a hollow copper cylinder with a superconductor wound therein and contacting it at circumferential intervals.

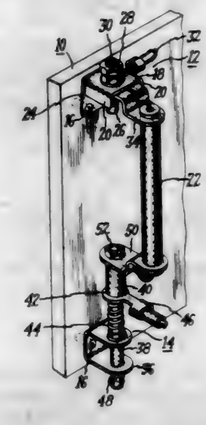
3,444,496
REPEATER THERMOSTAT
Henry Greber, 225 W. 80th St., Apt. 8–D, New York, N.Y. 10024
Filed Aug. 9, 1967, Ser. No. 659,843
Int. Cl. H01h 61/01, 71/16, 71/02
U.S. Cl. 337—91 5 Claims



A resettable thermostat for controlling a circuit in which a bimetal member and a spring member each have a contact surface at their free ends in overlapping circuit closing engagement. The contact surfaces are separated and the circuit opened by movement of the bimetal beyond and to the other side of said spring member. Insulation on the end surface of the bimetal opposite the contact surface is interposed between the members when they re-engage to maintain the circuit open. Means in the form of a flexible portion on the enclosure is provided for returning the members to a closed circuit position.

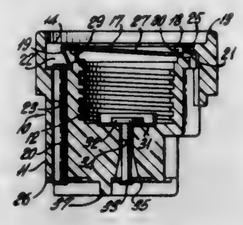
3,444,497
HOLDER FOR MOUNTING REMOVABLE FUSE IN ELECTRICAL APPARATUS
Albert J. Charbonneau, Pittsfield, Mass., assignor to General Electric Company, a corporation of New York
Filed Sept. 21, 1967, Ser. No. 669,569
Int. Cl. H01h 85/02, 85/46
U.S. Cl. 337—188 3 Claims

A fuse holder for mounting a removable fuse in an electrical apparatus. The fuse holder includes a pair of terminal members secured to an insulated board within the electrical apparatus. One of the terminal members includes an electrical lead and a guide member secured to the stationary contact for mounting one end of a fuse.



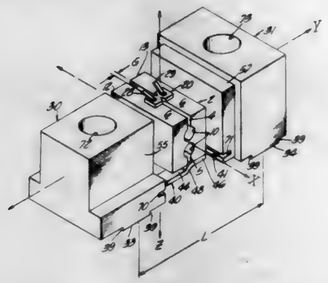
The other terminal member has a spring mounted contact member mounted in a guide bracket secured to the insulated board. The spring mounted contact member has an electrical lead and a bore member for receiving a bolt from the fuse for mounting the other end of the fuse.

3,444,498
FUSE HOLDER FOR S-TYPE FUSES
Wolfgang F. Bienwald, Huntington Station, and Herbert W. Tum Suden, Jr., Floral Park, N.Y., assignors to Leviton Manufacturing Co., Inc., Brooklyn, N.Y., a corporation of New York
Filed Oct. 10, 1967, Ser. No. 674,239
Int. Cl. H01h 85/24
U.S. Cl. 337—226 10 Claims



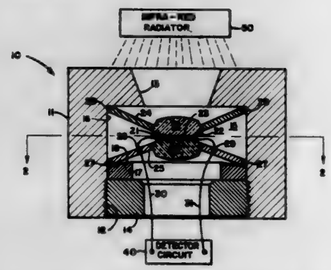
A fuse holder for an S-type fuse which is dimensioned to permit mounting of the fuse holder in existing mounting panels and which has a molded one-piece receptacle body having an internally threaded socket cavity formed therein for reception of the threaded ceramic end of an S-type fuse. The socket cavity is open at its top and a center contact is located at the bottom of the socket cavity. A second or upper contact in the form of a flat ring-shaped member is supported on an annular shoulder which surrounds the socket cavity at the top thereof. The upper contact has a terminal extension of Z-shaped configuration and an elongated connecting link is attached thereto. The terminal extension is located in a recess formed in the annular shoulder surrounding the opening to the socket cavity and the connecting link extends through a passageway formed in the side walls of the receptacle body to the bottom thereof.

3,444,499
STRAIN GAUGE
Donald E. Lovelace, Los Angeles, Calif., assignor to Endevco Corporation, Pasadena, Calif., a corporation of California
Filed Jan. 16, 1967, Ser. No. 609,553
Int. Cl. G01l *1/22*
U.S. Cl. 338—2 **14 Claims**



Strain across a pair of widely spaced points of a test object is transferred to a short piezoresistive strain sensing element. The strain occurring between points on the test object is transmitted through leaf springs to a flexural slotted rectangular lever block. The relative displacement of the faces of two slots in the block is detected by displacement sensors bonded to transverse surfaces at the ends of the slots. The gauge may be bolted or glued in place. Strains of the order of microinches per inch are easily detected.

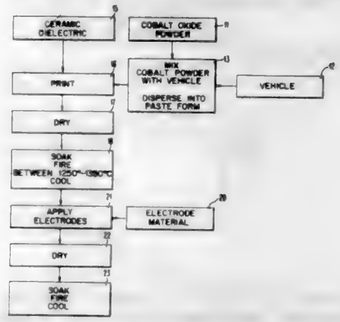
3,444,500
METHOD AND APPARATUS FOR EXTENDING THE LONG-WAVELENGTH SPECTRAL RESPONSE OF INTRINSIC PHOTOCONDUCTORS
Phillip John Joseph, North Tonawanda, N.Y., assignor to Cornell Aeronautical Laboratory, Inc., Buffalo, N.Y., a corporation of New York
Filed Sept. 9, 1966, Ser. No. 578,396
Int. Cl. H01c *7/08*
U.S. Cl. 338—18 **5 Claims**



An infra-red detector having an intrinsic photoconductor exposed to infra-red radiation and located between two pressure applying anvils to reduce the energy gap of the photoconductor and increase its spectral response.

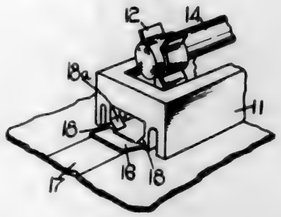
3,444,501
THERMISTOR AND METHOD OF FABRICATION
Ronald A. Delaney, Wappingers Falls, N.Y., and Jesse J. Williams, Jr., Santa Monica, Calif., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed May 16, 1966, Ser. No. 550,229
Int. Cl. H01c *7/04, 17/00;* **H01b** *1/02*
U.S. Cl. 338—22 **10 Claims**

Thermistors are formed by mixing cobalt oxide powder and an inert liquid vehicle, applying the mixture in paste form to a ceramic dielectric, firing at a temperature between 1,250–1,350° C., and preferably 1,275–1,325° C., to form a thermistor element consisting of cobaltic oxide Co_3O_4 having an amorphous surface and, after cooling,



applying electrodes to complete the thermistor. Dopants may be mixed with the cobalt oxide powder, prior to dispersal in the vehicle, to raise or lower resistivity of the resulting thermistor.

3,444,502
MEANS FOR MAKING AN ELECTRICAL CONNECTION BETWEEN AN ELECTRICAL COMPONENT AND A PRINTED CIRCUIT
Benjamin William Matthews, Birmingham, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England
Filed Dec. 22, 1966, Ser. No. 604,005
Claims priority, application Great Britain, Jan. 26, 1966, 3,442/66
Int. Cl. H05k *1/00;* **H01v** *3/00;* **H01h** *85/20*
U.S. Cl. 339—17 **1 Claim**

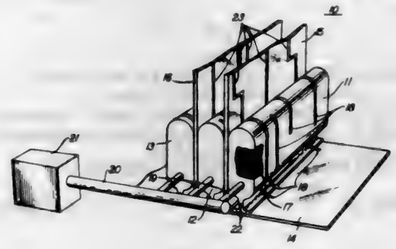


Means for making an electrical connection between an electrical component and a printed circuit board comprises a resilient contact which extends from the body of the component so that when the component is secured in position relative to the printed circuit the contact makes contact with an exposed portion of the printed circuit. The body of the component is provided with a resilient catch with which the resilient contact can be engaged to lock the resilient contact in a stressed position in engagement with the printed circuit.

3,444,503
CONNECTOR FOR ELECTRICAL CIRCUIT BOARD
Paul Mallery, Murray Hill, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed June 7, 1967, Ser. No. 644,356
Int. Cl. H01r *11/02, 3/02;* **H05k** *1/04*
U.S. Cl. 339—61 **8 Claims**

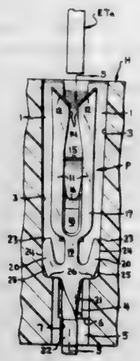
A terminal connector for a circuit board employs two hermetically sealed connector units each filled with a resilient material. The terminal connections for a circuit board with edge mounted strip terminals are effected by inserting the board between the units so that the ter-

minals of the board are in registry with corresponding conductive strips on the units. Contact force is kept to a



minimum during board insertion and withdrawal by evacuating the units through a vacuum line.

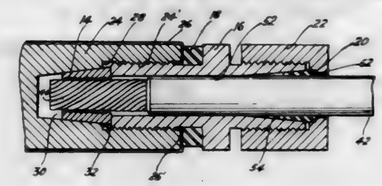
3,444,504
ELECTRICAL CONNECTOR HAVING STABILIZING MEANS AND FREE-FLOATING CONTACT SECTION
James Edward Lynch, Harrisburg, Dexter Wyman Erline, Lititz, and Ronald Charles Morehart, York Haven, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Filed Jan. 19, 1967, Ser. No. 610,315
Int. Cl. H01r *21/28, 9/08*
U.S. Cl. 339—64 **13 Claims**



An electrical connector comprises a contact section and a securing section disposed in a passageway of a dielectric housing with the securing section and the passageway including means to secure the connector in position and ear means engageable with surfaces of the passageway to permit freedom of movement of the contact section for mateable alignment with another electrical connector.

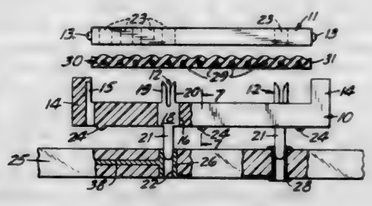
3,444,505
CONNECTOR ASSEMBLY
Stephen P. Becker, Poughkeepsie, N.Y., assignor to Fargo Mfg. Company, Inc., Poughkeepsie, N.Y., a corporation of New York
Filed Jan. 17, 1967, Ser. No. 609,935
Int. Cl. H01r *7/02, 13/24, 7/08*
U.S. Cl. 339—94 **2 Claims**

A rugged and compact electrical cable connector assembly for direct burial applications providing permanent, water-tight insulated junctions for both secondary phase and neutral conductors including in combination a body formed of an electrically conducting material, arms extending from said body, an arm bore provided in each of said arms, an insulating coating of said body extending partially into each of said bores, attaching means for



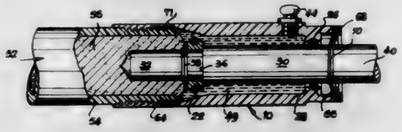
attaching one of said conductors within one of said bores, and first and second sealing means for respectively providing sealing between said attaching means and said respective bore and said attaching means and said respective conductor.

3,444,506
CONNECTOR
Albert D. Wedekind, West St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed June 5, 1967, Ser. No. 643,714
Int. Cl. H01r *11/20*
U.S. Cl. 339—99 **9 Claims**



Multi-connector having perforate flat base and matching top contains solderless wire-connector contact elements having extended tabs for making direct connection between perforated printed circuit board and flat cable held between base and top.

3,444,507
ELECTRICAL CONNECTORS FOR SEMI-SOLID CONDUCTORS
Sidney Gerhard, Norwalk, Conn., assignor to Burndy Corporation, a corporation of New York
Filed Oct. 23, 1967, Ser. No. 677,292
Int. Cl. H01r *11/20, 3/02, 15/12*
U.S. Cl. 339—100 **6 Claims**



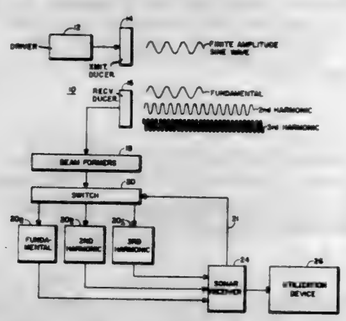
An electric terminal connector, for electrical cable of the type which has a central core of highly ductile metal enclosed within an outer insulating jacket, in which a fixed portion of the connector is secured to the cable jacket and hydraulic pressure is employed to displace a piston-like contact element relative to the fixed portion so as to urge the contact into engagement with the ductile metal core of the cable.

3,444,508
DIRECTIONAL SONAR SYSTEM
Ernest A. Granfors, Don L. Loveless, and Charles F. Boyle, Jackson, Mich., and Harry W. Kompanek, Santa Barbara, Calif., assignors to Sparton Corporation, Jackson, Mich., a corporation of Ohio
Filed Sept. 8, 1967, Ser. No. 666,405
Int. Cl. G01s 1/72
U.S. Cl. 340—2 13 Claims



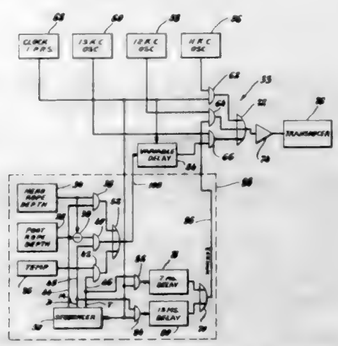
An underwater acoustic sensing system comprising a command activated floating buoy assembly connected to a submerged active electronic probe assembly containing hollow piezoelectric ceramic cylinders stacked in a vertical interstitial array. Three transducer sections are utilized having an output level and relative polarity related in accordance with the direction from which the acoustic signal being received arrives. One of the acoustic receiving patterns is omnidirectional, and the others are sine-cosine dipole patterns which have the characteristic of output level variation with bearing. The omni output provides an amplitude and phase reference for comparing the amplitude and polarities of the two bearing-sensitive signals. The resultant three signals, and compass information constitute the primary outputs of the sensing system which are transmitted to suitable decoding and radio transmission apparatus.

3,444,509
SONAR SYSTEM
Robert A. Rubega, Rochester, and Boyd B. Cary, Pittsford, N.Y., assignors to General Dynamics Corporation, a corporation of Delaware
Filed July 3, 1967, Ser. No. 650,751
Int. Cl. G01s 9/66
U.S. Cl. 340—3 8 Claims



A sonar system is described which provides both a long range search capability and a shorter range higher resolution search capability. A finite amplitude sinusoidal acoustic signal is propagated in a medium having nonlinear propagation characteristics (viz. seawater) and changes its waveform generating harmonic components which, at certain ranges, peak to maximum levels. Harmonic components of the signal at positions which correspond to ranges near their maximum intensity locations are extracted and processed to detect the presence of targets.

3,444,510
MULTICHANNEL UNDERWATER ACOUSTIC TELEMETERING SYSTEM
Clyde L. Tyndale, Falmouth, Gerald H. Efinger, Teaticket, and Samuel O. Raymond, Cataumet, Mass., assignors to Benthos, Inc., North Falmouth, Mass.
Filed Oct. 10, 1966, Ser. No. 585,671
Int. Cl. G01v 1/38
U.S. Cl. 340—5 6 Claims

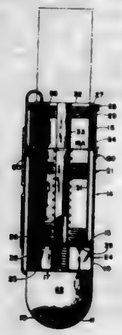


This application discloses a time division multiplex pulse position modulation telemetering system which communicates information about three variables: the depth of a fisherman's trawl net, the vertical opening of the trawl net, and the water temperature at the trawl net depth. Each sequence of information pulses begins with a reference pulse. Subsequently a data pulse occurs, the time interval between the reference pulse and the data pulse being proportional to the numerical value of the variable then being telemetered. Between the reference pulse and the data pulse a third pulse occurs, the time interval between the third pulse and the reference pulse indicating which of two variables is then being telemetered. If no third pulse occurs at all, this indicates that a third variable is then being telemetered. At the receiving end of the system, circuitry is provided which decodes the information and displays it in digital form in such a manner that the advantages of auto correlation are achieved. The receiving equipment automatically switches to accommodate itself to whichever one of the three variables is then being telemetered, and moreover automatically displays in alphabetic form an indication of which variable is then being telemetered. In addition, since two of the variables, trawl net depth and trawl net opening, are measurable in the same units, i.e. length, the receiving equipment takes advantage of this fact to reduce the amount of equipment necessary.

3,444,511
TRANSDUCER ARRAY AND ERECTING MEANS
James A. Morrow, Dallas, Tex., assignor, by mesne assignments, to LTV Aerospace Corporation, Dallas, Tex., a corporation of Delaware
Filed Jan. 2, 1962, Ser. No. 163,733
Int. Cl. H04b 13/00; F42b 21/00
U.S. Cl. 340—9 14 Claims

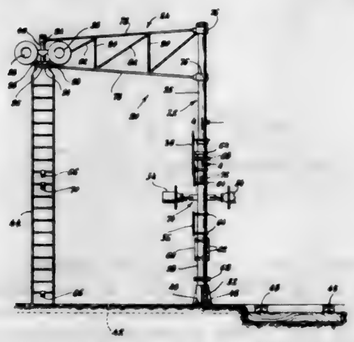
8. In combination:
a cylinder with an open end and a closed end;
an outlet and an inlet in the region of the cylinder closed end;
means permitting inflow and preventing outflow through the inlet;

a piston slidably mounted in the cylinder;
interconnected, hollow, collapsed, flexible members distensible to form a framework of predetermined configuration;
means connecting the interior of the hollow members with the cylinder interior through the outlet;
a plurality of transducers mounted on the members and so positioned as to form an array of predetermined configuration upon distension of the members;
a cable containing a plurality of electrical conductors and withdrawably stowed in the cylinder between the piston and cylinder open end, the cable having



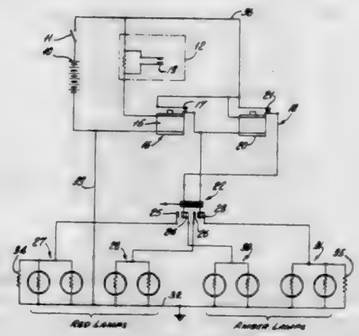
a free end withdrawable from the cylinder and also having another end;
a fixed attachment between the cable and cylinder in the region of the cable other end, whereby withdrawal of the free end from the cylinder permits lowering of the cylinder and hollow members to a desired working depth in a body of water;
electrical connection at the cable other end between the transducers and electrical conductors;
means for moving the piston away from the cylinder free end to draw water into the cylinder through the inlet at the desired working depth;
and means for moving the piston toward the cylinder closed end to force water through the outlet into the hollow members to distend the same and erect the array of transducers.

3,444,512
RAILWAY SIGNAL APPARATUS
Willard O. Reinitz, Minneapolis, Minn., assignor to Railroad Accessories Corporation, Cresskill, N.J.
Filed Feb. 28, 1966, Ser. No. 530,492
Int. Cl. B61l 29/28
U.S. Cl. 340—47 8 Claims



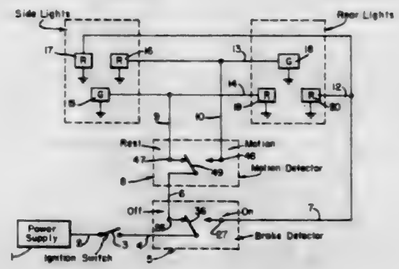
Railroad-highway crossing signal units each incorporating a stationary vertical lower mast surmounted by a vertical, rotatable upper mast connected to the top of the lower mast by mast-rotating means, with a signal-bearing cantilever arm extending over the highway from the top of the upper most, and with a separate, independent signal displayed on the stationary lower mast.

3,444,513
SCHOOL BUS FLASHER CIRCUIT
Harry Kratochvil, Fords, N.J., assignor to Wagner Electric Corporation, a corporation of Delaware
Filed May 25, 1967, Ser. No. 641,294
Int. Cl. B60q 1/00, 1/38
U.S. Cl. 340—52 7 Claims



A flasher having a pair of contacts which open and close automatically is connected in series between a source of potential and the winding of a first relay. A second relay has its winding connected across the normally open pair of contacts of the first relay so that the contacts of the second relay are opened when the first relay is actuated. Two sets of signal lamps having distinctive colors are each arranged in two groups, all the lamps being connected through a door switch to the relay contacts and the source of electric power.

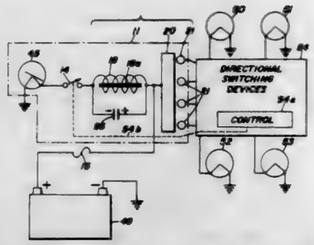
3,444,514
VEHICLE MOTION SIGNALLING SYSTEM
Wang Yang, 2, 18 Alley, Lane 360, Wu (Five), Chang St., P.O. Box 22577, Taipei, Taiwan
Continuation of application Ser. No. 469,367, June 28, 1965. This application Oct. 4, 1967, Ser. No. 672,930
Int. Cl. B60q 1/34, 1/44
U.S. Cl. 340—66 1 Claim



The disclosure relates to a signalling system for automobiles which is arranged to signal both rearwardly of the automobile and to the side. Two indications are provided, one non-restrictive and the other restrictive. A motion detecting unit is included which allows the signal system to respond to both brake conditions and motion

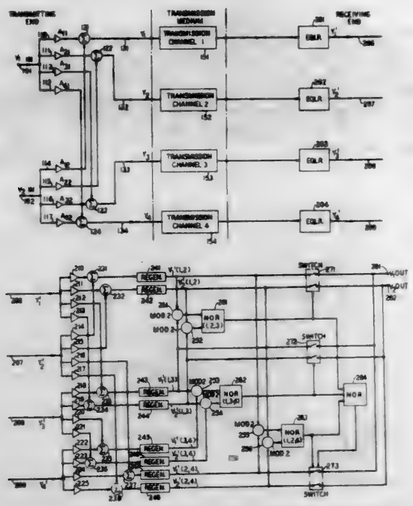
conditions. The signal lamps are arranged to give appropriate signal indications in the appropriate directions under each of the different driving conditions of the automobiles.

3,444,515
FLASHING DEVICE
Rodney Hayden, Stoney Creek, Ontario, Canada, assignor, by mesne assignments, to United-Carr Incorporated, Boston, Mass., a corporation of Delaware
Filed Feb. 21, 1966, Ser. No. 529,053
Claims priority, application Canada, Jan. 13, 1966, 949,774
Int. Cl. B60q 1/52
U.S. Cl. 340—74 1 Claim



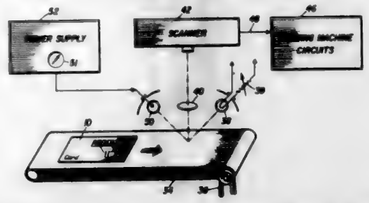
This is a flasher unit for use with a vehicle lighting system utilizing a flasher bulb having a bimetallic element therein in series with a switch and a relay coil. Actuation of the relay coil provides the initial electrical contact between the bulb, the source of power and directional switching devices.

3,444,516
ERROR CORRECTING COMMUNICATION SYSTEM
Joseph W. Lechleider, Murray Hill, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Aug. 25, 1966, Ser. No. 575,153
Int. Cl. G08b 29/00; H04b 7/02
U.S. Cl. 340—146.1 10 Claims



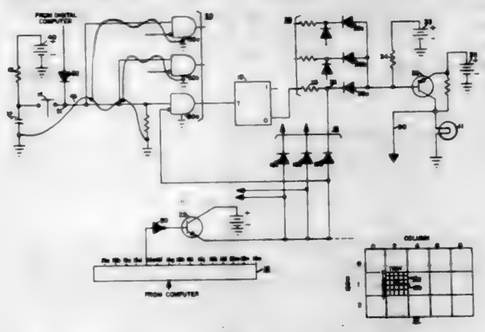
1. In combination, a source of at least a first and a second message signal, means for combining said first and second message signals in at least four different ways to form at least four combination signals, at least four diverse transmission channels each for communicating one of said combination signals to a receiving terminal, means at said receiving terminal responsive to said combination signals for forming a plurality of recovered first and second message signals, each of said recovered first and second message signals being derived from a different set of combination signals, means for comparing like recovered message signals to detect an erroneous combination signal, and means for eliminating any recovered message signal which is derived in part from said erroneous combination signal.

3,444,517
OPTICAL READING MACHINE AND SPECIALLY PREPARED DOCUMENTS THEREFOR
Jacob Rabinow, Bethesda, Md., assignor to Control Data Corporation, Rockville, Md., a corporation of Minnesota
Filed Mar. 9, 1965, Ser. No. 438,310
Int. Cl. G06k 9/18; G01n 21/38
U.S. Cl. 340—146.3 6 Claims



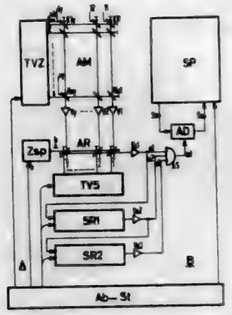
An optical character reading machine for documents containing characters printed in ordinary ink and containing visible fluorescent marks so designed that they emit energy and cooperate with the machine in a manner that the machine finds the marks to be indistinguishable from the background of the characters or detects the marks as being of greater light-video signal strength than the light-video signals representing the character background. In the latter case such signals may be used to provide control signals for the machine.

3,444,518
SYSTEM FOR DISPLAY AND CONTROL OF LOGIC ELEMENT OUTPUTS
Harold R. Greene, New Shrewsbury, N.J., assignor to Electronic Associates Inc., Long Branch, N.J., a corporation of New Jersey
Filed Oct. 22, 1965, Ser. No. 501,830
Int. Cl. H04q 1/00
U.S. Cl. 340—147 12 Claims



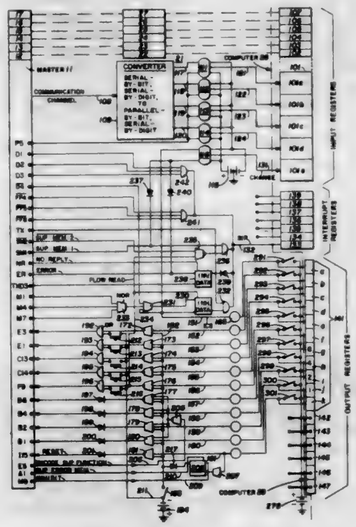
The output state of a single one of a plurality of logic elements in a plurality of groups of logic elements is automatically selected and displayed and controlled by applying an output signal to one of a plurality of AND gates which select the group. Activation of the AND gate selects the display device and the control circuit for the element as well as the element itself.

3,444,519
METHOD FOR IDENTIFICATION OF RANDOM SIGNAL PULSES
Rudolf O. Lütgenau, Munich, Germany, assignor to Siemens Aktiengesellschaft, Munich, Germany
Filed Oct. 15, 1965, Ser. No. 496,430
Claims priority, application Germany, Oct. 21, 1964, S 93,809
Int. Cl. H04q 1/00
U.S. Cl. 340—147 9 Claims



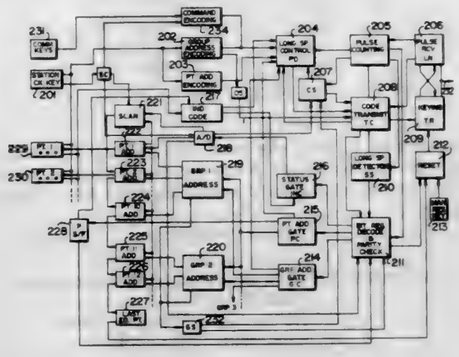
A system for central registration of signal pulses, such as rate pulses in telephone installations, which arrive in random fashion on a plurality of signal lines. The pulses on each line are temporarily stored in bistable storage elements which are cyclically scanned by plural pulses. The result of scanning with the first pulse is ignored and only the output from the storage element responsive to the second pulse is evaluated.

3,444,520
CONTROL INTERFACE FOR COMPUTER CONTROLLED SUPERVISORY SYSTEM
Lewis D. Messersmith, Irving, George Revere Smith, Richardson, and James R. Waller, Jr., Dallas, Tex., assignors to Mobil Oil Corporation, a corporation of New York
Filed July 6, 1965, Ser. No. 469,561
Int. Cl. H04q 9/02
U.S. Cl. 340—163 13 Claims



A plurality of slave stations are linked by communication channels to master stations. A computer is provided at a central station. A plurality of interface units link each master to the computer. Means are provided for the control of transfer of information between all masters and the computer such that the transmission of any control function from computer to a given master will inhibit the transfer of any information from such master to the computer while permitting uninterrupted flow of information from all other masters to the computer.

3,444,521
SUPERVISORY CONTROL SYSTEM COMBINING SCANNING AND DIRECT SELECTION MODES OF OPERATION
Lemuel R. Breese, Melbourne, Fla., assignor to Radiation Incorporated, Melbourne, Fla., a corporation of Florida
Filed Dec. 23, 1965, Ser. No. 515,909
Int. Cl. H04q 1/02, 1/18
U.S. Cl. 340—163 24 Claims

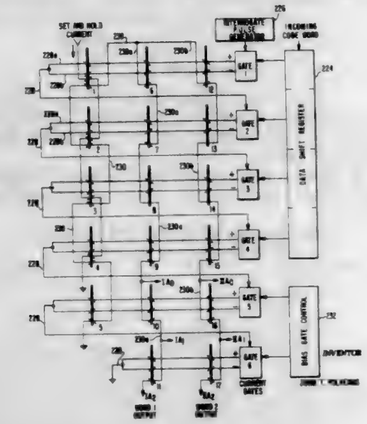


1. In a supervisory control system,
a plurality of stations connected over a communication channel;
a plurality of functional units divided into points, each of said points having a different code signal assigned thereto;
signal generator means at each station for generating a basic signal and control means thereat for modulating said basic signal;
first circuit means for activating said control means for initiating a code signal deriving a communication path to a given one of said points from one of said stations to another of said stations;
second circuit means for activating said control means for initiating a code signal deriving the sequential scanning of the status of each of the functional units at each of said points;
means at one point at said another station operative in response to a change in status of a functional unit thereat to cancel said sequential scanning and automatically energize said control means and said signal generator means to transmit a code signal identifying said point and the status thereof to said one station.

3,444,522
ERROR CORRECTING DECODER
John T. Polhemus, Englewood, Colo., assignor to The Martin-Marietta Corporation, New York, N.Y., a corporation of Maryland
Filed Sept. 24, 1965, Ser. No. 489,920
Int. Cl. G06f 11/04; G08b 29/00; G06k 9/00
U.S. Cl. 340—172.5 18 Claims

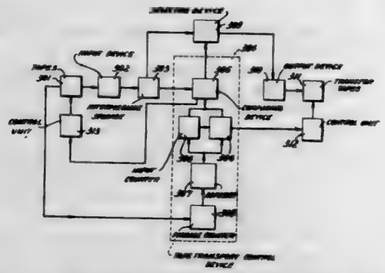
1. A core matrix decoder of the type having separate output sense lines, threading different combinations of the cores in said matrix, for several internal code words respectively, the improvement comprising, a first additional

core threaded to induce a desired polarity pulse in at least one of said sense lines, and *n* error correcting cores threaded by at least one sense line for neglecting *n* errors in a comparison of the command input word and the code word



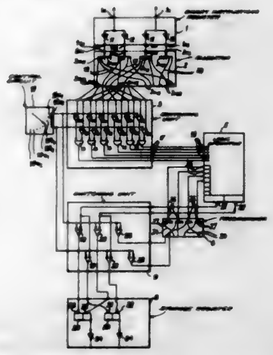
represented by said one sense line, whereby the output on said one sense line is a pulse of the desired polarity when the command word equals the digit word $\pm n$ digit errors.

3,444,523
APPARATUS FOR SORTING OF RECORDED DIGITAL DATA
Gerhard Dirks, 12120 Edgecliff Place, Los Altos Hills, Calif. 94022
Original application Feb. 2, 1960, Ser. No. 6,304, now Patent No. 3,242,466, dated Mar. 22, 1966. Divided and this application Oct. 23, 1965, Ser. No. 503,688
Claims priority, application Great Britain, Feb. 2, 1959, 3,548/59
Int. Cl. G11b *13/00*
U.S. Cl. 340—172.5 **10 Claims**



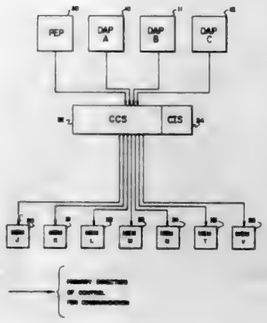
Data items furnished on a tape in random sequence are transferred to a drum in groups of a determined number into addressable storage locations. Indicator words, representing that part of each data item in accordance to which the sorting is to take place, are transferred to other storage locations, also addressable. The indicator words are compared, the one next in sequence selected, and the data item corresponding to the selected indicator word is transferred from its drum storage position to an output storage. In the output storage, there is thus present a group of data items in determined sequence. This may be combined with a subsequent group in the output storage means and transferred back to the input storage, thus forming there a longer group of arranged data items. The process may be continued until all data items have been arranged.

3,444,524
METHOD AND SYSTEM FOR COORDINATING BINARY INFORMATION WHEREBY TO TRANSMIT CONTROL COMMANDS
Michel Lebrun and Marcel Gester, Paris, France, assignors to Societe Anonyme dite: Compagnie des Freins et Signaux Westinghouse, Paris, France
Filed Apr. 13, 1966, Ser. No. 542,331
Claims priority, application France, Apr. 14, 1965, 13,270
Int. Cl. G06f *7/00*
U.S. Cl. 340—172.5 **2 Claims**



A method of coordinating binary information in order to transmit control commands, including the steps of reading the information in the form of binary instructions into a register, of selecting several of the instructions, of selectively combining the instructions in each selection in accordance with one among several programs, of storing the result of each such combination and of converting each result into a control command. The invention also includes a system for coordinating binary information for transmitting control commands.

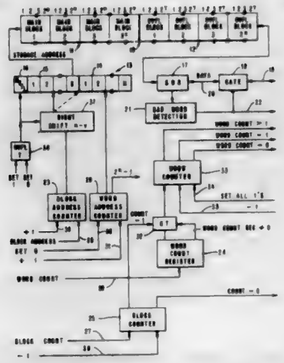
3,444,525
CENTRALLY CONTROLLED MULTICOMPUTER SYSTEM
Jesse P. Barlow, Reseda, Calif., Richard Barton and John E. Belt, Phoenix, Carlton R. Frasier, Glendale, Lorenz A. Hittel and Laszlo L. Rakoczi, Phoenix, Ariz., Mark A. Torfeh, Tarzana, Calif., and Jerome B. Wiener, Armonk, N.Y., assignors to General Electric Company, a corporation of New York
Filed Apr. 15, 1966, Ser. No. 542,768
Int. Cl. G06f *9/06*
U.S. Cl. 340—172.5 **8 Claims**



A multicomputer system is disclosed in which each data processor of the system is capable of executing independently of the other processors a computer program from

beginning to end. All the processors have access to and use the single memory system of the multicomputer system, which memory is addressable, i.e., each cell of the memory has a unique address. All communications between the data processors and the memory is through and under the control of a central control subsystem. This subsystem, in response to requests from the data processors for communication with the memory, permits each processor to communicate with the memory in executing its program's instructions without interference or appreciable delay due to the execution of programs by the other data processors of the multicomputer system.

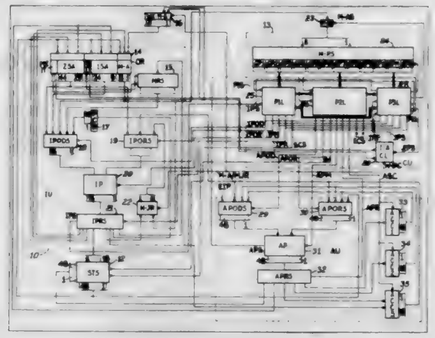
3,444,526
STORAGE SYSTEM USING A STORAGE DEVICE HAVING DEFECTIVE STORAGE LOCATIONS
Robert P. Fletcher, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed June 8, 1966, Ser. No. 556,098
Int. Cl. G06f *7/24*
U.S. Cl. 340—172.5 **4 Claims**



Logic is disclosed in the accessing mechanism of a storage device which permits the use of a storage device having defective data word locations. Normal transfer of data to or from the storage device includes a block of data consisting of a predetermined number of data words or locations in the storage device. When a block of data is accessed in the main storage device, sequential data word locations are accessed and transferred. Transfer continues within the main storage device block with means for detecting the presence of defective word locations. Transfer continues through the main block of the storage device until the last data word location within a particular storage block is reached at which time the logic provided transfers the accessing of data word locations from the main storage block to an associated overflow storage block within the storage device to complete the transfer of the predetermined number of data words within the data block.

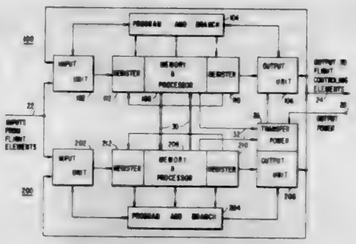
3,444,527
INDIRECT ADDRESSING USING A PRE-PROGRAMMED MICRO-PROGRAMME STORE
David Hartley, Brian Herbert Swanick, and Orran Terence Pate, Liverpool, England, assignors to Automatic Telephone & Electric Company Limited, Liverpool, England, a British company
Filed Nov. 9, 1966, Ser. No. 593,075
Claims priority, application Great Britain, Nov. 11, 1965, 48,008/65
Int. Cl. G11b *13/00*
U.S. Cl. 340—172.5 **4 Claims**

Indirect addressing techniques are applied to a data processing arrangement employing a pre-programmed micro-programme store. An order word, including an instruction code and at least one address code, in an order register also includes a marking if indirect addressing applies, a logic circuit responding to the marking to cause the instruction code to be transferred from the order register to a subsidiary register and to cause the insertion into the order register of a locally generated instruction code relative to indirect address operation. The inserted instruction code enables the micro-programme store to



define a micro-programme which enables the main store to be addressed with address code in the order register and a further address code to be extracted from the main store to replace the address code in the order register. Said further address code is tested for an indirect address marking which, if present, causes the indirect address operation to be repeated and, if absent, replaces the inserted instruction code in the order register by the original instruction code whereby the data processing arrangement re-enters the main programme order.

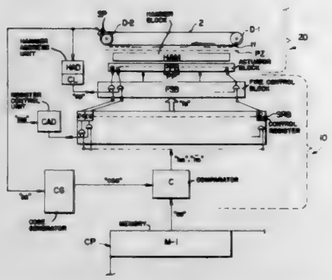
3,444,528
REDUNDANT COMPUTER SYSTEMS
Gary E. Lovell, Littleton, Colo., and Tom E. Conover, Bellevue, Wash., assignors to Martin-Marietta Corporation, New York, N.Y., a corporation of Maryland
Filed Nov. 17, 1966, Ser. No. 595,162
Int. Cl. G06f *11/08, 13/00*
U.S. Cl. 340—172.5 **11 Claims**



A computer system comprising a pilot and a copilot computer, each receiving identical inputs and performing the same computer function, the programs of both being identical but normally providing only a single real output from the pilot computer. The pilot and copilot computers, however, are coupled together such that when a malfunction occurs in the pilot computer, power is transferred from the pilot output circuits to the normally deactivated copilot output circuits to obtain a real output therefrom. Malfunction in the copilot computer, on

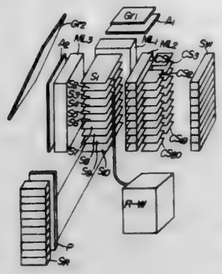
the other hand, will prevent the above-mentioned power transfer from taking place. Additionally, run away or lock-up of the pilot will not prevent power transfer and the run away or lock-up of the copilot will not cause a transfer.

3,444,529
CONTROL ADAPTER ASSEMBLY FOR A CHAIN PRINTER
Robert C. Engelhardt, Waltham, Mass., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Jan. 3, 1967, Ser. No. 606,876
Int. Cl. G11b *13/00*
U.S. Cl. 340—172.5 **12 Claims**



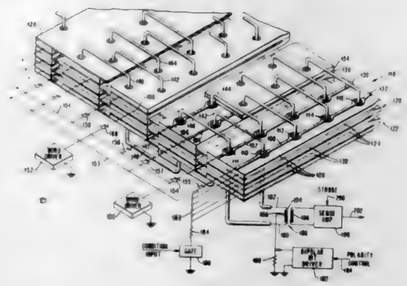
A control adapter assembly for controlling a special chain printer having a "leap-frogging," "by-three's" print-slug registration order (for each full print-position-shift of the chain) providing a buffer storage assembly for accessing memory locations serially, i.e., in print-position sequence, and responsively storing hit signals, while accommodating a non-serial, "leap-frogging" buffer unloading operation for actuating print hammers in this "leap-frogging" order. More particularly, this buffer memory uses a resettable latch circuit for each such memory location, each being coupled to control the energization of an associated print hammer, the mode of addressing main memory and filling these locations being controlled so as to accommodate this "leap-frogging" unload mode and also a simple "two-step" reset mode.

3,444,530
OPTO-ELECTRONIC INPUT AND OUTPUT MEMORY DEVICE
Hideyasu Majima, Hachioji-shi, Japan, assignor to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Filed Apr. 8, 1966, Ser. No. 541,389
Claims priority, application Japan, Apr. 14, 1965, 40/21,609
Int. Cl. G11b *7/00*
U.S. Cl. 340—173 **3 Claims**



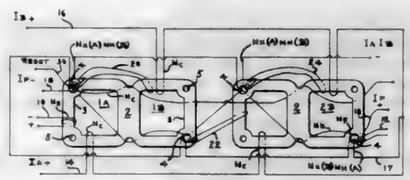
1. An opto-electronic input memory device comprising a plurality of memory planes each consisting of stacked layers of a first conductor, a photoconductor, a ferroelectric substance having both of the properties of rotatory polarization and the hysteresis characteristic with respect to voltage and a second conductor, means for forming optical images in said memory planes, means for applying voltage to said memory planes, means for emitting light for reading out memories stored in said memory planes, said light emitting means being operative to cause a variation in the stable hysteresis states of said ferroelectric substance by varying the conductivity of said photoconductor for thereby developing stored pattern portions and non-stored portions in said memory planes, and means for detecting the light passed through or reflected from said memory planes for thereby effecting read-out of memories.

3,444,531
CHAIN STORE MAGNETIC MEMORY ARRAY
Hans-Otto G. Leilich, William H. Rhodes, Jr., and William F. Shutler, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 23, 1964, Ser. No. 377,309
Int. Cl. G11b *5/74, 5/64*
U.S. Cl. 340—174 **16 Claims**



A memory employing magnetic chain storage elements in a plane and having magnetic units disposed on a conductor means characterized by a plurality of conductive return units comprised of conductive return planes coextending in opposed relationship to each other with each return unit coupled to a gating means. A drive means is connected to each storage element for influencing associated magnetic units to attain a predetermined state; and the conductor means is coupled at one end to an energization means and at the other end to a return unit whose planar elements sandwich the storage elements.

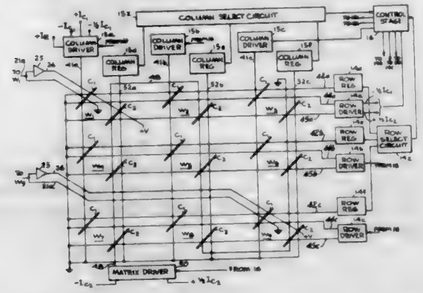
3,444,532
MAGNETIC BINARY SEQUENCE DETECTOR
Joseph Patrick Sweeney, Progress, Harrisburg, and Lawrence Grebe Wiley, Camp Hill, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Filed Apr. 1, 1965, Ser. No. 444,714
Int. Cl. G11b *5/00;* **G06f** *7/02*
U.S. Cl. 340—174 **12 Claims**



A binary code sequence detector is disclosed featuring a magnetic core register wired so as to advance a single

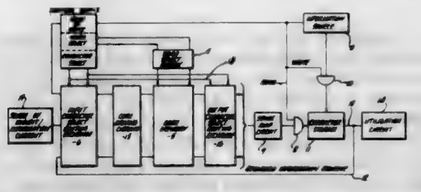
ONE bit from the first core to the last core of the register to produce an output signal in response to a proper code input and to effectively block such advance in response to an improper code. A binary code input formed of a sequence of ONE and ZERO bits is caused to energize selective advance drivers to provide advance pulses for the register which are linked to register cores in patterns associated with a given sequence to be detected. In a word detector embodiment improper sequences are blocked by not cancelling an advance pulse generating a clearing MMF on a given core. In a code stream detector improper sequences are blocked by selectively applying a clearing MMF on a given core to override a transmitted bit and prevent the core from being set.

3,444,533
LOGICAL CIRCUIT WITH TWO-DIMENSIONAL MAGNETIC CORE MATRIX
Ju C. Tu, Sylmar, Richard H. Fuller, Sherman Oaks, and Richard M. Bird, Glendale, Calif., assignors to Singer-General Precision, Inc., a corporation of Delaware
Filed May 4, 1965, Ser. No. 452,982
Int. Cl. G11b *5/00;* **G06f** *7/02*
U.S. Cl. 340—174 **6 Claims**



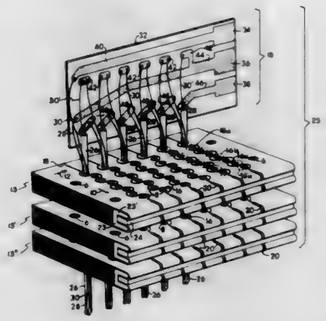
A two-dimensional matrix of magnetic cores, which are associated with data words stored in an associative memory is disclosed. A pair of cores are associated with each data word. The magnetic cores associated with data words which compare with a search word, in accordance with a selected comparison criterion, are driven to a first state of magnetic remanence, while the cores associated with the rest of the words are in a second state of magnetic remanence. The cores in the first state of magnetic remanence are then used to sequentially address the data words in memory which are associated with core-pairs in the first state of magnetic remanence.

3,444,534
WORD SELECT AND CHARACTER INHIBIT MEMORY SYSTEM
Floyd W. Looschen, Arcadia, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed May 17, 1965, Ser. No. 456,100
Int. Cl. G11b *5/00*
U.S. Cl. 340—174 **7 Claims**



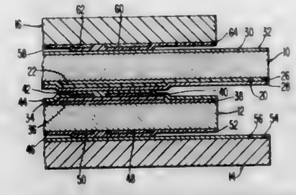
A magnetic core memory for storing words of information containing characters but for only reading out and writing only a preselected character of a word. Word lines cause a complete word of information to be read out from the memory. Inhibit signals are applied to inhibit lines to cancel out the effective read signal from a word line for all characters except for the preselected character. A first selection circuit selects the inhibit lines to receive the inhibit signal. A second selection circuit applies a partial selection signal to the appropriate inhibit lines for only the selected character of cores causing a character of information read out of the memory or a new character of information to be written back into the same location from which the selected character was read.

3,444,535
FOLDED WEB ROD MEMORY ARRAY
Roman E. Lukianov, Framingham, Mass., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed June 8, 1965, Ser. No. 462,326
Int. Cl. G11b *5/80, 5/74;* **G11c** *5/02*
U.S. Cl. 340—174 **10 Claims**



A rod memory array having multiturn solenoidal coil matrix cards of printed circuit construction. Each card consists of an insulative web having conductors disposed thereon which sinuously extend about the rows of rod holes in the web. The web is folded so as to present complementary semi-coil segments in registry and form multiturn solenoidal coils about the individual rods in the matrix.

3,444,536
MAGNETIC THIN FILM MEMORY ASSEMBLY
Frederic C. Doughty, Valley Forge, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Aug. 27, 1965, Ser. No. 483,098
Int. Cl. G11b *5/00*
U.S. Cl. 340—174 **8 Claims**



A magnetic memory device is constructed of a laminated assembly of substrates, each containing thin films and/or vacuum-deposited conductors. The thin films are arranged in two layers in the assembly with certain of the conductors extending between and inductively coupled to pairs of the thin films. The use of paired films

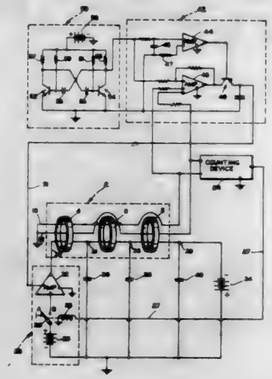
provides improved magnetic performance and increased signal output. Vacuum depositing of the conductors provides for ultrathin conductors whereby maximum flux coupling between the films of each pair is obtained. None of the conductors on any one substrate intersect, and the substrates are oblong and orthogonal so as to expose the terminal portions of all conductors for external connection.

3,444,537

DIGITAL DATA STORAGE DEVICE INCLUDING MEANS FOR DELIVERING THE STORED DATA AT A PREDETERMINED RATE

Israel Lou Fischer, Harrington Park, and Walter W. Lee, Allendale, N.J., assignors to The Bendix Corporation, a corporation of Delaware

Filed Dec. 23, 1965, Ser. No. 515,849
Int. Cl. G11b 5/00
U.S. Cl. 340—174 9 Claims



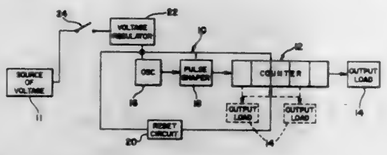
A digital data storage and data delivery device including a power source and means for varying the output therefrom. Inductive means provide pulses in response to the power output and an oscillator provides pulses at a predetermined rate. The rates of the pulses from the inductive means and from the oscillator are compared and the power output is varied in accordance with the difference between the rates so that the inductive means provides pulses at the predetermined rate.

3,444,538

COUNTER SYSTEM AND MAGNETIC CORE RESET CIRCUIT THEREFOR

Roland T. Rogers, West Milford, N.J., assignor, by mesne assignments, to Amerace Esna Corporation, New York, N.Y., a corporation of Delaware

Filed Mar. 7, 1966, Ser. No. 532,361
Int. Cl. G11b 5/62
U.S. Cl. 340—174 15 Claims



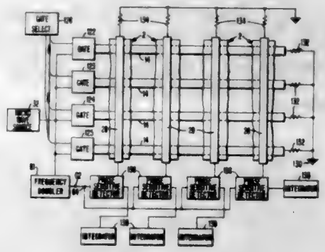
1. A counter system comprising:
a source of voltage;
a counter having at least one toroidal core, magnetic memory device connected to the source of voltage;
an oscillator connected to the source of voltage and to the input of the counter such that a pulse is applied thereto;
a reset circuit connected to the source of voltage and to the counter such that when voltage is initially applied to the counter system, the toroidal core, magnetic memory device of the counter is returned to zero count.

3,444,539

PHASE SENSITIVE MICROWAVE MEMORY DEVICE

Rodger L. Gamblin, Vestal, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Aug. 4, 1966, Ser. No. 570,347
Int. Cl. G11b 5/00
U.S. Cl. 340—174 5 Claims



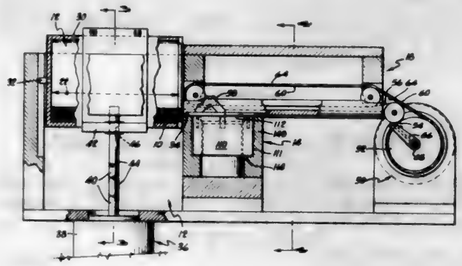
A non-destructive read-out thin film memory operating in the region of the microwave absorption frequency to provide an output signal in which the information is contained in the phase rather than the amplitude characteristic.

3,444,540

RANDOM ACCESS MEMORY SYSTEM

William White Woodbury, San Francisco, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California

Filed Apr. 14, 1965, Ser. No. 448,094
Int. Cl. G11b 5/00
U.S. Cl. 340—174.1 2 Claims



A magnetic memory employing electromechanical accessing is provided for obtaining economical storage and retrieval of data. Plaques having magnetic coating are stored in packs for selective and rapid movement to and from a recording/playback station. At such station a rotating drum having a plurality of magnetic transducers spaced circumferentially thereon either writes or plays back the data. To control the spacing between the plaque and the rotating heads of the drum suitably contoured recesses are provided in the drum between the transducers

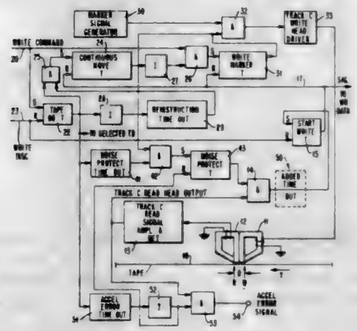
and act on one side of the plaque. A pneumatic pressure pad acts on the other side of the plaque.

3,444,541

TAPE INTER-BLOCK GAP SIZE CONTROL

John W. Irwin, Huntsville, Ala., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed June 21, 1965, Ser. No. 465,336
Int. Cl. G11b 5/84
U.S. Cl. 340—174.1 5 Claims



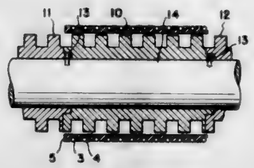
This invention measures a start distance component in the inter-block spacing approximately equal to the spacing between the write and read heads or gaps. The write head is actuated with a marker signal in response to a write command that initiates tape movement. Sensing of this mark by the read head is indicative of movement of the tape a distance equal to approximately the distance between the read and write heads or gaps.

3,444,542

APPARATUS FOR DETECTING DISTANCE OF LINEAR MOVEMENT

Koya Kimura, Numazu-shi, Japan, assignor to Toshiba Kakai Kabushiki Kaisha, Tokyo-to, Japan

Filed May 16, 1966, Ser. No. 550,454
Claims priority, application Japan, May 28, 1965, 40/31,446
Int. Cl. G08c 21/00
U.S. Cl. 340—196 5 Claims



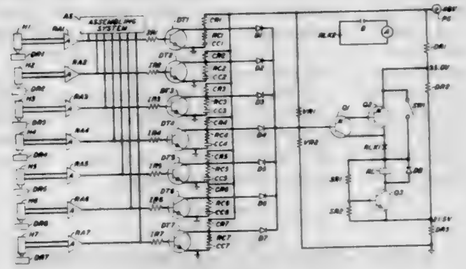
An apparatus for detecting of linear movement. A precision reference screw has a pair of solenoid coils concentrically wound around it to generate an electrical signal corresponding to the relative movement between the screw and solenoid coils. The screw is divided into a plurality of screw elements along its longitudinal axis which are assembled to form an integral screw of the desired length, whereby the error condition of the precision screw as a whole can be adjusted.

3,444,543

MONITOR CIRCUIT

William J. Brown, Brielle, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 22, 1964, Ser. No. 420,310
Int. Cl. G08b 29/00; H03k 5/20; G11b 5/00
U.S. Cl. 340—213 9 Claims



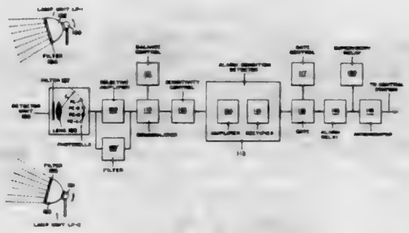
A monitor system simultaneously senses signals in a number of magnetic playback channels and combines them so that a departure of one or more playback signals from a predetermined value turns off a high amplification, high input impedance, direct-coupled amplifying device that in turn de-energizes a relay. To prevent high cutoff currents in the amplifying device from preventing de-energization of the relay coil a second amplifying device whose main current flow path is also in series with the relay coil senses the voltage across the relay coil with its control electrode. Only a slight drop in relay current due to actuation of the first direct-coupled amplifying device is sufficient to turn off the second amplifying device and hence completely de-energize the relay coil.

3,444,544

LIGHT MODULATED INTRUSION DETECTION SYSTEM

Howard Pearson, New York, and Willi A. Busch, New Rochelle, N.Y., assignors to American District Telegraph Company, Jersey City, N.J., a corporation of New Jersey

Filed July 19, 1965, Ser. No. 472,779
Int. Cl. G08b 13/18
U.S. Cl. 340—258 12 Claims



A method and apparatus for detecting motion. The method involves the steps of filling the space to be protected with illumination having at least a substantial alternating component and separately detecting at a plurality of closely spaced points the illumination reflected from the space and from light reflective objects in the space. A corresponding alternating voltage is produced which has a carrier frequency equal to the frequency of the alternating component. The carrier frequency is amplitude modulated by changes in detected reflected illumination resulting from motion of objects in the space. The alternat-

ing voltage is amplified, direct current components are suppressed and then the alternating voltage is demodulated to produce a signal corresponding to the modulation components. Variations in the signal are used to produce an alarm. The apparatus of the invention comprises a source of modulated illumination, and a detector formed by a means to focus the illumination reflected from the space and a plurality of closely spaced photocells disposed along an arc coinciding with the image plane of the focusing means. The photocells are connected in parallel in alternate polarity configuration and an amplifier with negative feedback means is coupled to the photocells to amplify the carrier frequency output and a selected range of modulation components but with attenuation of other components. A demodulator is coupled to the amplifier output to produce a signal proportional to modulation components in the selected range. An alarm means is operated on a selected change in the signal.

3,444,545

LUBRICATION LINE BLOCKAGE SENSING SYSTEM

Eugene H. Batur, Birmingham, Mich., assignor, by mesne assignments, of fifty percent to Eugene H. Batur, Birmingham, and fifty percent to Irvin F. Swider, Roseville, Mich.

Filed Oct. 18, 1966, Ser. No. 587,553
The portion of the term of the patent subsequent to Jan. 24, 1984, has been disclaimed
Int. Cl. G08b 21/00
U.S. Cl. 340—270 1 Claim

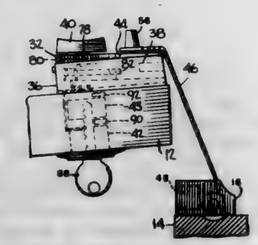
In a machine having a body with numerous parallel ducts, each terminating at one end in a grease fitting, a line blockage signal means including a plurality of bores in said body, one for each duct; each bore having a closed end and an open end, passages in the body between the closed end of each bore and each duct, an electrically conductive piston in each bore with spring means biasing the piston to its closed end, an insulating closure strip lying over and closing all of the open ends of said bores, parallel conductor strips on the bore-adjacent-surface of said strip extending over all the bores in position to be engaged and bridged by said pistons when a blockage in one of said grease lines causes grease pressure to overcome said spring bias and drive the associated piston upwardly into contact with said strips for closing parallel circuit lines normally open between said strips, and an electrical circuit including a power source and signal connected to said strips.

3,444,546

PROTECTION SYSTEM

Paul Maddison Hawkins, Jericho, N.Y., assignor to General Alarm Corporation, New York, N.Y., a corporation of Delaware

Filed July 28, 1966, Ser. No. 568,546
Int. Cl. G08b 21/00
U.S. Cl. 340—274 31 Claims



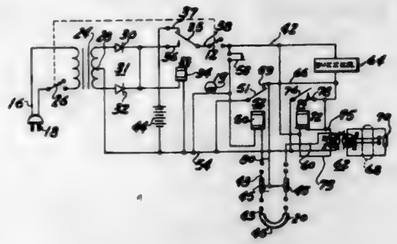
Security alarm systems incorporating bolt and chain locks arranged to respond to unauthorized manipulation or forcing to sound an electrically powered alarm.

3,444,547

ANTI-SHOPLIFTING DEVICE

Casimer Surek, Round Lake, Ill., assignor to Gefco Manufacturing Corp., Grays Lake, Ill., a corporation of Delaware

Filed Oct. 8, 1965, Ser. No. 494,074
Int. Cl. G08b 21/00
U.S. Cl. 340—280 4 Claims



A tamper-proof anti-shoplifting device energizes an alarm circuit through the operation of a relay, in response to disconnection of an elongated, shielded, low impedance conductor. A second relay is connected for actuation when the first relay is deactuated, and also when the elongated conductor is short-circuited with respect to its shield to continuously energize the alarm until the apparatus is reset.

3,444,548

BASKETBALL FOUL AND TIME-OUT INDICATOR

William E. Davis, Rte. 5, 113 Scottdale Drive, Jackson, Miss. 39212

Filed Mar. 18, 1966, Ser. No. 535,419
Int. Cl. G08b 27/00, 5/36
U.S. Cl. 340—323 9 Claims



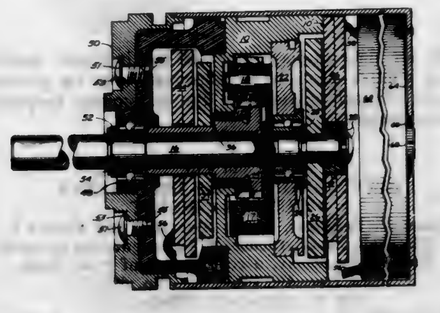
A vertically elongated post internally mounting a plurality of vertically spaced lamps above and below directional indicator assemblies extending laterally of the post intermediate upper and lower ends. Remote control means connected to the lamps in the post and the directional indicators control illumination to provide visible information regarding time-outs and fouls during a basketball game.

3,444,549

ROTATIONAL SHAFT ENCODER HAVING PROVISIONS FOR PHASE ADJUSTMENT OF CONTACTS DURING OPERATION

David H. Margolien, Los Angeles, Calif., Arnold St. J. Lee, Fort Lee, N.J., and Niels Krag, Los Angeles, Calif., assignors to Litton Precision Products, Inc., Beverly Hills, Calif.

Filed May 4, 1965, Ser. No. 453,065
Int. Cl. H04l 3/00; H03k 13/00; G08c 9/00
U.S. Cl. 340—347 9 Claims



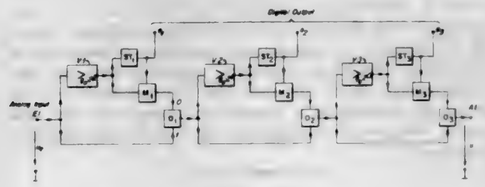
Disclosed is a rotational shaft encoder of the double disc type having an epicyclic gear train between the two discs, coaxial input and output shafts which are axially restrained by the discs and a segmented transmission housing with two portions each having a brush block corresponding to one of the discs fixedly mounted therein, the portions being rotatably adjustable relative each other.

3,444,550

LOGARITHMIC ANALOG TO DIGITAL CONVERTER

Erwin Paulus, Vienna, Austria, assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Apr. 1, 1965, Ser. No. 444,631
Claims priority, application Austria, Jan. 20, 1965, A 459/65
Int. Cl. H03k 13/02
U.S. Cl. 340—347 2 Claims



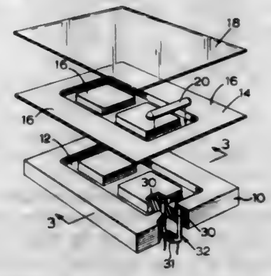
This invention relates to an analog-to-digital converter for directly converting the logarithm of electric analog values into binary numbers. A plurality of series connected amplifier circuits with sensing networks between each stage are employed to convert the analog signal to a binary output. The gains of each of the amplifier circuits are different from each other with the highest gain amplifier at the input and each successive amplifier stage having one-half the preceding amplifier's gain. The sensing circuit at the output of each amplifier determines whether the input to the amplifier is directed to the input of the next stage or whether the output of that amplifier is directed to the input of the next stage.

3,444,551

MAGNETICALLY OPERATED DISPLAY DEVICE HAVING DISPLAY ELEMENTS IN LIQUID SUSPENSION

Donald Winrow, Downsview, Ontario, Canada, assignor, by mesne assignments, to Ferranti Packard Limited, Toronto, Ontario, Canada

Filed June 3, 1966, Ser. No. 555,053
Int. Cl. G08b 5/00; G09f 11/23, 19/00
U.S. Cl. 340—378 6 Claims



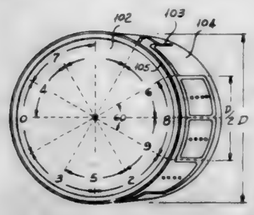
An indicating element containing a magnet is surrounded by a liquid and is free floating in a housing having a transparent viewing area. The housing allows the element to rotate about one axis when the magnet is influenced by electromagnets mounted outside said housing.

3,444,552

FUSED CHARACTER DIGITAL READOUT DEVICE HAVING HALF OF EACH CHARACTER COMMON WITH ANOTHER CHARACTER

Leon Feigin, Westport, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Oct. 18, 1965, Ser. No. 496,979
Int. Cl. G08b 5/14
U.S. Cl. 340—379 14 Claims



A display device for characters arranged in a scrambled pattern on a circular surface is disclosed. Identical upper and lower halves of adjacent characters are overlapping and the centers of the respective characters are positioned at locations on the surface corresponding to an integral multiple of a certain angle. This permits the surface to be stepped in equal increments to shift from a display of one character to a display of the adjacent character.

3,444,553

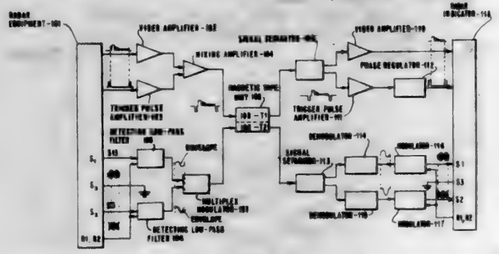
RADAR SIGNAL RECORDING AND REPRODUCING SYSTEM

Takao Tsumura, Toshio Kadooka, Keisuke Suzuki, and Noboru Kitayama, Tokyo, Japan, assignors to Japan Radio Company Limited, Tokyo, Japan, a corporation of Japan

Filed Jan. 31, 1968, Ser. No. 702,108
Claims priority, application Japan, Feb. 3, 1967, 42/6,938
Int. Cl. G01s 9/02
U.S. Cl. 343—5 11 Claims

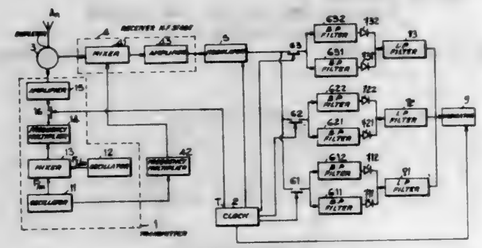
Polar coordinate information signals, received in the radar receivers are recorded by deriving video signals

from a video channel (if desired, in combination with range tracking signals) and mixing these signals with trigger pulses from the receiver, the mixed signals are recorded on one track of a magnetic tape. At least two bearing signals (with respect to a reference, as deter-



mined by reference signals) are mixed and recorded, if desired together with other signals such as audio for oral comments, on the other track of the tape. For reproduction, these signals are read separately from their tracks, separated (for example, by filters or similar networks) and then applied to a radar display reproducer.

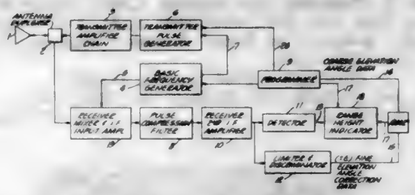
3,444,554
ARRANGEMENTS FOR ELIMINATING FIXED ECHOES
Roland Carre, Paris, France, assignor to CSF-Compagnie Generale de Telegraphie Sans Fil, a corporation of France
Filed Apr. 11, 1968, Ser. No. 720,638
Claims priority, application France, Apr. 21, 1967, 103,750
Int. Cl. G01s 9/42
U.S. Cl. 343—7.7 **5 Claims**



In order to avoid the spreading of the spectrum of the fixed echoes in pulsed radar systems with wobbulated repetition frequency, an additional modulation, either a phase or an amplitude modulation, is carried out either at the transmission or at the reception, the modulation law being a function of the wobbulation law.

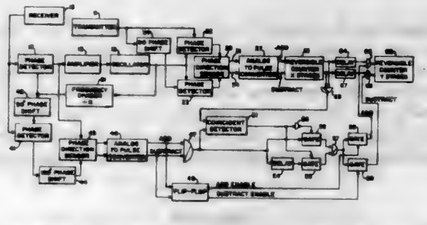
3,444,555
FREQUENCY SCANNING RADAR SYSTEM WITH IMPROVED ANGULAR TARGET DETECTION
Irving W. Hammer, Los Angeles, Calif., assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Delaware
Filed June 6, 1967, Ser. No. 643,981
Int. Cl. G01s 7/28, 9/02
U.S. Cl. 343—16 **10 Claims**

A radar system is described which uses an antenna which is frequency sensitive in at least one plane. A transmitter system provides pulses of excitation which is varied in frequency, substantially uniformly with time, over the duration of each pulse. Pulse compression is also preferably included, so that relatively long pulses may be employed to raise the average energy of illumination without deteriorating range or angular resolution. An additional subsystem analyzes the frequencies reflected by a given target, through comparison with a programmed mid-pulse nominal frequency, and when using an indi-



cator for data display, modifies the indicator angular sweep control signal as a refinement over the primary angular control provided by the transmitted frequency control means.

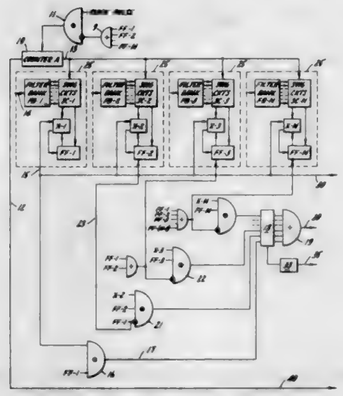
3,444,556
ELECTRONIC PHASE-DIFFERENCE COUNTER-CIRCUIT
James E. Bellinger, North Syracuse, and Robert F. Marshall, East Syracuse, N.Y., assignors to General Electric Company, a corporation of New York
Filed Dec. 15, 1967, Ser. No. 690,839
Int. Cl. G01s 9/02; H04b 1/16
U.S. Cl. 343—7 **8 Claims**



A circuit is disclosed for counting recurrent phase shifts, using a phase-multiplying oscillator circuit that is phase-locked with the phase of an incoming signal such as a radar signal. The circuit includes means for comparing the phase of the locked oscillator (which varies in accordance with position (range) change of the incoming signal) with that of the transmitted carrier, and means for counting the cycles of phase shift so as to indicate distance or other information. To prevent counting error in the event of temporary losses of phase-lock of the oscillator with the incoming signal, a phase comparison circuit is connected to compare the phase of the incoming signal with that of the phase-locked oscillator circuit, and it generates output signals indicative of any loss of phase-lock. "Add" or "subtract" count pulses are generated in response to any such loss of phase-lock, and are fed to the counter in a manner to compensate for, and prevent erroneous counting due to, loss of the oscillator phase-lock.

3,444,557
PULSE DOPPLER FILTER BANK INTERROGATION SCHEME
Charles D. Calhoon, Sr., Catonsville, Md., and Dom J. Ciccarelli, Irwin, Pa., assignors, by mesne assignments, to the United States of America as representated by the Secretary of the Navy
Continuation-in-part of application Ser. No. 13,384, Mar. 7, 1960. This application Dec. 12, 1962, Ser. No. 244,226
Int. Cl. G01s 9/44; H04q
U.S. Cl. 343—8 **10 Claims**

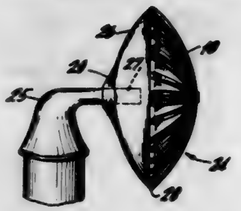
10. A pulse Doppler radar information interrogation system for rapid processing of radar data comprising:
a plurality of banks of electrical filters coupled in parallel to a radar receiving system, each of said banks containing a plurality of frequency-sensitive bandpass filters for separation of significant information obtained from said receiving system;
a plurality of sequential sampling control circuits, one each thereof being coupled to an associated one of said banks of electrical filters;
a master counter interrogation synchronizing circuit having an output coupled in parallel to each of said sequential sampling control circuits to enable said sampling control circuits to serially interrogate said frequency-sensitive bandpass filters within each of



said banks while said banks are being interrogated in parallel with respect to one another; and
a master computing means having therein individual counting and totalizing means coupled to each of said sequential sampling control circuits for receiving and totalizing information interrogated from said bandpass filters in each of said filter banks and having output means for providing signals indicative of the totalization of said information, together with signals indicating which of said filter banks originated that particular bit of said totalized information, to other utilization equipment.

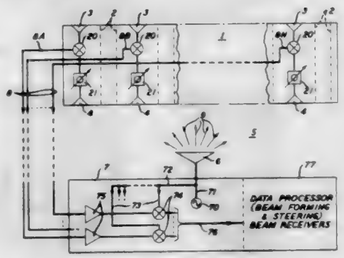
3,444,558
RADOMES
Robert T. Leitner, Norwich, N.Y., assignor to Technical Appliance Corporation, a corporation of New York
Filed July 12, 1966, Ser. No. 564,677
Int. Cl. H01q 1/42
U.S. Cl. 343—872 **13 Claims**

1. In an antenna having a radiating element, a housing having a closure element in the shape of a curved convex shell of dielectric plastic material transparent to and through which radiant energy is transmitted, said convex closure element having an apex and being characterized by spaced radially disposed corrugations emanating from



said apex and terminating at its outer peripheral edge, said corrugations varying gradually in depth along the radial direction from the apex of said convex closure element to its outer peripheral edge, the corrugations being deeper intermediate the apex and said outer peripheral edge.

3,444,559
PHASED ARRAY MULTIBEAM FORMATION ANTENNA SYSTEM
William W. Mumford, Parsippany-Troy Hills Township, Morris County, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed Mar. 4, 1968, Ser. No. 709,977
Int. Cl. H04b 7/06
U.S. Cl. 343—100 **8 Claims**

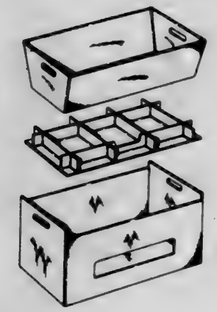


A beam forming means for a multibeam phased array radar receiver in which the local oscillator beating frequency is space fed from the receiver to the rear of the antenna array. A frequency converter in each of the array elements down converts the received radar signals to corresponding signals at a lower intermediate frequency band. A coaxial cable from each array element transmits these lower frequency signals to the data processor.

DESIGNS

MAY 13, 1969

214,124
COMBINED PORTABLE CRIB AND COMPARTMENTED STORAGE CONTAINER
Percy E. Grooms, 12381 Fenton Road, Fenton, Mich. 48430
Filed Feb 27, 1968, Ser. No. 10,742
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D5—5



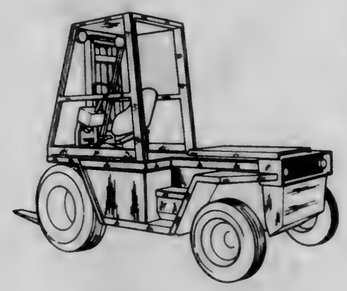
214,125
COMBINED DISPLAY PACKAGE AND CARRIER FOR DISHES OR SIMILAR ARTICLE
David J. Freiman, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Dec. 26, 1967, Ser. No. 9,919
Term of patent 14 years
Int. Cl. D9—*04*
U.S. Cl. D9—191



214,126
COMBINED CAN END AND TEAR STRIP OPENER
John J. Luviano, Rydal, Pa., assignor to Crown Cork & Seal Company, Inc., Philadelphia, Pa., a corporation of New York
Filed Dec. 26, 1967, Ser. No. 9,927
Term of patent 14 years
Int. Cl. D9—*99*
U.S. Cl. D9—255



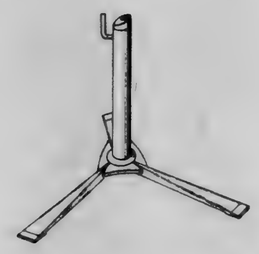
214,127
FORK LIFT OR SIMILAR ARTICLE TRANSPORT VEHICLE
Bruce L. Renquist, Racine, Wis., assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed May 9, 1968, Ser. No. 11,871
Term of patent 14 years
Int. Cl. D12—*13*
U.S. Cl. D14—3



214,128
REMOVABLE EAR PIECE FOR TELEPHONE INSTRUMENTS
Ernst Alden Eriksson, Westford Road, Tyngsboro, Mass. 01879
Filed July 5, 1968, Ser. No. 12,643
Term of patent 14 years
Int. Cl. D14—*01*
U.S. Cl. D26—14



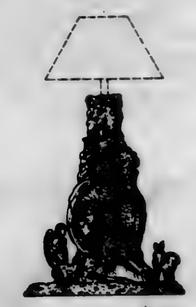
214,129
ATTACHMENT BASE FOR A MUSICAL INSTRUMENT SUPPORT STAND
Clifford A. Della-Porta, Rothlet, England, assignor to The Premier Drum Company Limited, London, England, a British company
Filed Jan. 15, 1968, Ser. No. 10,174
Claims priority, application Great Britain July 15, 1967
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D33—3



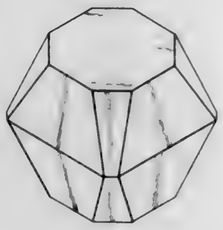
214,130
BOWL
Mel Appel, 9 Nottingham Road, Livingston, N.J. 07039, and Martin Schnur, 220 St. Cloud Ave., West Orange, N.J. 07052
Filed Mar. 11, 1968, Ser. No. 10,921
Term of patent 14 years
Int. Cl. D7—*01*
U.S. Cl. D44—15



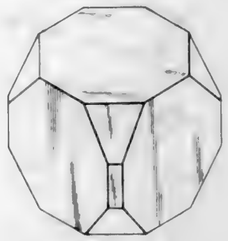
214,131
LAMP BASE
Henry O. Strehl, 3920 E. Washington, Phoenix, Ariz. 85034
Filed June 18, 1968, Ser. No. 12,410
Term of patent 14 years
Int. Cl. D26—*02*
U.S. Cl. D48—20



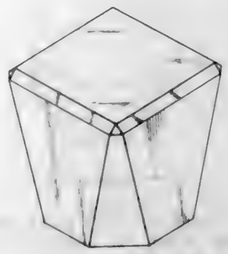
214,132
BASE FOR A CIGARETTE LIGHTER OR THE LIKE
Rudolf G. Niemoller, Pofadder, via Kakamas, Cape Province, Republic of South Africa, assignor to R. G. Niemoller (Proprietary) Limited, Pofadder, via Kakamas, Cape Province, Republic of South Africa
Filed Sept. 11, 1967, Ser. No. 8,542
Claims priority, application Republic of South Africa Mar. 23, 1967
Term of patent 14 years
Int. Cl. D6—*01;* D19—*02;* D27—*05*
U.S. Cl. D48—27



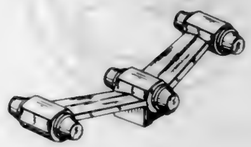
214,133
BASE FOR A CIGARETTE LIGHTER OR THE LIKE
Rudolf G. Niemoller, Pofadder, via Kakamas, Cape Province, Republic of South Africa, assignor to R. G. Niemoller (Proprietary) Limited, Pofadder, via Kakamas, Cape Province, Republic of South Africa
Filed Sept. 11, 1967, Ser. No. 8,543
Claims priority, application Republic of South Africa Mar. 23, 1967
Term of patent 14 years
Int. Cl. D6—*01;* D19—*02;* D27—*05*
U.S. Cl. D48—27



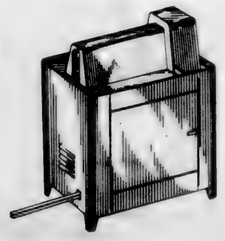
214,134
BASE FOR A CIGARETTE LIGHTER OR THE LIKE
Rudolf G. Niemoller, Pofadder, via Kakamas, Cape Province, Republic of South Africa, assignor to R. G. Niemoller (Proprietary) Limited, Pofadder, via Kakamas, Cape Province, Republic of South Africa
Filed Sept. 11, 1967, Ser. No. 8,545
Claims priority, application Republic of South Africa Mar. 23, 1967
Term of patent 14 years
Int. Cl. D6—*01;* D19—*02;* D27—*05*
U.S. Cl. D48—27



214,135
VEHICLE LIGHT UNIT
Joseph F. Gazzo, 1303 McKinley Ave., Des Moines, Iowa 50315
Filed July 17, 1968, Ser. No. 12,803
Term of patent 14 years
Int. Cl. D26—*02, 99;* D12—*14*
U.S. Cl. D48—32



214,136
CHAIN LINK FENCE-MAKING MACHINE OR THE LIKE
Harrison B. Mayfield, 12737 Mitchell Ave., Los Angeles, Calif. 90066
Filed Jan. 31, 1968, Ser. No. 10,373
Term of patent 14 years
Int. Cl. D15—*05*
U.S. Cl. D55—1

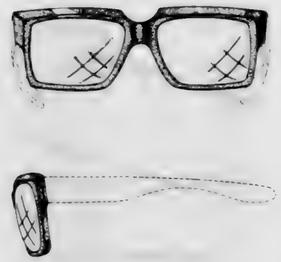


214,137
MAGNIFIER
Stephen K. Bright, Perinton, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Dec. 7, 1967, Ser. No. 9,691
Term of patent 14 years
Int. Cl. D16—*08*
U.S. Cl. D57—1

214,138
PAIR OF SUN SPECTACLES
Richard L. Huggins, Lima, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed July 1, 1968, Ser. No. 12,558
Term of patent 14 years
Int. Cl. D16—*08*
U.S. Cl. D57—1

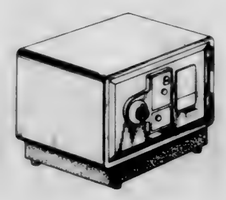


214,139
PAIR OF SPECTACLES
Jean R. Simon, Brighton, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed July 1, 1968, Ser. No. 12,575
Term of patent 14 years
Int. Cl. D16—*08*
U.S. Cl. D57—1

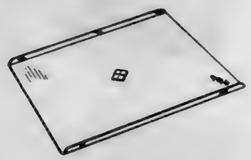


214,140
PHOTOGRAPHIC TRANSPARENCY VIEWER
Cho-tan Cheng, 93A Prince Edward Road, 2nd Floor, Kowloon, Hong Kong
Filed Jan. 4, 1968, Ser. No. 10,062
Term of patent 14 years
Int. Cl. D16—*03*
U.S. Cl. D61—1

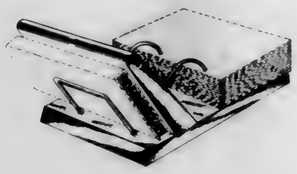
214,141
COIN-OPERATED LOCKER
Ichiro Horikoshi, 1–16, Takasago 8-chome, Katsushika-ku, Tokyo, Japan
Filed Apr. 24, 1968, Ser. No. 11,609
Term of patent 14 years
Int. Cl. D29—*99;* D31
U.S. Cl. D69—1



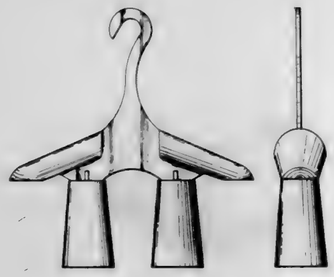
214,142
SUPPORT FOR A STENOGRAPHIC NOTEBOOK
Gregory S. Dolgorukov, 407 Fisher Building, Ferndale, Mich. 48202
Continuation of design application Ser. No. 86,626, Aug. 18, 1965, which is a continuation-in-part of design application Ser. No. 82,544, Nov. 10, 1964. This application Nov. 10, 1966, Ser. No. 4,614
Term of patent 14 years
Int. Cl. D19—*02, 04*
U.S. Cl. D74—1



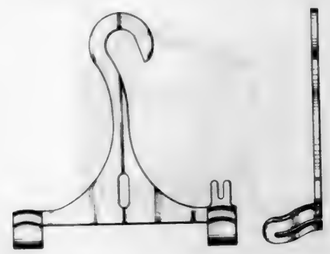
214,143
HOLDER FOR A CARD INDEX OR THE LIKE
Jean-Pierre Goeury, Sceaux, France, assignor to Office d'Etudes et de Diffusion Pharmaceutique & Centre de Recherche et d'Etude Medicale O.E.D.I.P.-C.E.R.E.M., Saligny, Yonne, France
Filed Nov. 14, 1967, Ser. No. 9,406
Claims priority, application France May 16, 1967
Term of patent 14 years
Int. Cl. D19—*02, 03*
U.S. Cl. D74—2



214,144
WET SUIT HANGER
Donald G. Papineau, 26 Willow Road, Greenville, R.I. 02828
Filed Apr. 29, 1968, Ser. No. 11,653
Term of patent 14 years
Int. Cl. D6—*07*
U.S. Cl. D80—8



214,145
HANGER FOR SKIN DIVER EQUIPMENT
Donald G. Papineau, 26 Willow Road, Greenville, R.I. 02828
Filed Apr. 29, 1968, Ser. No. 11,658
Term of patent 14 years
Int. Cl. D6—*07*
U.S. Cl. D80—8



214,146
COVER FOR USE ON A NURSING BOTTLE
Michael C. Ritsi, 7950 SW. 16th St., Miami, Fla. 33145
Filed Aug. 29, 1968, Ser. No. 13,310
Term of patent 14 years
Int. Cl. D24—*05*
U.S. Cl. D83—8



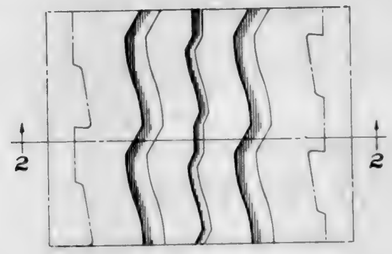
214,147
NURSING BOTTLE
Michael C. Ritsi, 7950 SW. 16th St., Miami, Fla. 33145
Filed Aug. 29, 1968, Ser. No. 13,311
Term of patent 14 years
Int. Cl. D24—*05*
U.S. Cl. D83—8



214,148
NURSING NIPPLE FOR USE WITH A NURSING BOTTLE
Michael C. Ritsi, 7950 SW. 16th St., Miami, Fla. 33155
Filed Aug. 29, 1968, Ser. No. 13,312
Term of patent 14 years
Int. Cl. D24—*05*
U.S. Cl. D83—8



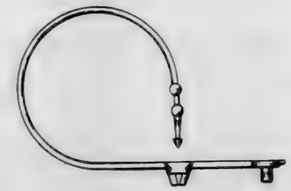
214,149
TIRE
Miles F. Morstatter, Akron, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Mar. 20, 1968, Ser. No. 11,058
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D90—20



214,150
FLEXIBLE DRINKING STRAW
William Nardone, Revere, Mass., assignor to Sweetheart Plastics, Inc., Wilmington, Mass., a corporation of Maryland
Continuation-in-part of design application Ser. No. 7,638, June 29, 1967, now Patent No. 211,226, dated May 28, 1968. This application Jan. 18, 1968, Ser. No. 10,203
Term of patent 14 years
Int. Cl. D7—*99*
U.S. Cl. D94—3



214,151
FILAMENT FOR ATTACHING A PRICE TAG TO AN ARTICLE OF MANUFACTURE
Francis G. Merser, Framingham, Mass., assignor to Dennison Manufacturing Company, Framingham, Mass., a corporation of Nevada
Filed Apr. 12, 1968, Ser. No. 11,433
Term of patent 14 years
Int. Cl. D20—*99*; D9—*08*
U.S. Cl. D96—1



214,152
FILAMENT FOR ATTACHING ARTICLES TOGETHER
Francis G. Merser, Framingham, Mass., assignor to Dennison Manufacturing Company, Framingham, Mass., a corporation of Nevada
Filed Apr. 12, 1968, Ser. No. 11,435
Term of patent 14 years
Int. Cl. D20—*99*; D9—*08*
U.S. Cl. D96—1



214,153
FILAMENT FOR ATTACHING A PRICE TAG TO AN ARTICLE OF MANUFACTURE
Francis G. Merser, Framingham, Mass., assignor to Dennison Manufacturing Company, Framingham, Mass., a corporation of Nevada
Filed Apr. 12, 1968, Ser. No. 11,436
Term of patent 14 years
Int. Cl. D20—*99*; D9—*08*
U.S. Cl. D96—1



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 13TH DAY OF MAY, 1969

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Currier, John A., to Scott & Williams, Inc. Methods and machines for stocking production. Re. 26,580, 5–13–69, Cl. 66—26.

Currier, John A., to Scott & Williams, Inc. Knitted products. Re. 26,581, 5–13–69, Cl. 66—187.

Daimler-Benz Aktiengesellschaft: *See*—
Naumann, Fritz. Re. 26,578.

Esso Research and Engineering Co.: *See*—
Waddell, Mathis T., Powers, and Saunders. Re. 26,579.

Naumann, Fritz, to Daimler-Benz Aktiengesellschaft. Bearing structure. Re. 26,578, 5–13–69, Cl. 74—801.

Powers, John M.: *See*—
Waddell, Mathis T., Powers, and Saunders. Re. 26,579.

Saunders, Rhoderick K.: *See*—
Waddell, Mathis T., Powers, and Saunders. Re. 26,579.

Scott & Williams, Inc.: *See*—
Currier, John A. Re. 26,580.
Currier, John A. Re. 26,581.

Waddell, Mathis T., J. M. Powers, and R. K. Saunders, to Esso Research and Engineering Co. Heater. Re. 26,579, 5–13–69, Cl. 126—59.5.

LIST OF PLANT PATENTEES

Boerner, Eugene S., deceased (by Lincoln Rochester Trust Co., and R. L. Boerner, executors), to Jackson & Perkins Co. Rose plant. 2,886, 5–13–69, Cl. 26.

Boerner, Roger L.: *See*—
Boerner, Eugene S. 2,886.

Jackson & Perkins Co.: *See*—
Boerner, Eugene S. 2,886.

Lincoln Rochester Trust Co.: *See*—
Boerner, Eugene S. 2,886.

LIST OF DESIGN PATENTEES

Appel, Mel, and M. Schnur. Bowl. 214,130, 5–13–69, Cl. D44—15.

Bausch & Lomb Inc.: *See*—
Bright, Stephen K. 214,137.
Huggins, Richard L. 214,138.
Simon, Jean R. 214,139.

Bright, Stephen K., to Bausch & Lomb Inc. Magnifier. 214,137, 5–13–69, Cl. D57—1.

Case, J. I., Co.: *See*—
Renquist, Bruce L. 214,127.

Cheng, Cho-Tan. Photographic transparency viewer. 214,140, 5–13–69, Cl. D61—1.

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Dolgorukov, Gregory S. Support for a stenographic notebook. 214,142, 5–13–69, Cl. D74—1.

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Gazzo, Joseph F. Vehicle light unit. 214,135, 5–13–69, Cl. D48—32.

Goeury, Jean-Pierre, to Office d'Etudes et de Diffusion Pharmaceutique & Centre de Recherche et d'Etude Medicale O.E.D.I.P.C.E.R.E.M. Holder for a card index or the like. 214,143, 5–13–69, Cl. D74—2.

Goodrich, B. F., Co., The: *See*—
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Grooms, Percy E. Combined portable crib and compartmented storage container. 214,124, 5–13–69, Cl. D5—5.

Horikoshi, Ichiro. Coin operated locker. 214,141, 5–13–69, Cl. D69—1.

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Mayfield, Harrison B. Chain link fence-making machine or the like. 214,136, 5–13–69, Cl. D55—1.

Merser, Francis G., to Dennison Mfg. Co. Filament for attaching a price tag to an article of manufacture. 214,151, 5–13–69, Cl. D96—1.

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Merser, Francis G., to Dennison Mfg. Co. Filament for attaching a price tag to an article of manufacture. 214,153, 5–13–69, Cl. D96—1.

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Papineau, Donald G. Wet suit hanger. 214,144, 5–13–69, Cl. D80—8.

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Abbott Laboratories: *See—*
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ACF Industries, Incorporated: *See—*
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Ackerman, Joseph Francis, and Shur, Eliakum Gustave, to Interchemical Corporation. Low temperature curable wood coating composition. 3,444,113, 05-13-69, Cl. 260-021.

Acker, William L., and Boezi, Peter. Connector assembly for axially connecting rods and tubing. 3,443,827, 05-13-69, Cl. 285-039.

Ackroyd, Muriel D., to Eastman Kodak Company. Triplet-type projection lens. 3,443,864, 05-13-69, Cl. 350-226.

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Adelman, Robert L., to Du Pont de Nemours, E. I., and Company. Copolymers of selected polyfluoroperhaloketone adducts with other selected ethylenic compounds. 3,444,148, 05-13-69, Cl. 260-080.72

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Alexander, William J. Hand truck with extendable body. 3,443,821, 05-13-69, Cl. 280-034.

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Battista, Orlando A., Cruz, Mamerto M., Jr., and Riley, Walter J., to FMC Corporation. Prosthetic structures from microcrystalline collagen. 3,443,261, 05-13-69, Cl. 003-001.

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Becker, Stephen P., to Fargo Mfg. Company, Inc. Connector assembly. 3,444,505, 05-13-69, Cl. 339-094.

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Branson, Norman G., to Branson Instruments, Incorporated. Instrument for measuring cavitation intensity in a liquid. 3,443,797, 05-13-69, Cl. 259-072.

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Bregazzi, Michael, to Shawinigan Chemicals Limited. Densification of acetylene black. 3,443,900, 05-13-69, Cl. 023-209.1

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Bremer, Ferdinand, and Meyer, Joachim, to Beteiligungs- und Patentverwaltungsgesellschaft mit beschrankter Haftung. High pressure container. 3,443,631, 05-13-69, Cl. 165-047.

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Brewer, George E. F., Burnside, Gilbert L., Mohar, Arnulf F., and Strosberg, Gordon G., to Ford Motor Company. Method of electrically induced deposition of paint on conductors. 3,444,066, 05-13-69, Cl. 204-181.

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Brooks, Ernest J. Practice device for golfers. 3,443,811, 05-13-69, Cl. 273-183.

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Brown, Robert F., Jr., to Teledyne Industries, Inc. Flux-gate head circuit. 3,444,332, 05-13-69, Cl. 179-100.2

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Brunskole, Josef H., to Canadian Seating Company Limited. Collapsible chair. 3,443,835, 05-13-69, Cl. 297-035.

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Burg, Fred G., and Lenders, Socrates, to Houdaille Industries, Inc., mesne. Fine-medium-coarse servomotor position control. 3,444,446, 05-13-69, Cl. 318-018.

Burke, Hubert K., and Michon, Gerald J., to General Electric Company. Function generator utilizing linear and saturable core transformers. 3,444,454, 05-13-69, Cl. 321-016.

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King, Harry J., to Hughes Aircraft Company. Fluid feed system. 3,443,383, 05-13-69, Cl. 060-202.

King, Harry J., Molitor, Jerome H., and Ward, James W., to Hughes Aircraft Company. High voltage isolator for liquid feedline. 3,443,570, 05-13-69, Cl. 137-001.

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Knox, Lawrence H., deceased (by Knox, Anne A., legal representative), to Syntex Corporation. 7-Fluoro-B-homo steroids and their preparation. 3,444,188, 05-13-69, Cl. 260-488.

Kobashi, Uichiro, to Aisin Seiki Kabushiki Kaisha. Fan apparatus for cooling engine. 3,443,744, 05-13-69, Cl. 230-270.

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3— 1	3,443,261	592	3,443,311	398	3,443,397	307	3,443,467	6	3,443,520		3,443,575
4— 67	3,443,262	622	3,443,312	63— 13	3,443,398	315	3,443,468	38	3,443,521	88	3,443,576
172	3,443,263	30—134	3,443,313	64— 2	3,443,399	410	3,443,469	126	3,443,522	209	3,443,577
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191	3,443,266	33—138	3,443,316	65— 22	3,443,920	85— 7	3,443,472	88	3,443,525		3,443,580
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8— 14	3,443,878	203.18	3,443,318	193	3,443,922	72	3,443,474	105—136	3,443,527	495	3,443,582
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13— 9	3,444,304	19	3,443,323	187	RE.26,581	12	3,443,479	90	3,443,975	.18	3,443,587
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U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

May 13, 1969 Volume 862 Number 2

TRADEMARKS

NOTICES

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 57,742 (THOR), Thor Power Tool Company, Portable motor-driven pneumatic drills, portable motor-driven pneumatic hammers, and other portable motor-driven pneumatic tools and parts of and repairs for said tools; **Reg. No. 97,111**, same, Portable electrically actuated drills; **Reg. No. 129,168**, same, Hose-couplings; **Reg. No. 523,014**, same, Independent Pneumatic Tool Company, Electrically actuated portable power tools, comprising drills, star drills, screw drivers, stud setters, nut setters, wrenches, reamers, tappers, nibblers, hammers, saws, grinders, valve seat grinders, rotary files, wire brush machines, sanders, polishers and buffers, and parts, attachments and accessories therefor comprising electric motors, armature assemblies, field assemblies, electric cord, plugs, switches, rotor assemblies, stator assemblies and electric motor fans; **Reg. No. 536,416**, same, Carriages for supporting and transporting wagon drills; **Reg. No. 561,043**, same, Pneumatically actuated portable and stationary power tools and machines, comprising drills, screw drivers, stud setters, nut setters, rotary wrenches, impact wrenches, tappers, nibblers, hammers, chipping hammers, scaling hammers, calking hammers, beading hammers, riveting hammers, spike drivers, nail drivers, core busters, rivet busters, holders-on, rammers, rivet drivers, rivet squeezers, grinders, valve seat grinders, rotary files, sanders, polishers, buffers, chisels, wire brush machines, saws, rock drills including sinkers, drifters, stoppers and pluggers, wagon drills, paving and concrete breakers, clay diggers, trench diggers, tampers, hitch cutters, sump pumps, vibrators and hoists, electrically operated bench and stationary power tools and machines, comprising general purpose grinders, valve seat refacers and valve seat grinders, and parts, attachments, and accessories therefor and for electrically operated portable power tools, said parts, attachments and accessories comprising bearings, gears, metal packings, metal bushings, clutch jaws, rotor blades for pneumatic motors, sockets, socket wrench shanks, chucks, screw driver bits, chuck keys, screw driving and nut setting attachments for drills, adapters for operable securing attachments in portable power tools, mandrels, arbors, angle attachments, extension shanks, extension bits, twist drills, reamers, spindles, extension spindles, spindle protection caps, circular saw blades, hole saw blades, rotary files, cushion and backing pads for sanders and polishers, screw finders and finder assemblies, valve guide cleaners of the reamer type, hole spotters for locating holes for a working tool, chisels, chisel blanks, gouges, turning wrenches for straight shank tools, bush hammers, bull points, grinding wheel holders, cutting tools, grinding wheel guards, chisel retainers, steel cutters, dust collectors and shields, universal joints, kick-out clutch attachments, positive clutch attachments, slip clutch attachments, tool holders, throttles, grip handles, breast plates, extension handles, manually operated speed regulators for

CONDITION OF TRADEMARK APPLICATIONS AS OF MARCH 31, 1969

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]	14,617
Date of oldest new application	February 20, 1968
Date of oldest amended application (filing date)	June 4, 1963

C. M. WENDT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application: New	Oldest Application: Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	6-21-66	6-4 -63
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	6-12-68	5-24-66
(III) P. S. BALL, Classes 19, 21, 23, 26, 31, 34, 35, 36	9-3 -68	1-21-66
(IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	2-20-68	6-1 -65
Renewals (All Classes)	1-21-60	----------
Sec. 12(c) Publications (All Classes)	2-5 -69	----------

Applications filed during the month of March 1969—2,850

Registrations Issued ---------- 352—No. 869,206 to No. 869,557
Renewals Issued ---------- 150

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PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 30 cents each. Address orders to the Commissioner of Patents, Washington, D.C. 20231.

controlling the speed of pneumatic tools, rivet sets for riveting hammers, rivet set clips, rivet chisels, drill steels for rock drills, hand sharpening tools for forming the bit ends of drill steels, caulking tools, beading tools, blower throttles, butts, peins, rivet jaws, rivet yokes, knock-out punches, blow guns, sheeting drivers, asphalt cutters, clay spades, frost wedges, moil points, rock breakers, broaching tools, tampers, digging points, gad points, flat picks, hoist trolleys, drill centralizers for grinding drill steels of rock drills, and tool resets; pilot pin wrenches, expanding and plug pilots for valve grinding tools; balancers for suspending power tools in working position; tool supports and stands; power tool kits comprising portable pneumatic or electric power tools and attachments and accessories therefor; rotary air motors; grinding wheel dressers and diamond nibs therefor; and hand tools for the service, repair, disassembly and assembly of portable, bench and stationary power tools, machines and parts, attachments and accessories therefor, comprising wrenches, tool holders, lapps, re-threading and sizing dies, extractors, reamers, drifts, taps, bench blocks, clamps, clamping rings, screw drivers, screw driving bits, broaches, pliers, pullers, facing tools, arbors, spreaders, rivet upsetters, screw upsetters and removers, wedges, punches, vises, vibrators for testing hammer speeds, fan removing tubes, and fixtures for holding, assembly, removal and installation of tool parts; **Reg. No. 632,643**, same, Thor Power Tool Company, Gasoline engine driven power trowels; **Reg. No. 663,434**, same, Gasoline driven vibratory finishing screeds for concrete, pneumatic concrete vibrators, and multiple pneumatic nut setter units, **filed** Mar. 4, 1969, D.C., N.D. Ill. (Chicago), Doc. 69c465, *Thor Power Tool Company* v. *Interthor, Inc., and Thornel Associates, Inc.*

Reg. No. 97,111. (See Reg. No. 57,742.)

Reg. No. 129,168. (See Reg. No. 57,742.)

Reg. No. 198,531 (BELIEVE IT OR NOT), Ripley Enterprises, Inc., Series of cartoons; **Reg. No. 355,896** (BELIEVE IT OR NOT! RIPLEY), Robert J. Hyland and the New York Trust Company, trustees of the estate of Robert L. Ripley, Graphics, cartoons, sketches, drawings, and illustrations, as contributions to and components of newspapers, periodicals, books, advertising matter, and motion pictures, **filed** Jan. 14, 1969, D.C., S.D.N.Y., Doc. 69–C–134, *Ripley Enterprises, Inc.* v. *Procter & Gamble Co.*

Reg. No. 270,774 (REPRESENTATION OF OVAL DESIGN), Interstate Bakeries Corp., Bread and cake; **Reg. No. 586,855** (FANCIFUL DESIGN), same, Bread; **Reg. No. 669,675** (A WEBER'S VARIETY BREAD AND DESIGN), same, Bakery products—namely, bread and rolls; **Reg. No. 642,408** (WEBER'S AND DESIGN), same, Bread; **Reg. No. 629,968** (BUTTERNUT AND OVAL DOILY DESIGN), same, Standard commercial white bread, **filed** Apr. 30, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c784, *Interstate Bakeries Corp.* v. *The Borden Company and Joseph A. Greaves.* Consent judgment, complaint and counterclaim dismissed with prejudice, Mar. 7, 1969.

Reg. No. 355,396. (See Reg. No. 198,531.)

Reg. No. 356,902. (See Reg. No. 363,783.)

Reg. No. 363,783 (MERLA), Merla Tool Corporation, Oil well tools, such as flow valves, packers, flow beans, standing valves, insert pumps, anchors, swabs, sucker rod guides, and the like; **Reg. No. 356,902** (DESIGN OF SCROLL ON GEAR), same, **filed** Feb. 19, 1969, D.C., N.D. Tex. (Dallas), Doc. CA–3–3024–C, *Merla Tool Corporation and Merla, Inc.* v. *Merla de Mexico, S.A. de C.V. et al.*

Reg. No. 523,014. (See Reg. No. 57,742.)

Reg. No. 536,416. (See Reg. No. 57,742.)

Reg. No. 561,048. (See Reg. No. 57,742.)

Reg. No. 571,798 (ROQUEFORT), The Community of Roquefort, Cheese, **filed** Jan. 8, 1965, D.C., N.D. Tenn. (Nashville), Doc. 3974, *The Community of Roquefort et al.* v. *Helen J. Nolan, doing business as Brass Rail Stables.* Consent judgment, dismissed, Mar. 21, 1969.

Reg. No. 582,437 (FARMER'S BEST), Tyler-Gregg Poultry and Egg Company, Inc., Fresh dressed and frozen frying, roasting, and broiling poultry, **filed** Mar. 11, 1969, D.C., S.D. Tex. (Houston), Doc. CA69–H–231, *Louis H. Klayman, doing business as Farmer's Best Foods* v. *Farmbest, Inc.*

Reg. No. 586,855. (See Reg. No. 270,774.)

Reg. No. 605,082 (DEMCO AND DESIGN), Drilling Equipment Manufacturing Company, Tong dies, circulating-type rod oilers, float seat pullers, rods and liners for pumps, gland bushings and junk rings for slush pumps, greenhead bits, mud hopper, rotating mud mixing gun, pump brace and spacers; **Reg. No. 863,791** (DEMCO), Demco, Incorporated, Oil field and air conditioning apparatus, and the like—namely, drill-pipe float valves and pullers, safety relief valves, gate valves; butterfly valves and accessories—namely, gear operators and automatic actuators; throttling and globe valves; hydraulic choke nipples; hydraulic hose connections; standpipe clamps; pump studs; and hexagon and hammer lug nuts (Class 13); Tong dies; mud hoppers; mud mixing guns; pump braces and spacers; gland bushings and junk rings for slushpumps; and centrifugal separators (Class 23); Casing and blowout preventer testers (Class 26); **Reg. No. 863,792** (DEMCO AND DESIGN), same, Oil field and air conditioning apparatus and the like—namely, drillpipe float valves and pullers, safety relief valves, gate valves; butterfly valves and accessories, namely, gear operators and automatic actuators; throttling and globe valves; hydraulic choke nipples; hydraulic hose connections; standpipe clamps; pump studs; and hexagon and hammer lug nuts (Class 13); Centrifugal separators (Class 23); Casing and blowout preventer testers (Class 26), **filed** Feb. 12, 1969, D.C., E.D. Mo. (St. Louis), Doc. 69C50(2), *Demco, Incorporated* v. *Development Engineering & Mfg. Co. et al.*

Reg. No. 620,968. (See Reg. No. 270,774.)

Reg. No. 632,643. (See Reg. No. 57,742.)

Reg. No. 642,408. (See Reg. No. 270,774.)

Reg. No. 663,434. (See Reg. No. 57,742.)

Reg. No. 669,675. (See Reg. No. 270,774.)

Reg. No. 747,552 (MATTY), Mattel, Inc., Doll and toy horse, **filed** Jan. 29, 1969, D.C., S.D.N.Y., Doc. 69–C–364, *Mattel Inc.* v. *Mego Corp.*

Reg. No. 765,639 (CARROUSEL), Tiep Paper Products, Party favors, **filed** Mar. 21, 1969, D.C., C.D. Calif. (Los Angeles), Doc. 69–537–EC, *Carrousel Party Favors, Inc.* v. *Gay-Gem Products Corp., Merry Time Products Corp.*

Reg. No. 855,715 (TANTALLON), Prestwick, Inc., Real estate brokerage, leasing, and management (Class 101); Mortgaging real estate (Class 102); Construction, maintenance, and repair of residential communities—namely, houses, public buildings, swimming pools, apartments, marinas, golf courses, and shopping centers (Class 103), **filed** Sept. 20, 1968, D.C. Md. (Baltimore), Doc. 19908, *Prestwick, Inc.* v. *Don Kelly Building Company.* Order enjoining defendant, case dismissed, Mar. 12, 1969.

Reg. No. 863,791. (See Reg. No. 605,082).

Reg. No. 863,792. (See Reg. No. 605,082.)

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 176,348. Automatic Radio Mfg. Co., Inc., Boston, Mass. Filed Sept. 5, 1963.

AUTOMATIC

Class 21—Electrical Apparatus, Machines, and Supplies

For Portable Radios, Automobile Radios, Truck Radios, Boat Radios, Ignition Systems, and Antennas (Int. Cl. 9).
First use 1920.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Air Conditioners (Int. Cl. 11).
First use 1961.

SN 240,767. Moore Manufacturing Inc., San Francisco, Calif. Filed Mar. 11, 1966.

MOORE

Owner of Reg. No. 581,358.

Class 21—Electrical Apparatus, Machines, and Supplies

For Electrical Conduit Made of Plastic (Int. Cl. 9).
First use Jan. 15, 1965.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

For Rubber and Plastic Lawn Hose, Plastic Irrigation Hose, Conveyor Belting, and Mechanical Packing (Int. Cls. 7 and 17).
First use Jan. 1, 1949.

SN 250,918. Allied Fence Corp., Houston, Tex., assignee of Allied Chain Link Fence Co., Inc., Houston, Tex. Filed July 25, 1966.



The word "Fence" is disclaimed apart from the mark as shown.

Class 12—Construction Materials

For Wood Fences (Int. Cl. 19).
First use about 1955.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Wire and Metal Fences (Int. Cl. 6).
First use about 1946.

SN 281,253. The Low Calorie Candy Co., Inc., Yonkers, N.Y. Filed Sept. 27, 1967.

WEIGHT WATCHERS

Class 18—Medicines and Pharmaceutical Preparations

For Vitamin Tablets (Int. Cl. 5).

Class 51—Cosmetics and Toilet Preparations

For Face Cream (Int. Cl. 3).
First use Sept. 21, 1967.

SN 282,742. Go Promotions, Inc., Wayne, Mich. Filed Oct. 18, 1967.



Owner of Reg. No. 829,272.

Class 101—Advertising and Business

For Promoting the Sale of Goods and Services of Retail Establishments, Who Are Associated With Applicant's Organization, Through Discounts Given to Customers, Who Are Also Members of Applicant's Organization (Int. Cl. 35).
First use Oct. 9, 1964.

Class 102—Insurance and Financial

For Credit Card Services—Namely, the Extension of Credit to Applicant's Card Holders for the Purchases of Goods From Establishments, Which Have Agreed To Honor Applicant's Credit Cards (Int. Cl. 36).
First use July 30, 1965.

SN 291,198. Spenco, Incorporated, Salt Lake City, Utah. Filed Feb. 15, 1968.

SPENCO

Class 39—Clothing

For Boots for Hospital Patients and Innersoles (Int. Cl. 25).

Class 44—Dental, Medical, and Surgical Appliances

For Pads for Protecting Skin and Bed Pan Liners (Int. Cl. 5).
First use June 1, 1967.

SN 296,736. Swiss Laboratory, Inc., Bedford Heights, Ohio. Filed Apr. 29, 1968.

SWISS

Owner of Reg. No. 748,973 and others.

Class 12—Construction Materials

For Plastic Filling, Repairing and Sealing Materials for Industrial, Household, Farm, Aircraft, Railroad, Automotive and Marine Applications as Well as Putty (Int. Cls. 2 and 17).

Class 16—Protective and Decorative Coatings

For Plastic Undercoating Materials (Int. Cl. 2).

Class 34—Heating, Lighting, and Ventilating Apparatus

For Welding Supplies—Namely, Flux, Metal Solder, Tinning Compound, Brazing and Welding Metals (Int. Cls. 1 and 6).
First use at least as early as Jan. 10, 1940.

SN 298,378. KMS Industries, Inc., Ann Arbor, Mich. Filed May 17, 1968.



Class 36—Musical Instruments and Supplies

For Prerecorded Magnetic Sound Tapes (Int. Cl. 9).

Class 38—Prints and Publications

For Picture Books (Int. Cl. 16).
First use Apr. 5, 1968.

SN 298,380. Ralmike's Tool-A-Rama, Springfield, N.J. Filed May 17, 1968.

RALMIKE'S

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Machine Tools—Namely, Punches, V-Blocks, Laps, Taps, Collet Blocks, Clamps, Vises, Drills, Jigs, Grinding Tools, Cutting Tools, Boring Tools, Lathe Attachments and Lifting Gear (Int. Cl. 7).

Class 26—Measuring and Scientific Appliances

For Gaging Tools—Namely, Micrometers, Calipers, Gauge Blocks, Magnetic Cylinder Square, Bore and Groove Gauges, Centering Scopes, and Flashlight Comparators (Int. Cl. 9).
First use Mar. 1, 1963.

SN 299,509. VSC, Inc., Clara City, Minn., by change of name from Variety Supply Company, Clara City, Minn. Filed May 31, 1968.



Owner of Reg. No. 745,506.

Class 39—Clothing

For Baby Shoes and Baby Gowns and Infants' Binders (Int. Cl. 25).

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Crib Sheets (Int. Cl. 24).
First use Oct. 3, 1960.

SN 303,562. Argus Press, Inc., Chicago, Ill. Filed July 26, 1968.

DLM

Class 22—Games, Toys, and Sporting Goods

For Play and Educational Concept Toys (Int. Cl. 28).

Class 38—Prints and Publications

For Printed Pictures and Designs Useful for Teaching Developmental Learning Skills (Int. Cl. 16).
First use at least as early as February 1968.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 292,578. Hill & Company, Inc., Wayzata, Minn. Filed Mar. 6, 1968.

PRODUCTS FOR PROGRESS

For Packaged Logs for Fireplace Use (Int. Cl. 4).
First use Feb. 23, 1968.

SN 306,399. Rexall Drug and Chemical Company, d.b.a. Fiberfil, Los Angeles, Calif. Filed Aug. 30, 1968.

PETFIL

For Synthetic Molding Resins in Pellet or Granular Form (Int. Cl. 1).
First use Aug. 16, 1968.

SN 306,878. Wm. T. Burnett & Co., Incorporated, Baltimore, Md. Filed Sept. 9, 1968.

"Comfort through Chemistry"

Owner of Reg. Nos. 640,517 and 746,043.
For Polyurethane Foam, and Synthetic Fiber Batting—Namely, Acetate and Polyester Fiber Batting (Int. Cl. 17).
First use Nov. 19, 1954.

SN 313,227. The Dow Chemical Company, Midland, Mich. Filed Nov. 29, 1968.

BONARIL

For Synthetic Polymer Used in Foundry Sands To Improve Their Flowability, Packing, Moldability, and Other Characteristics (Int. Cl. 1).
First use Nov. 30, 1960.

SN 313,865. Dow Badische Company, Williamsburg, Va. Filed Dec. 9, 1968.

BELLURE

For Synthetic Textile Fiber (Int. Cl. 22).
First use Nov. 19, 1968.

SN 313,867. Dow Badische Company, Williamsburg, Va. Filed Dec. 9, 1968.

BOBERLAR

For Synthetic Textile Fiber (Int. Cl. 22).
First use Nov. 8, 1968.

SN 313,868. Dow Badische Company, Williamsburg, Va. Filed Dec. 9, 1968.

DOBELAR

For Synthetic Textile Fiber (Int. Cl. 22).
First use Nov. 8, 1968.

Class 2—Receptades

SN 302,511. P.P.C. Industries, Inc., Wheeling, Ill., by change of name from Plastic Packaging Company, Wheeling, Ill. Filed July 11, 1968.

PROMOTER

For Plastic Bags (Int. Cl. 20).
First use June 20, 1968.

SN 306,400. Rexall Drug and Chemical Company, d.b.a. Tupperware, Los Angeles, Calif. Filed Aug. 30, 1968.

TUPPERCRAFT

Owner of Reg. Nos. 790,870 and 803,375.
For Plastic Household Containers and Covers Therefor (Int. Cl. 21).
First use in or about October 1962.

SN 311,281. Edward J. Ludes, d.b.a. Mailalert Enterprises, Hollywood, Calif. Filed Nov. 4, 1968.

MAILALERT

For Signal Device Attached to Certain Types of Mailboxes To Automatically Indicate the Delivery of Mail (Int. Cl. 21).
First use Sept. 8, 1968.

SN 311,829. Cello Bag Company, Inc., Tukwila, Wash. Filed Nov. 12, 1968.

CELLOROLL

For Plastic Bags (Int. Cl. 20).
First use Oct. 1, 1968.

SN 313,290. Habitat, Inc., New York, N.Y. Filed Nov. 29, 1968.

HABITAT

Owner of Reg. Nos. 538,548 and 672,232.
For Planters and Waste Receptacles (Int. Cl. 21).
First use on or about Nov. 8, 1963.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 303,410. Giftwing International, U.S.A., Inc., Detroit, Mich. Filed July 23, 1968.

THE PURSESNATCHER

For Horseshoes (Int. Cl. 18).
First use June 5, 1968.

Class 4—Abrasives and Polishing Materials

SN 287,410. Acme Scientific Company, Chicago, Ill. Filed Dec. 22, 1967.

SUPERLAP

For Diamond Compounds, Applicator Packaged Diamond Compounds (Int. Cl. 3).
First use Apr. 3, 1953.

SN 295,835. Merit Products, Inc., Los Angeles, Calif. Filed Apr. 17, 1968.



For Abrasive Grinding Wheels, Polishing Wheels and Sanding Wheels, and Abrasive Refills for Said Wheels; Slotted, Unslotted and Flexible Abrasive Discs, and Abrasives in Roll, Belt, Pad, and Sheet Form (Int. Cls. 3 and 7).
First use 1951.

SN 306,456. Cardinal Engineering Corporation, Conshohocken, Pa. Filed Sept. 3, 1968.

RED/LINE

For Abrasive Blades (Int. Cl. 7).
First use January 1960.

Class 5—Adhesives

SN 271,078. St. Regis Paper Company, New York, N.Y. Filed May 9, 1967.

ST REGIS

Owner of Reg. Nos. 377,917, 824,262, and others.
For Adhesive Coated Tapes, Pressure Sensitive Adhesive and Cohesives for Closing Containers, Reinforced Cohesive Tapes, Paste and Glue (Int. Cls. 1 and 17).
First use on or about July 20, 1966.

SN 290,777. Treb-Kirby Company, Cleveland, Ohio. Filed Feb. 9, 1968.

T-K

For Pressure Sensitive Tape (Int. Cl. 17).
First use at least as early as Jan. 18, 1968.

Class 6—Chemicals and Chemical Compositions

SN 271,817. Masanori Konaka, Chuo-ku, Tokyo, Japan. Filed May 18, 1967.

青

雲

SEIUN

The two Japanese symbols designate the word "Seiun" and their English translation is "blue sky."
For Incense (Int. Cl. 3).
First use Sept. 1, 1964; in commerce July 20, 1965.

SN 276,225. Ciba Limited, Basel, Switzerland. Filed July 18, 1967.

ALFACRON

Owner of Swiss Reg. No. 213,469, dated Oct. 4, 1965.
For Chemical Preparations for Killing Weeds and Destroying Vermin, and Preparations for Combating Plant Pests (Int. Cl. 5).

SN 282,359. Chemclean Corporation, College Point, N.Y. Filed Oct. 12, 1967.

POLY-PREP

For Chemical Preparation for Application to Surfaces of Plastic Articles To Promote Adhesive Properties of Said Surfaces (Int. Cl. 1).
First use March 1960.

SN 283,694. S.C.D. Chemical Co., Phoenix, Ariz., by change of name from Northwest Distributing, Phoenix, Ariz. Filed Oct. 30, 1967.

OXODENE

For Multi-Purpose Spray Disinfectant-Deodorant (Int. Cl. 5).
First use May 12, 1967.

SN 290,353. The Upjohn Company, Kalamazoo, Mich. Filed Feb. 5, 1968.

ENIDE DINITRO E. C.

Owner of Reg. No. 756,648.
For Agricultural Herbicide (Int. Cl. 5).
First use Nov. 6, 1967.

SN 291,490. The British Drug Houses Limited, London, England. Filed Feb. 20, 1968.

VACTRAN

Owner of British Reg. No. 910,525, dated June 9, 1967; and U.S. Reg. Nos. 799,002 and 852,129.
For Chemical Preparations for Use in Manufacture and Coating of Crystals and of Optical Elements and Optical Glass (Int. Cl. 1).

SN 294,333. Universal Oil Products Company, Des Plaines, Ill. Filed Mar. 27, 1968.

GOMOIDE

For Essential Oils, Esters, Aldehydes, and Ketones for Use in the Manufacture of Perfumes (Int. Cls. 1 and 3).
First use at least as early as Jan. 4, 1949.

SN 297,711. G. D. Searle & Co., Skokie, Ill. Filed May 8, 1968.

ORNITROL

For Pesticide Preparations for the Control of the Pest Bird Population (Int. Cl. 5).
First use Nov. 22, 1967.

SN 300,047. American Grease Stick Company, Limited, Muskegon, Mich. Filed June 10, 1968.

BELT-EASE

Owner of Reg. Nos. 533,714, 820,603, and others.
For Belt Dressing (Int. Cl. 4).
First use at least as early as May 21, 1968.

SN 303,386. Ar Chem Corporation, Portsmouth, Ohio. Filed July 23, 1968.

PARAZINC

For Rodenticide (Int. Cl. 5).
First use March 1968.

SN 304,097. S. S. Kresge Company, Detroit, Mich. Filed Aug. 1, 1968.

SK

For Propane Fuel (Int. Cl. 4).
First use in or before October 1967.

SN 304,470. Imperial Chemical Industries Limited, Millbank, London, England. Filed Aug. 6, 1968.

MONNEX

Owner of British Reg. No. 911,149, dated June 23, 1967.
For Fire Extinguishing Compositions (Int. Cl. 1).

SN 304,665. Ciba Limited, Basel, Switzerland. Filed Aug. 8, 1968.

FAMID

Owner of Swiss Reg. No. 171,252, dated July 7, 1958.
For Chemical Preparations for Killing Weeds and Destroying Vermin, and Preparations for Combating Plant Pests (Int. Cl. 5).

SN 305,347. Sanitized, Inc., New York, N.Y. Filed Aug. 16, 1968.

ACTIFRESH

For Anti-Microbial Preparation Which Retards the Growth and Action of Bacteria, Mold and Mildew, and Resists the Development of Odors in Textiles, Plastics, Leather, and Paper (Int. Cl. 5).
First use Oct. 14, 1964.

SN 305,501. Stauffer Chemical Company, New York, N.Y. Filed Aug. 19, 1968.

BYRAM

For Herbicide (Int. Cl. 5).
First use at least as early as July 29, 1968.

SN 305,542. Hercules Incorporated, Wilmington, Del. Filed Aug. 20, 1968.

VUL-CUP

For Peroxide Catalyst (Int. Cl. 1).
First use July 1, 1968.

SN 305,543. Hercules Incorporated, Wilmington, Del. Filed Aug. 20, 1968.

DELFLOC

For Flocculating Agent (Int. Cl. 1).
First use Feb. 1, 1968.

SN 305,695. Tamms Industries Co., Lyons, Ill. Filed Aug. 21, 1968.

HYDRO-JET

For Black Colorant for Cement and Mortar (Int. Cl. 2).
First use Oct. 18, 1966.

SN 306,477. Geigy Chemical Corporation, Ardsley, N.Y. Filed Sept. 3, 1968.

REACTOSET

Owner of Reg. Nos. 700,764, 847,560, and 853,007.
For Dyestuffs (Int. Cl. 2).
First use Aug. 8, 1968.

SN 306,558. Foseco International Limited, Birmingham, England. Filed Sept. 4, 1968.

STELORIT

Owner of British Reg. No. 912,781, dated Aug. 1, 1967.
For Fluxes for the Treatment of Molten Metals (Int. Cl. 1).

SN 306,947. Rhodia Inc., New Brunswick, N.J. Filed Sept. 9, 1968.

RHOMENE

For Fungicides and Herbicides (Int. Cl. 5).
First use Aug. 26, 1968.

SN 307,113. London Oil Refining Company Limited, Clayton, Manchester, England. Filed Sept. 11, 1968.

LORCO

Owner of British Reg. No. 910,816, dated June 6, 1967.
For Chemical Compositions for Use in Processing Rubber and Plastics (Int. Cl. 1).

SN 307,335. London Oil Refining Company Limited, Clayton, Manchester, England. Filed Sept. 13, 1968.

BANTAC

Owner of British Reg. No. B910,315, dated June 6, 1967.
For Chemical Compositions for Use in Processing Rubber and Plastics (Int. Cl. 1).

SN 307,403. American Cyanamid Company, Wayne, N.J. Filed Sept. 16, 1968.

PERMA PLUS

For Fabric Finish (Int. Cl. 1).
First use Sept. 10, 1968.

SN 307,653. Kalo Inoculant Company, Kansas City, Mo. Filed Sept. 18, 1968.

IRNON

For Inoculating Bacteria for Legume Seeds (Int. Cl. 1).
First use May 11, 1962.

Class 7 — Cordage

SN 296,257. Standard Oil Company, Flemington, N.J. Filed Apr. 23, 1968.

EDCO

For Rope and Cordage (Int. Cl. 22).
First use Oct. 13, 1967.

SN 309,531. American Associated Companies, Inc., Atlanta, Ga. Filed Oct. 14, 1968.

TARZAN

For Rope and Twine (Int. Cl. 22).
First use Feb. 1, 1940.

Class 8 — Smokers' Artides, Not Including Tobacco Products

SN 311,920. Robert W. Pilley, d.b.a. Mar-Ply, Thompson, Iowa, Filed Nov. 12, 1968.

MAR-PLY

For Pipe for Smoking Tobacco (Int. Cl. 34).
First use July 15, 1966.

Class 11 — Inks and Inking Materials

SN 307,680. Spell-Right Corporation, Washington, D.C. Filed Sept. 18, 1968.

SPELL right for typewriters that don't

For Typewriter Ribbons Having Both Writing and Obliterating Facilities (Int. Cl. 16).
First use July 14, 1961.

SN 308,472. A. B. Dick Company, Niles, Ill. Filed Sept. 30, 1968.

VIDEOJET

For Ink for Electronic Printing (Int. Cl. 2).
First use on or about Oct. 11, 1967.

Class 12 — Construction Materials

SN 279,724. Esteban y Bartolome-Industrias de la Madera, S.A., Madrid, Spain. Filed Sept. 6, 1967.

SAN MARCOS

Priority claimed under Sec. 44(d) on Spanish application filed Mar. 7, 1967; Reg. No. 526,481, dated Dec. 23, 1968.
For Doors, Moldings, Window Frames, Door Frames, and Hand-Rails (Int. Cl. 19).

SN 279,725. Esteban y Bartolome-Industrias de la Madera, S.A., Madrid, Spain. Filed Sept. 6, 1967.

SAN AGUSTIN

Priority Claimed under Sec. 44(d) on Spanish application filed Mar. 7, 1967; Reg. No. 526,479, dated Dec. 23, 1968.
For Doors, Moldings, Window Frames, Door Frames, and Hand-Rails (Int. Cl. 19).

SN 295,938. Mouldings, Inc., Harrisburg, Oreg. Filed Apr. 18, 1968.



For Mouldings Used for Trim on Walls, Panelling, Doors, and the Like, for Construction Purposes (Int. Cl. 19).
First use May 17, 1967.

SN 296,727. Steel King Corporation, Cleveland, Ohio. Filed Apr. 26, 1968.

steel king

For Steel Siding (Int. Cl. 6).
First use Feb. 16, 1968.

SN 299,436. Kenneth N. Crowder, Clarkson, Ontario, Canada. Filed May 31, 1968.

LANEL

Owner of Canadian Reg. No. 135,811, dated May 15, 1964.
For Metal Stair Treads and Thresholds With Replaceable Anti-Slip Inserts, and the Inserts for Said Treads and Thresholds (Int. Cl. 6).

SN 301,743. W. R. Grace & Co., Cambridge, Mass. Filed July 1, 1968.

DRI-PAC

For Thermal Setting Roof Deck Insulation Material Composed of Perlite and Asphalt or Other Bituminous Material (Int. Cl. 17).
First use Nov. 1, 1967.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 272,683. Aktiebolaget Mekanprodukter, Hans Holm, Stockholm-Hagersten, Sweden. Filed June 21, 1967.

MECMAN

Owner of Swedish Reg. No. 115,158, dated Jan. 28, 1966.
For Fluid Throttling Valves, Non-Return Throttle Valves, Throttle Check Valves, Flow-Control Valves, Foot-Actuated Valves, Control Valves, Poppet Valves, Roller-Lever Actuated Valves, Exhaust Valves, High Pressure Valves, Pilot-Operated Valves, Power-Actuated Valves, Low Pressure Valves, Nozzles, Fluidic Circuit Control Members, Pressure Transmitters, and Fluid Couplings (Int. Cls. 6, 7, and 11).

SN 277,821. Classique Decorative Hardware Ltd., Hewlett, N.Y. Filed Aug. 8, 1967.

classique

For Hardware of a Decorative Nature—Namely, Doorknobs, Door Knockers, Chain Latches, Cabinet Knobs, and the Like (Int. Cl. 6).
First use May 15, 1967.

SN 288,533. The Paul-Munroe Company, d.b.a. Paul-Munroe Hydraulics, Inc., Pico Rivera, Calif. Filed Jan. 10, 1968.

HYDRA-LOK

For Hydraulic Hoses and Couplings, and Assemblies of Such Hoses and Couplings (Int. Cl. 17).
First use at least as early as Oct. 18, 1966.

SN 299,894. Walker Crosweller and Company Limited, Cheltenham, England. Filed June 6, 1968.

RADA

Priority Claimed under Sec. 44(d) on British Reg. No. 924,477, dated May 2, 1968. Owner of U.S. Reg. No. 557,605.
For Baths, Showers; Cabinets, Cubicles, Screens and Trays for Showers; Shower Fittings, Spray Fittings, Water Mixing Appliances, Water Taps; All Being Parts of or Fittings for Water Supply Installations (Int. Cl. 11).

SN 301,434. Karew, Inc., West Barrington, R.I. Filed June 26, 1968.

REGENT

For Vanity Mirror Trays and Specialized Bath Unit Ensembles Featuring Plate Towel Holders, Soap Dishes, Tissue Holders, Mirrors With and Without Magnifiers, and Tank Top Toilet Trays (Int. Cl. 21).
First use on or about May 28, 1968.

SN 301,561. Vistron Corporation, Cleveland, Ohio. Filed June 27, 1968.

OX

For Plastic Pipe (Int. Cl. 17).
First use prior to Jan. 1, 1957.

SN 304,205. The J. R. Clark Company, d.b.a. Columbian Enameling & Stamping Division and Columbian, Spring Park, Minn. Filed Aug. 2, 1968.

fancipans

For Receptacles Including Sauce Pans, Double Boilers, Casseroles, Tea Kettles, Percolators, Fry Pans, and Chafing Dishes (Int. Cl. 21).
First use July 1, 1968, on sauce pans.

SN 309,136. Bruning Company, Lincoln, Nebr. Filed Oct. 8, 1968.

DECCTO

For Components of Hydraulic Systems, Including Piston and Cylinder Devices, Fittings, Couplings, Quick Disconnect Couplings, and Valves, Including Check and Relief (Int. Cl. 7).
First use in 1956.

Class 14—Metals and Metal Castings and Forgings

SN 302,480. Allied Aluminum Fabricators Company, Richmond, Va. Filed July 11, 1968.

DIAMOND

For Rolls of Aluminous Metal Foil for Consumer Use (Int. Cl. 6).
First use at least as early as Aug. 14, 1964.

Class 15—Oils and Greases

SN 287,895. Chem Cool Company, Maywood, Ill. Filed Jan. 2, 1968.

CHEM COOL

For Water Soluble Compound Used as a Coolant and Lubricant for Industrial Machinery (Int. Cl. 4).
First use Mar. 15, 1966.

SN 296,204. Sinclair Oil Corporation, New York, N.Y., by merger from Sinclair Refining Company, New York, N.Y. Filed Apr. 22, 1968.

NC-7

For Metal Isodecylorthophosphate Sold as an Ingredient Incorporated in Gasoline (Int. Cl. 4).
First use Mar. 18, 1968.

SN 296,553. Miles Associates, Inc., Chicago, Ill. Filed Apr. 25, 1968.

Jack B. Nimble

"Jack B. Nimble" is the name of a fictional character.
For Candles (Int. Cl. 4).
First use November 1965.

SN 296,554. Miles Associates, Inc., Chicago, Ill. Filed Apr. 25, 1968.



Applicant disclaims the representation of the candle and candle stick.
For Candles (Int. Cl. 4).
First use November 1965.

SN 301,465. Strohmeyer & Arpe Company, New York, N.Y. Filed June 26, 1968.



For Mineral, Petroleum, and Montan Waxes (Int. Cl. 4).
First use August 1967.

SN 307,534. Simonix Company, Chicago, Ill. Filed Sept. 17, 1968.

1+1

The drawing is lined for the color orange, but color is not a part of the mark.
For Oil and Gasoline Additives for Automobiles (Int. Cl. 1).
First use Aug. 27, 1968.

Class 16—Protective and Decorative Coatings

SN 298,771. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed May 22, 1968.

ABCITE

For Abrasion-Resistant Plastic Coating Composition for Use in the Industrial Arts (Int. Cl. 2).
First use Apr. 17, 1968.

SN 308,353. Ohio Lime Company, Woodville, Ohio. Filed Sept. 27, 1968.

D-S-C

For Decorative Spray Coating Composition for Effecting Spray textured Surfaces (Int. Cl. 2).
First use Aug. 8, 1968.

Class 18—Medicines and Pharmaceutical Preparations

SN 279,038. American Republic Insurance Company, Des Moines, Iowa. Filed Aug. 25, 1967.

AMERICARE

Owner of Reg. Nos. 800,031 and 838,463.
For Aspirin (Int. Cl. 5).
First use May 9, 1967.

SN 282,132. Ray Drug Company, Inc., Oakland, Calif. Filed Oct. 9, 1967.

PROLEEN

Owner of Reg. No. 632,117.
For Appetite Satients (Int. Cl. 5).
First use Sept. 27, 1967.

SN 294,570. B. F. Ascher & Company, Inc., Kansas City, Mo. Filed Apr. 1, 1968.

ZESTō

For Estrogenic Hormone (Int. Cl. 5).
First use Mar. 13, 1968.

SN 297,847. Corio-Dobbins Laboratories, Phoenix, Ariz. Filed May 10, 1968.

TRIDENE

For Veterinary Liniment (Int. Cl. 5).
First use July 1965.

SN 297,849. Corio-Dobbins Laboratories, Phoenix, Ariz. Filed May 10, 1968.

PLY-HOOF

For Veterinary Ointment for the Treatment of Hoof Conditions (Int. Cl. 5).
First use January 1967.

SN 302,747. Fred Meyer, Inc., Portland, Oreg. Filed July 15, 1968.

WORTHALL

For Medicines and Pharmaceuticals—Namely, Laxatives, Vitamins, Mineral Oils, Saccharin Tablets, Aspirin, Dietary Supplements, and the Like (Int. Cl. 5).
First use Nov. 12, 1958.

SN 302,788. Warren-Teed Pharmaceuticals Incorporated, Columbus, Ohio. Filed July 15, 1968.

KAOCHLOR

For Pharmaceutical Composition for Prevention or Treatment of Hypokalemia (Int. Cl. 5).
First use Apr. 24, 1968.

SN 303,583. Swiss Serum and Vaccine Institute and Institute for the Research of Infectious Diseases, Berne, Switzerland. Filed July 25, 1968.

BERNA

Owner of Swiss Reg. No. 175,161, dated Apr. 29, 1959.
For Pharmaceutical Preparations Including Vaccines, Sera, Antispasmodics, Antitussives, Hemorrhoidal Suppositories, and Mucosal Antiflammatory Preparation (Int. Cl. 5).

SN 304,036. American Home Products Corporation. New York, N.Y. Filed Aug. 1, 1968.

NIGHT NURSE

For Pharmaceutical Preparations for the Relief of Sinus Congestion, Colds and Hay Fever; and a Sedative (Int. Cl. 5).
First use July 17, 1968.

SN 313,658. Ralston Purina Company, St. Louis, Mo. Filed Dec. 5, 1968.

FOAL-PLUS

Owner of Reg. Nos. 754,933, 812,881, and 837,456.
For Vitamin, Trace Mineral, and Antibiotic Feed Concentrate (Int. Cl. 5).
First use December 1968.

Class 19—Vehicles

SN 290,541. Sperry Rand Corporation, New York, N.Y. Filed Feb. 7, 1968.

SPERRY RAND

For Farm Wagons (Int. Cl. 12).
First use Aug. 25, 1967.

SN 290,542. Sperry Rand Corporation, New York, N.Y. Filed Feb. 7, 1968.

SPERRY RAND

For Farm Wagons (Int. Cl. 12).
First use Aug. 25, 1967.

SN 290,543. Sperry Rand Corporation, New York, N.Y. Filed Feb. 7, 1968.

SPERRY RAND

For Farm Wagons (Int. Cl. 12).
First use Aug. 25, 1967.

SN 290,544. Sperry Rand Corporation, New York, N.Y. Filed Feb. 7, 1968.



For Farm Wagons (Int. Cl. 12).
First use Aug. 25, 1967.

SN 302,993. Universal Oil Products Company, d.b.a. UOP Aerotherm Division and UOP Bostrom Division, Des Plaines, Ill. Filed July 17, 1968.



Owner of Reg. No. 845,169.
For Seats, and Parts Thereof, for Aircraft and Land Vehicles (Int. Cl. 12).
First use Apr. 9, 1966.

Class 21—Electrical Apparatus, Machines, Supplies

SN 290,618. Kaz Manufacturing Co., Inc., New York, N.Y. Filed Feb. 8, 1968.

Baby Duo

For Electrical Device Used for Bottle Warming, Food Warming, Humidifying and Vaporizing (Int. Cl. 11).
First use Dec. 1, 1967.

SN 293,640. Orthotron, Longjumeau, France. Filed Mar. 19, 1968.

Flash-FAR

Priority claimed under Sec. 44(d) on French Reg. No. 4,074, dated Dec. 8, 1967.
For High Intensity Short Light Flash Generators (Int. Cl. 9).

SN 309,514. Fortunoff's Shopping Center, Inc., Westbury, N.Y. Filed Oct. 14, 1968.

FORTUNE HOUSE

Owner of Reg. Nos. 816,872 and 816,984.
For Electrical Household Appliances—Namely, Electric Knives, Electric Can Openers and Knife Sharpeners, and Electric Coffee Urns (Int. Cls. 7 and 11).
First use during April 1966.

Class 22—Games, Toys, and Sporting Goods

SN 272,913. The British Bata Shoe Company Limited, East Tilbury, Essex, England. Filed June 2, 1967.

POWER POINTS

Priority claimed under Sec. 44(d) on British Reg. No. B902,431, dated Dec. 2, 1966.
For Football Shoes (Int. Cl. 25).

SN 293,549. Milton Bradley Company, East Longmeadow, Mass. Filed Mar. 18, 1968.

KENT

For Round Jigsaw Puzzles (Int. Cl. 28).
First use Feb. 1, 1968.

SN 307,170. Mattel, Inc., Hawthorne, Calif. Filed Sept. 12, 1968.

LIDDLE KIDDLES

Owner of Reg. No. 814,385.
For Children's Toy Electric Drawing Set (Int. Cl. 28).
First use March 1968.

SN 307,277. Mattel, Inc., Hawthorne, Calif. Filed Sept. 13, 1968.

BABY LIDDLE

No claim of exclusive right is made to "Baby" for the goods recited. Owner of Reg. Nos. 814,385, 818,219, and 818,220.
For Doll, Doll Clothing, and Doll Accessories (Int. Cl. 28).
First use Apr. 1, 1968.

SN 313,656. Mattel, Inc., Hawthorne, Calif. Filed Dec. 5, 1968.

UNI—TRED

For Toy Space Vehicle (Int. Cl. 28).
First use Aug. 30, 1968.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 241,479. A. M. Liaaen A/S, Aalesund, Norway, assignee of A. M. Liaaen, Aalesund, Norway. Filed Mar. 21, 1966.

LIAAEN

Owner of Norwegian Reg. No. 46,048, dated Mar. 25, 1955.
For Controllable Pitch Propeller Gears and Parts Thereof; Bow Thrusters; Ship Propulsion Engines and Motors With Transmission Apparatus (Int. Cl. 7).

SN 285,410. Atkinson's of Clitheroe Limited, Clitheroe, England. Filed Nov. 21, 1967.

ATKO

Owner of British Reg. No. 750,879, dated Feb. 10, 1956.
For Protective Guards for Shaft Couplings for Agricultural and Horticultural Machines (Int. Cl. 7).

SN 289,347. Sperry Rand Corporation, New York, N.Y. Filed Jan. 22, 1968.

SPERRY RAND

For Farm Machinery—Namely, Animal Feeders; Bale Throwers; Balers; Combines; Corn Shellers; Elevators; Fertilizer Distributors; Forage Blowers; Forage Harvesters; Grinder Mixers; Hay Conditioners; Manure Spreaders; Material Choppers; Material Handling Equipment, Namely, Screw, Belt and Endless Chain Conveyors; Mowers; Crop Cutting and Conditioning Machines; Rakes; Silage Distributors; Silo Unloaders; Automatic Farm Bale Wagons; Windrowers; and Swathers (Int. Cl. 7).
First use Aug. 25, 1967.

SN 307,986. Duro Metal Products Co., Chicago, Ill. Filed Sept. 23, 1968.

PATRIOT

For Mechanics' Hand Tools (Int. Cl. 8).
First use Aug. 16, 1968.

SN 308,006. Haskon, Inc., Long Island City, N.Y. Filed Sept. 23, 1968.

PORT-O-MATIC

For Portion Control Machine Used for Filling Small Containers (Int. Cl. 7).
First use Feb. 15, 1968.

SN 308,491. Industrial Tectonics, Inc., Ann Arbor, Mich. Filed Sept. 30, 1968.

KYLOSPHERE

For Spherical Plain and Rod End Bearings (Int. Cl. 7).
First use July 26, 1968.

Class 26—Measuring and Scientific Appliances

SN 273,477. Sherwood Medical Industries Inc., Chicago, Ill., by assignment and change of name from Brunswick Corporation, Chicago, Ill. Filed June 9, 1967.

SPECTROCON

For Digital Converting Instrument—Namely, an Analog Computer With Printer and a Digital Logic Console for Providing Chemical Analyses of Blood and Other Body Fluids by Kinetic or Equilibrium Techniques (Int. Cl. 9).
First use May 18, 1967.

SN 273,478. Sherwood Medical Industries Inc., Chicago, Ill., by assignment and change of name from Brunswick Corporation, Chicago, Ill. Filed June 9, 1967.

DIGECON

For Digital Converting Instrument—Namely, an Analog Computer With Printer and a Digital Logic Console for Providing Chemical Analysis of Blood and Other Body Fluids by Kinetic or Equilibrium Techniques (Int. Cl. 9).
First use May 18, 1967.

SN 276,475. Rolatape Corporation, Santa Monica, Calif. Filed July 20, 1967.

MEASURE METER

For Measuring Wheels (Int. Cl. 9).
First use Nov. 1, 1954.

SN 295,997. Accura Ltd., Flushing, N.Y. Filed Apr. 19, 1968.

DUPLIVAR

For Optical Extension and Slide Holder With Variable Magnification for Duplicating Slides (Int. Cl. 9).
First use Mar. 13, 1966.

SN 296,046. Spiratone, Inc., Flushing, N.Y. Filed Apr. 19, 1968.

UMBRELITE

For Photographic Accessories—Namely, a Reflecting Umbrella Used for Photographic Lighting Purposes (Int. Cl. 9).
First use Mar. 1, 1968.

SN 300,257. Coleman Engineering Company, Inc., Santa Ana, Calif. Filed June 12, 1968.

COLEMASTER

For Numerical Control System for Point to Point Positioning of a Cutting Tool With Respect to X and Y Axes and Simultaneously Positioning the Tool Along the Tool Axis (Int. Cl. 9).
First use June 12, 1967.

SN 300,943. K. J. Law Engineers, Inc., Detroit, Mich. Filed June 20, 1968.

VERIMET

For Electronic Apparatus for Testing Metals for Hardness and Defects (Int. Cl. 9).
First use Nov. 20, 1967.

SN 303,296. Ex-Cell-O Corporation, Detroit, Mich. Filed July 22, 1968.

SUPER-SINE

For Sine Plates (Int. Cl. 9).
First use May 10, 1968.

SN 309,366. Engelhard Minerals & Chemicals Corporation, Newark, N.J. Filed Oct. 10, 1968.

AQUANAL

For Electrical Apparatus for Measuring Moisture Content of Gases (Int. Cl. 9).
First use Oct. 4, 1968.

SN 309,757. Ehrenreich Photo-Optical Industries, Inc., Garden City N.Y. Filed Oct. 16, 1968.

EPOI

Owner of Reg. No. 850,214.
For Optical Inspection and Measuring Equipment—Namely, Compound Microscopes, Measuring Microscopes, Stereoscopic Microscopes, Profile Projectors, Illuminators for the Above, Cross Travelling Micrometer Stages, and Linear Motion Devices; and Cameras (Int. Cl. 9).
First use July 11, 1963 on cameras.

SN 310,996. American Optical Corporation, Southbridge, Mass. Filed Oct. 31, 1968.

SUPER "S"

For Optical Lenses (Int. Cl. 9).
First use June 1968.

SN 311,127. GAF Corporation, New York, N.Y. Filed Nov. 1,1968.

SL

For Printing and Developing Machines Used in the Printing and Development of Light-Sensitive Diazotype Materials, and Parts Thereof (Int. Cl. 9).
First use Aug. 9, 1968.

SN 311,914. Originalities of New York, Inc., New York, N.Y. Filed Nov. 12, 1968.

COLOR MATES

For Sun Glasses (Int. Cl. 9).
First use Oct. 28, 1968.

SN 312,290. International Paper Company, New York, N.Y. Filed Nov. 15, 1968.

BRITEL

For Tester for Measuring the Brightness of Pulp (Int. Cl. 9).
First use Apr. 25, 1968.

SN 312,591. Lee Hunter, d.b.a. Hunter Engineering Company,Bridgeton, Mo. Filed Nov. 19, 1968.

COMPUTE-A-LINE

For Apparatus for Determining the Wheel Alignment Characteristics of Automotive Vehicles (Int. Cl. 9).
First use Sept. 20, 1968.

SN 315,291. Becton, Dickinson and Company, East Rutherford, N.J. Filed Dec. 27, 1968.

UNORAK

For Tray Adapted To Hold Laboratory Equipment (Int. Cl. 9).
First use on or about Oct. 18, 1968.

SN 317,685. John Harris Jones, d.b.a. Bellwood Laboratories, Bellwood, Ill. Filed Jan. 28, 1969.

VISICART

For Viscosimeters (Int. Cl. 9).
First use Oct. 25, 1961.

Class 28 — Jewelry and Precious-Metal Ware

SN 293,874. Abraham Zacroisky & Sons, Inc., Miami, Fla. Filed Mar. 21, 1968.



For Jewelry (Int. Cl. 14).
First use Jan. 2, 1963.

Class 32 — Furniture and Upholstery

SN 52,853. J. H. Benecke Beteiligungsgesellschaft mit beschrankter Haftung & Co. KG., Hannover-Vinnhorst, Germany, by change of name from J. H. Benecke, Hannover-Vinnhorst, Germany. Filed June 4, 1958.

AMERACELLA

Owner of German Reg. No. 681,628, dated Sept. 14, 1955.
For Venetian Blinds and Slats Therefor; Cushions; Pillows; Mattresses; Window Shades; Plastic Sheeting or Sheet Material Coated With Plastics, Made Into Cushions, Pillows, Pads, Mattress Covers, Nursery Seats, Wall Decorations, Wall Coverings, Window Shades, and Seats and Backs for Chairs (Int. Cls. 17 and 20).

SN 279,645. Habitat, Inc., New York, N.Y. Filed Sept. 5, 1967.

HABITAT

Owner of Reg. Nos. 538,548 and 672,232.
For Seating Units, Tables, Cabinets, and Umbrella Stands; Wall and Floor Urns, and Floor Urns Functioning as Combination Ashtrays and Waste Receptacles (Int. Cl. 20).
First use on or about Aug. 22, 1967.

SN 303,531. Robert John Co., Philadelphia, Pa. Filed July 24, 1968.

PHASE-I

For Desks, Credenzas, Files, Tables, Chairs, Library Furniture, Chests, Bed Ends, Combination Wardrobe Closets, Wall Panels, Shelving, and Cabinets (Int. Cl. 20).
First use June 28, 1968.

SN 316,859. Bedding Manufacturers Associates, Inc., Philadelphia, Pa. Filed Jan. 17, 1969.

WORLD'S GREATEST SLEEPING PILL

Owner of Reg. No. 781,159.
For Mattresses, Upholstered Chairs, and Sofa Beds (Int. Cl. 20).
First use February 1962.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 307,446. Elster's, Hollywood, Calif. Filed Sept. 16, 1968.

ELTEC

For Ventilating Units and Parts and Controls Therefor (Int. Cl. 11).
First use Aug. 18, 1967.

SN 308,324. A. O. Smith Corporation, Milwaukee, Wis. Filed Sept. 26, 1968.

CAPSEL

For Water Heaters (Int. Cl. 11).
First use July 12, 1968.

SN 308,631. Quiet Automatic Water Heater Corp., Montclair, N.J. Filed Oct. 1, 1968.

AQUOMATIC

For Swimming Pool Heaters (Int. Cl. 11).
First use February 1960.

SN 309,592. Lewbill Industries, Inc., Scottdale, Pa. Filed Oct. 14, 1968.

MISTRONIC

For Humidifiers (Int. Cl. 11).
First use Sept. 3, 1968.

SN 316,950. The Torrington Manufacturing Company, Torrington, Conn. Filed Jan. 21, 1969.

TORIN

For Devices for Propelling Air and Other Gases, and Components for Such Devices—Namely, Centrifugal Fans, Axial Flow Fans, Transverse Flow Fans and Impellers, Housings and Other Parts for Such Fans; and Welding Machines (Int. Cls. 7 and 11).
First use on or about Jan. 14, 1969.

SN 317,492. Escoa Fintube Corporation, Pryor, Okla. Filed Jan. 27, 1969.

ESCOA

For Finned Tubes for Use in Heat Exchangers (Int. Cl. 11).
First use at least as early as Aug. 15, 1968.

SN 317,493. Escoa Fintube Corporation, Pryor, Okla. Filed Jan. 27, 1969.

TURB-X

For Finned Tubes for Use in Heat Exchangers (Int. Cl. 11).
First use at least as early as Aug. 15, 1968.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 286,445. J. C. Penney Company, Inc., New York, N.Y. Filed Dec. 7, 1967.

AF/x

For Drag Tires (Int. Cl. 12).
First use Oct. 5, 1967.

SN 310,457. Greene, Tweed & Co., Inc., North Wales, Pa. Filed Oct. 24, 1968.

SHU

For Packing Ring for Hydraulic and Pneumatic Machinery (Int. Cl. 17).
First use at least as early as June 25, 1962.

SN 310,834. Asten-Hill Mfg. Company, Philadelphia, Pa. Filed Oct. 30, 1968.

VENTMESH

For Dryer Belts in the Piece (Int. Cl. 7).
First use Oct. 22, 1968.

SN 312,219. Pirelli, S.p.A., Milan, Italy. Filed Nov. 14, 1968.

ISORAN

Owner of Italian Reg. No. 302,543, dated Mar. 23, 1967.
For Driving Belts and Conveyor Belts (Int. Cl. 7).

SN 312,220. Pirelli, S.p.A., Milan, Italy. Filed Nov. 14, 1968.

ISORAN

Owner of Italian Reg. No. 190,240, dated Dec. 13, 1966.
For Driving Belts and Conveyor Belts (Int. Cl. 7).

SN 312,447. The Firestone Tire & Rubber Company, Akron, Ohio. Filed Nov. 18, 1968.

LXX

For Resilient Vehicle Tires (Int. Cl. 12).
First use Oct. 30, 1968.

SN 312,459. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed Nov. 18, 1968.

BAJA SPECIAL

For Tires (Int. Cl. 12).
First use Oct. 15, 1968.

SN 312,461. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed Nov. 18, 1968.

BAJA BOOTS

For Tires (Int. Cl. 12).
First use Oct. 11, 1968.

SN 312,506. Standard Oil Company of California, San Francisco, Calif. Filed Nov. 18, 1968.

CHEVRON

For Automobile Tires (Int. Cl. 12).
First use June 4, 1968.

SN 312,507. Standard Oil Company of California, San Francisco, Calif. Filed Nov. 18, 1968.



For Automobile Tires (Int. Cl. 12).
First use June 4, 1968.

SN 313,093. Harry H. Fine Associates, Inc., Long Island City, N.Y. Filed Nov. 26, 1968.



For Gaskets (Int. Cl. 17).
First use November 1967.

SN 313,170. Garlock Inc., Palmyra, N.Y. Filed Nov. 27, 1968.

HYDRODYNE

For Oil Seals (Int. Cl. 17).
First use on or before Sept. 11, 1968.

SN 313,287. The B. F. Goodrich Company, Akron, Ohio. Filed Nov. 29, 1968.

"400"

For Pneumatic Tires (Int. Cl. 12).
First use May 15, 1939.

SN 316,276. Universal American Corporation, New York, N.Y. Filed Jan. 10, 1969.

NORMALON

For Bearing Seals (Int. Cl. 7).
First use Dec. 19, 1968.

Class 36 — Musical Instruments and Supplies

SN 262,210. Sony Corporation, Tokyo, Japan. Filed Jan. 9, 1967.

MAGAZINE MATIC

For Tape Recorders (Int. Cl. 9).
First use about Nov. 23, 1966; in commerce about Nov. 23, 1966.

SN 305,698. Vance Music Corporation, Hollywood, Calif. Filed Aug. 21, 1968.

VMC

For Phonograph Records (Int. Cl. 9).
First use January 1968.

SN 305,699. Vance Music Corporation, Hollywood, Calif. Filed Aug. 21, 1968.

VMC

For Phonograph Records (Int. Cl. 9).
First use January 1968.

SN 308,776. The Estey Musical Instrument Corporation, Harmony, Pa. Filed Oct. 3, 1968.

MAGNATONE

Owner of Reg. No. 747,636.
For Musical Instruments—Namely, Guitars and Basses (Int. Cl. 15).
First use 1945.

SN 309,458. Karma, Inc., Dallas, Tex. Filed Oct. 11, 1968.

KARMA

For Phonograph Records and Pre-Recorded Magnetic Tape (Int. Cl. 9).
First use at least as early as May 21, 1968.

SN 311,777. Edgar E. Dopera, Gardena, Calif. Filed Nov. 12, 1968.



For Stringed Musical Instruments, Specifically Guitars (Int. Cl. 15).
First use during October 1967.

Class 37—Paper and Stationery

SN 282,019. Zanders Feinpapiere G.m.b.H., Bergisch Gladbach, Germany. Filed Oct. 6, 1967.



Owner of U.S. Reg. Nos. 616,856 and 616,857.
For Parchment-Like Paper and Paperboards for Bookbinding Purposes (Int. Cl. 16).
First use in 1958; in commerce in 1965.

SN 288,756. Aaabar Enterprises, Inc., Glan Allen, Va. Filed Jan. 15, 1968.

AAABAR

For Blank or Partially Printed Business Forms (Int. Cl. 16).
First use 1958.

SN 289,302. Hammermill Paper Company, Erie, Pa. Filed Jan. 22, 1968.

WATERVLIET

For Paper for Writing, Printing, and Duplicating (Int. Cl. 16).
First use approximately 1910.

SN 295,062. Sperry Rand Corporation, New York, N.Y. Filed Apr. 5, 1968.

SUIAP

For Accounts Receivable Forms (Int. Cl. 16).
First use in or about June 1945.

SN 295,776. Sperry Rand Corporation, New York, N.Y. Filed Apr. 16, 1968.

ADD-A-LINE

For Index Strips (Int. Cl. 16).
First use May 4, 1949.

SN 305,840. Mastercraft Pen Company, Inc., Monterey, Calif. Filed Aug. 23, 1968.

MASTERCRAFT

For Pens (Int. Cl. 16).
First use May 31, 1955.

SN 307,028. Hudson Pen Corp., Pelham, N.Y. Filed Sept. 10, 1968.

SARATOGA

For Pencils (Int. Cl. 16).
First use Sept. 4, 1968.

SN 309,154. Allen Hollander Co., Inc., Bronx, N.Y. Filed Oct. 8, 1968.

LAMI-LOK

For Labels, Tags, Including Multi-Web, Pin-Feed, Adhesive Backed Labels (Int. Cl. 16).
First use Aug. 15, 1968.

SN 309,573. Hammermill Paper Company, Erie, Pa. Filed Oct. 14, 1968.

WORONOCO

For All Kinds of Fine Writing Paper (Int. Cl. 16).
First use Jan. 21, 1879.

SN 309,579. Hammermill Paper Company, Erie, Pa. Filed Oct. 14, 1968.

FAIRFIELD

For All Kinds of Writing and Printing Paper (Int. Cl. 16).
First use in or about January 1890.

SN 309,581. Hammermill Paper Company, Erie, Pa. Filed Oct. 14, 1968.

RHODODENDRON

For Writing, Drawing, and Book Paper, Paper for Covers of Pamphlets and Catalogues, and Cardboard (Int. Cl. 16).
First use in or about January 1900.

SN 309,595. The Lynn Pacific Corporation, Union City, Calif. Filed Oct. 14, 1968.



For Theme Books (Int. Cl. 16).
First use Aug. 30, 1968.

SN 309,846. Cory Corporation, Chicago, Ill. Filed Oct. 17, 1968.

DAISIES

For Writing Instruments—Namely, Pens (Int. Cl. 16).
First use Sept. 26, 1968.

SN 310,552. A. W. Faber-Castell Pencil Co., Inc., Newark, N.J. Filed Oct. 25, 1968.

Q-STIK

Owner of Reg. Nos. 595,540, 820,762, and others.
For Ball Point Pens and Pencils (Int. Cl. 16).
First use Apr. 3, 1968.

SN 310,901. Lawrence Packaging Supply Corp., Newark, N.J. Filed Oct. 30, 1968.

PRES-QUICK

For Pressure Sensitive Packing List Envelopes (Int. Cl. 16).
First use Sept. 11, 1968.

SN 312,599. Moore Business Forms, Inc., Niagara Falls, N.Y. Filed Nov. 19, 1968.

MOORE METERLOPE

For Business Forms (Int. Cl. 16).
First use Oct. 25, 1968.

SN 316,383. Kimberly-Clark Corporation, Neenah, Wis. Filed Jan. 13, 1969.

KLEENEX BOUTIQUE

For Paper Table Napkins (Int. Cl. 16).
First use Nov. 6, 1968.

Class 38 — Prints and Publications

SN 281,113. Press-Tech, Inc., Evanston, Ill. Filed Sept. 25, 1967.

SOFTWARE AGE

For Magazine (Int. Cl. 16).
First use Sept. 14, 1967.

SN 287,284. Ralph A. Des Roches, New York, N.Y. Filed Dec. 20, 1967.

AT THE FINISH LINE

For Newsletter Dealing With Methods of Advertising (Int. Cl. 16).
First use Oct. 1, 1967.

SN 290,728. Eastman Kodak Company, Rochester, N.Y. Filed Feb. 9, 1968.

LINE-O-GRAPH

For Industrial Newsletter (Int. Cl. 16).
First use June 19, 1967.

SN 291,358. Controlled Brands Food Institute, Inc., Chicago, Ill. Filed Feb. 19, 1968.

BEST OF TASTE

For Recipe Sheets, Binders for Recipe Sheets, and Materials for a Recipe Promotion Program—Namely, Film Strips and Slides, Radio and Television Scripts, Newspaper Copy, Procedure Manuals, Bulletins, In-Store Display Cards, Signs and Banners, Holders and Racks Containing Recipes, Binders and Printed Promotional Materials (Int. Cls. 9 and 16).
First use Jan. 2, 1968.

SN 294,572. Bank of America National Trust and Savings Association, San Francisco, Calif. Filed Apr. 1, 1968.

BANK OF AMERICA

Owner of Reg. Nos. 523,612, 583,738, and 853,860.
For Informational Booklets, Newsletters, Business Reports, Directories, Commercial Guides, and Computer Programs (Int. Cl. 16).
First use during 1928.

SN 294,639. Michigan International Speedway, Inc., Detroit, Mich. Filed Apr. 1, 1968.

THE INSIDE TRACK

For House Organ Comprising a Periodical Information Sheet for Company Shareholders (Int. Cl. 16).
First use Feb. 22, 1968.

SN 299,548. Vera Louise Drysdale, San Pedro, Calif. Filed June 3, 1968.

ORIGINAL AMERICANS

by
VERA LOUISE DRYSDALE

For Note Cards Decorated With Printed Sketches (Int. Cl. 16).
First use Oct. 1, 1967.

SN 301,035. Business Press International, Inc., Elmhurst, Ill. Filed June 21, 1968.

OFFICE AUTOMATION

Owner of Reg. Nos. 661,183, 792,960, and others.
For Looseleaf Books Relating to Office Equipment and Periodically Issued Supplement Sheets Therefor (Int. Cl. 16).
First use Oct. 1, 1955.

SN 302,588. Business Press International, Inc., Elmhurst, Ill. Filed July 12, 1968.

OFFICE DESIGN

Owner of Reg. Nos. 435,583, 661,183, and 744,573.
For Trade Magazine Published Bi-Monthly (Int. Cl. 16).
First use May 5, 1961.

SN 306,231. Editorial America, S.A., Panama, Panama. Filed Aug. 29, 1968.

SELENE

For Magazine in the Spanish Language Containing Illustrated and Nonillustrated Stories (Int. Cl. 16).
First use June 10, 1968; in commerce June 10, 1968.

SN 309,253. Gibson Greeting Cards, Inc., Cincinnati, Ohio. Filed Oct. 9, 1968.



For Greeting Cards (Int. Cl. 16).
First use February 1967.

SN 309,616. Pivot Point International, Inc., Chicago, Ill. Filed Oct. 14, 1968.

PIVOT POINT

For Books, Film strips, and Transparencies (Int. Cls. 9 and 16).
First use February 1965.

SN 309,720. National Periodical Publications, Inc., New York, N.Y. Filed Oct. 16, 1968.

BAT LASH

For Comic Magazines (Int. Cl. 16).
First use Aug. 15, 1968.

SN 310,187. The Frostie Company, Camden, N.J. Filed Oct. 22, 1968.

FROSTIE FEATURES

For Magazine (Int. Cl. 16).
First use at least as early as March 1963.

SN 314,588. McClatchy Newspapers, Sacramento, Calif. Filed Dec. 16, 1968.

Valley Leisure

Owner of Reg. No. 716,500.
For Newspaper Magazine Supplement (Int. Cl. 16).
First use Jan. 4, 1958.

SN 316,502. Pace, Inc., Silver Spring, Md. Filed Jan. 14, 1969.



For Text Books in the Nature of Instruction Manuals and Training Literature Relating to Operating and Maintenance of Shop Equipment (Int. Cl. 16).
First use in or about October 1967; 1964 as to "Pace."

Class 39 — Clothing

SN 275,443. Intercontinent Shoe Corporation, New York, N.Y. Filed July 6, 1967.

EUROPA GUILD

For Footwear (Int. Cl. 25).
First use Mar. 20, 1967.

SN 295,580. York Feather & Down Corp., Brooklyn, N.Y. Filed Apr. 12, 1968.

YORK

For Down Made Up Into Men's Women's and Children's Cold Weather Coats and Ski Parkas (Int. Cl. 25).
First use as early as 1950.

SN 296,817. Glenn-Penn, Amarillo, Tex. Filed Apr. 23, 1968.



Applicant disclaims the words "Amarillo Texas" apart from the mark as shown.
For Hospital Gowns (Int. Cl. 25).
First use on or before Sept. 7, 1967.

SN 296,828. Marty Gutmacher, Inc., New York, N.Y. Filed Apr. 29, 1968.

JUNIOR TRENDS

For Dresses (Int. Cl. 25).
First use Feb. 28, 1968.

SN 298,085. Butterworth Industries, Inc., Marion, Ind. Filed May 14, 1968.

BESTO'S

For Aprons, Bibs, Smocks, Gowns, Coveralls, Overalls, Shirts, Jackets, and Pants (Int. Cl. 25).
First use Apr. 15, 1968.

SN 299,217. Carnival Creations, Inc., New York, N.Y. Filed May 28, 1968.

PRETTY SOFT

For Brassieres (Int. Cl. 25).
First use Apr. 25, 1968.

SN 300,422. Coast Empire, Inc., Charlotte, N.C. Filed June 14, 1968.

FAMILY LOOM

Owner of Reg. No. 737,950.
For Boys' T-Shirts, Underwear, and Diapers (Int. Cl. 25).
First use 1961 on diapers.

SN 301,916. Corona Corset Corporation, Corona, N.Y. Filed S.R. July 3, 1968; Am. P.R. Jan. 9, 1969.

DUOphram Control

The word "Control" is disclaimed apart from the mark as a whole.
For Ladies' and Misses' Brassieres, Girdles, Corselettes, and Garter Belts (Int. Cl. 25).
First use May 3, 1965.

SN 302,939. Robert Hall Clothes, Inc., d.b.a. Robert Hall Clothes, New York, N.Y. Filed July 17, 1968.

Flambeau

The word "Flambeau" is a French word meaning "torch," "flame" or "candlestick." Owner of Reg. No. 269,970.
For Coats (Int. Cl. 25).
First use on or about Sept. 1, 1964.

SN 304,686. Goldfisch Textilien Gesellschaft m.b.H., Neuburg (Danube), Germany. Filed Aug. 8, 1968.

GOLDFISCH

Owner of German Reg. No. 549,750, dated Oct. 3, 1942.
For Beach Wear Including Swimming Suits (Int. Cl. 25).

SN 306,662. Glamorize Foundations, Inc., New York, N.Y. Filed Sept. 6, 1968.

CORSETRY BY LENI

The word "Corsetry" is disclaimed apart from the mark as shown.
For Foundation Garments (Int. Cl. 25).
First use July 1, 1968.

SN 308,673. Barrow Manufacturing Company, Winder, Ga. Filed Oct. 2, 1968.

EASY-TIMERS

For Men's and Boys' Slacks (Int. Cl. 25).
First use Sept. 27, 1968.

SN 309,047. Honeybee, Inc., St. Joseph, Mo. Filed Oct. 7, 1968.

HONEYBEE

For Ladies' and Misses' Sweaters, Swimsuits, Dresses, Blouses, Skirts, Belts, Shirts, and Shifts (Int. Cl. 25).
First use Nov. 25, 1964.

SN 309,086. Pierce Shoe Manufacturing Company, Inc., d.b.a. S. C. Spatola Footwear, Waycross, Ga. Filed Oct. 7, 1968.

MIRABELLA Continental

Owner of Reg. No. 750,607.
For Shoes (Int. Cl. 25).
First use Sept. 25, 1968; at least as early as June 1, 1962 as to "Mirabella."

SN 309,193. L. Uman, Inc., East Meadow, N.Y. Filed Oct. 8, 1968.

TRIM TOWN

For Ladies' and Girls' Dresses, Coats, Slips, Pajamas; and Ladies' and Girls' Sportswear—Namely, Pants, Skirts, Swimsuits, and Blouses (Int. Cl. 25).

SN 309,290. Pinehurst Hat Corporation, New York, N.Y. Filed Oct. 9, 1968.

PINEHURST

Owner of Reg. No. 246,581.
For Ladies Hats (Int. Cl. 25).
First use November 1927.

SN 309,391. Kittycal, Inc., Jacksonville, Fla. Filed Oct. 10, 1968.

PONCHETTE

For Knitted Ponchos (Int. Cl. 25).
First use July 15, 1968.

SN 310,101. Joseph M. Herman Shoe Co., Millis, Mass. Filed Oct. 21, 1968.

Tech 50

For Boots and Shoes for Men (Int. Cl. 25).
First use Sept. 24, 1968.

SN 313,491. Carmen Foundations, Inc., Chicago, Ill. Filed Dec. 3, 1968.

AIMEE

For Ladies' and Girls' Foundation Garments and Lingerie—Namely, Brassieres, Girdles, and Slips (Int. Cl. 25).
First use Nov. 22, 1968.

SN 314,767. Malcolm Starr, Inc., New York, N.Y. Filed Dec. 18, 1968.

MALCOLM STARR

For Ladies' Dresses, Gowns, and Lounge Wear (Int. Cl. 25).
First use 1966.

SN 314,899. Munsingwear, Inc., Minneapolis, Minn. Filed Dec. 19, 1968.

GRAND-SLAM

Owner of Reg. No. 629,148.
For Slacks, Walking Shorts, and Jackets (Int. Cl. 25).
First use Nov. 27, 1968.

SN 315,182. The Lovable Company, Atlanta, Ga. Filed Dec. 26, 1968.

PURE POETRY

For Women's Foundation Garments (Int. Cl. 25).
First use Nov. 27, 1968.

Class 40—Fancy Goods, Furnishings, and Notions

SN 270,669. Franklin Ming Dong Tsu, d.b.a. R & D Products Company, Kowloon, Hong Kong. Filed May 4, 1967.

PANDORA
WIGFALL



The word "Wigfall" is disclaimed apart from the mark as shown. The representation of the woman's face is fanciful and not that of a living individual.
For Human Hair Wigs, Wiglets, Postiche and Hair Pieces (Int. Cl. 26).
First use November 1966; in commerce November 1966.
Subj. to Intf. with SN 294,204.

SN 294,204. Paragon Hair Goods Ltd., New York, N.Y. Filed Mar. 26, 1968.

PANDORA

For Wigs, Falls, and Wiglets (Int. Cl. 26).
First use Jan. 3, 1967.
Subj. to Intf. with SN 270,669.

SN 294,530. La Jose Beauty Products Corp., Rocky River, Ohio, assignee of Joseph T. Sestito, Cleveland, Ohio. Filed Mar. 29, 1968.

LA JOSE HI-LITER

For Hair Dressing Comb (Int. Cl. 21).
First use Mar. 12, 1968.

SN 300,764. V.I.P. International Scientific Corp., New York, N.Y. Filed June 18, 1968.

ULTRA-LOK

For Toupees and Hairpieces (Int. Cl. 26).
First use June 4, 1968.

SN 302,440. Nylrem Enterprises, Inc., Spencer, Iowa. Filed July 10, 1968.

DUA-LIFT

For Nonelectrical, Multipronged Hand Tool With Tail for Styling Hair (Int. Cl. 8).
First use Sept. 28, 1966.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 52,852. J. H. Benecke Beteiligungsgesellschaft mit beschrankter Haftung & Co. KG., Hannover-Vinnhorst, Germany, by change of name from J. H. Benecke, Hannover-Vinnhorst, Germany. Filed June 4, 1958.

AMERACELLA

Owner of German Reg. No. 681,628, dated Sept. 14, 1955.
For Plastic Sheeting, With or Without a Fabric Backing, for Making Curtains, Raincoats, Table Cloth, Upholstery, Wall Covering, and the Like (Int. Cl. 17).

SN 241,780. I. & S. Bedspread Company, Inc., Brooklyn, N.Y. Filed Mar. 24, 1966.



Applicant makes no claim to the word "Decorative" or the word "Modes" apart from the mark shown, reserving, however, all other rights in/or to the same.
For Fabrics for Draperies, Valances, and Bedspreads (Int. Cl. 24).
First use Feb. 7, 1966.

SN 283,831. United Merchants and Manufacturers, Inc., New York, N.Y. Filed Oct. 31, 1967.

FORT SPOTLESS

Owner of Reg. No. 583,985.
For Textile Finish With Which the Applicant Has Pre-Treated Its Cotton and Synthetic Fabrics To Render Them Stain and Soil Resistant (Int. Cl. 24).
First use on or about Oct. 9, 1967.

SN 286,331. Enterprise Incorporated, Dallas, Tex. Filed Dec. 6, 1967.

VEEV

For Knitted Fabrics for Making Draperies, Upholstery, Slip Covers, and the Like (Int. Cl. 24).
First use Oct. 1, 1967.

SN 291,479. Armstrong Cork Company, Lancaster, Pa. Filed Feb. 20, 1968.

LANCASTER LINE

For Textile Carpets and Rugs (Int. Cl. 27).
First use Feb. 9, 1968.

SN 300,423. Coast Empire, Inc., Charlotte, N.C. Filed June 14, 1968.

FAMILY LOOM

Owner of Reg. No. 737,950.
For Receiving Blankets, Fabrics in Pre-Cut Lengths for Home Sewing, Dish Towels, and Fitted Crib Sheets (Int. Cl. 24).
First use March 1961 on receiving blankets.

SN 300,743. Reid & Taylor Limited, Langholm, Scotland. Filed June 18, 1968.



The term "Scotland" is disclaimed apart from the mark as shown. Owner of British Reg. No. 757,744, dated Sept. 19, 1956.
For Textile Piece Goods for Making Into Suits, Coats, Skirts, Dresses, and the Like (Int. Cl. 24).

SN 301,369. Stitchcraft Corporation, Forest City, Iowa. Filed June 25, 1968.

STITCHCRAFT

Owner of Reg. No. 860,550.
For Draperies, Curtains, Furniture Seat Covers and Theatre Seat Upholstery Fabrics (Int. Cl. 24).
First use May 1, 1962.

SN 304,270. Viking Carpets, Inc., New York, N.Y. Filed Aug. 2, 1968.

HIDDEN VALLEY

For Carpets and Rugs (Int. Cl. 27).
First use Feb. 6, 1967.

SN 304,328. Fieldcrest Mills, Inc., Eden, N.C. Filed Aug. 5, 1968.

meroe

For Textile Rugs and Carpeting (Int. Cl. 27).
First use June 28, 1968.

SN 304,757. Charles Bloom, Inc., New York, N.Y. Filed Aug. 9, 1968.

CONTERA

For Curtains and Upholstery Material (Int. Cl. 24).
First use July 15, 1968.

SN 305,210. Dan River Mills, Incorporated. Danville, Va. Filed Aug. 15, 1968.

DANTREL

Owner of Reg. No. 833, 744.
For Textile Fabrics in the Piece of Cotton or Synthetic Fibers or Any Combinations Thereof, Sheets, Sheeting, and Pillowcases (Int. Cl. 24).
First use Feb. 1, 1965, on textile fabrics.

SN 305,239. Pellon Corporation, New York, N.Y. Filed Aug. 15, 1968.

SOF-SHAPE

For Non-Woven Textile Fabrics in the Piece (Int. Cl. 24).
First use Jan. 9, 1968.

SN 305,549. Johnson & Johnson, New Brunswick, N.J. Filed Aug. 20, 1968.



For Non-Woven Fabrics (Int. Cl. 24).
First use Apr. 21, 1961.

SN 305,862. West Point-Pepperell, Inc., West Point, Ga. Filed Aug. 23, 1968.

MANUCHO

For Piece Goods of All Cotton, a Blend of Cotton and Synthetics, or an All Synthetic Fabric (Int. Cl. 24).
First use Mar. 18, 1968.

SN 305,863. West Point-Pepperell, Inc., West Point, Ga. Filed Aug. 23, 1968.

SATAN

For Piece Goods of All Cotton, a Blend of Cotton and Synthetics, or an All Synthetic Fabric (Int. Cl. 24).
First use Dec. 21, 1967.

SN 306,150. International Stretch Products, Inc., New York, N.Y. Filed Aug. 28, 1968.

DURRA-LASTIC

For Woven Elastic (Int. Cl. 24).
First use May 23, 1968.

SN 306,213. Austin Lee Corp., Fort Valley, Ga. Filed Aug. 29, 1968.

POLY PUFF

For Bedspreads (Int. Cl. 24).
First use May 3, 1968.

SN 306,278. Shellbuilder Company, Houston, Tex. Filed Aug. 29, 1968.

SHELL-TARP

For Reinforced Fabric for Protective Purposes (Int. Cl. 24).
First use Apr. 17, 1968.

SN 306,363. Fieldcrest Mills, Inc., Eden, N.C. Filed Aug. 30, 1968.

Celeste

For Textile Rugs and Carpeting (Int. Cl. 27).
Filed Nov. 14, 1962.

SN 311,101. George C. Moore Company, Westerly, R.I. Filed Nov. 1, 1968.

NET CETERA

Applicant disclaims exclusive rights to the word "Net" apart from the mark as shown.
For Knit Elastic Fabric (Int. Cl. 24).
First use Oct. 23, 1968.

SN 312,090. E. T. Barwick Industries, Inc., Chamblee, Ga. Filed Nov. 14, 1968.

RAVENNA

For Carpets (Int. Cl. 27).
First use May 27, 1965.
Subj. to Intf. with SN 294,492.

SN 312,111. E. T. Barwick Industries, Inc., Chamblee, Ga. Filed Nov. 14, 1968.

MILANO

For Carpets (Int. Cl. 27).
First use June 11, 1963.

Class 43 — Thread and Yarn

SN 305,111. Emile Bernat & Sons Co., Uxbridge, Mass. Filed Aug. 14, 1968.

Loch•spun

For Hand-Knitting Yarn (Int. Cl. 23).
First use at least as early as July 30, 1968.

SN 305,693. J. P. Stevens & Co., Inc., New York, N.Y. Filed Aug. 21, 1968.

BULKEL

For Yarn Composed of Natural or Synthetic Fibers or Blends of the Foregoing (Int. Cl. 23).
First use Aug. 8, 1968.

Class 44 — Dental, Medical, and Surgical Appliances

SN 286,935. James Charles How, d.b.a. J. C. How & Co., Sidcup, Kent, England. Filed Dec. 14, 1967.

SELFLEX

Owner of British Reg. Nos. 898,965, dated Sept. 2, 1966, and 912,611, dated July 28, 1967.
For Surgical Instruments, Equipment and Devices—Namely, Wires, Valves, Pumps, and Associated Adaptors (Int. Cl. 10).

SN 301,753. Margaret Marquis, d.b.a. Marquis Dental Mfg. Co., Denver, Colo. Filed July 1, 1968.

PERIO-AID

For Toothpick Holder Facilitating Oral Hygiene (Int. Cl. 21).
First use Nov. 24, 1959.

SN 306,732. Marcel Franck S.A., Paris, France. Filed Sept. 6, 1968.

MARCEL FRANCK

"Marcel Franck" is the name of the founder and president of applicant. Owner of U.S. Reg. No. 263,560.
For Atomizers (Int. Cl. 10).
First use at least as early as 1918; in commerce at least as early as 1918.

SN 315,352. Chesebrough-Pond's Inc., New York, N.Y. Filed Dec. 30, 1968.

ESTEEM

For Sanitary Napkins (Int. Cl. 5).
First use Dec. 13, 1968.

SN 315,363. PDC, Inc., South Boston, Mass. Filed Dec. 30, 1968.

MEDI-SHACK

For Elastic Bandages, Medicine Cups, Surgical Pads, Syringes, Surgical Needles, Gauze Sponges, Dressings, Combination Dressings, Plastic Emesis Basins, Bed Pans, and Urinals (Int. Cls. 5 and 10).
First use at least as early as about May 1967.

Class 45 — Soft Drinks and Carbonated Waters

SN 302,203. Super Food Services, Inc., Chicago, Ill. Filed July 8, 1968.

TABLE KING

Owner of Reg. Nos. 653,842, 854,739, and 858,358.
For Soft Drinks—Namely, Fruit Drinks Containing Water (Int. Cl. 32).
First use on or about July 31, 1963.

SN 308,348. General Mills, Inc., Minneapolis, Minn. Filed Sept. 27, 1968.

FROSTAIL

Owner of Reg. Nos. 699,933 and 837,600.
For Soft Drink Concentrate (Int. Cl. 32).
First use on or prior to July 24, 1968.

SN 308,349. General Mills, Inc., Minneapolis, Minn. Filed Sept. 27, 1968.

NORTH WIND

For Soft Drink Concentrate (Int. Cl. 32).
First use on or prior to Aug. 26, 1968.

Class 46 — Foods and Ingredients of Foods

SN 263,155. General Mills, Inc., Minneapolis, Minn. Filed Jan. 24, 1967.

Sparkle

Owner of Reg. No. 658,877.
For Fluid Milk (Int. Cl. 29).
First use at least as early as July 6, 1959.

SN 274,624. Hickory Plantation Foods Co., Inc., Nashville, Tenn. Filed June 23, 1967.

HICKORY PLANTATION

For Pre-Cooked Frozen and Unfrozen Pork Barbecue, Barbecue Sauce, Seasoned Flour for Frying Chicken, and Pancake and Waffle Syrup (Int. Cls. 29 and 30).
First use Jan. 22, 1965.

SN 278,231. O.J.M. Co., Denver, Colo. Filed Aug. 14, 1967.

STUFF'nTHiNGS

For Snack Appetizers Made From Puffed and Cooked Cornmeal (Int. Cl. 30).
First use on or about June 20, 1967.

SN 280,215. The Dan Dee Pretzel and Potato Chip Company, Cleveland, Ohio. Filed Sept. 13, 1967.

DAN DEE PRETZELS

Applicant disclaims the word "Pretzels" and the representation thereof, apart from the mark as shown. Owner of Reg. Nos. 261,450 and 644,511.
For Pretzels (Int. Cl. 30).
First use in or about August 1927.

SN 280,929. Burger Farms of America, Inc., Evansville, Ind. Filed Sept. 22, 1967.

SIR BEEF, LTD.

Applicant disclaims the word "Beef" apart from the mark as shown.
For Beef Sandwich (Int. Cl. 29).
First use Aug. 18, 1967.

SN 282,607. North Pacific Canners & Packers, Inc., Portland, Oreg. Filed Oct. 16, 1967.

LONG JOHNS

For Vegetables—Namely, Frozen French Fried Potatoes (Int. Cl. 29).
First use Sept. 26, 1967.

SN 283,410. Alberto-Culver Company, Melrose Park, Ill. Filed Oct. 26, 1967.

SWEET & KWIK

Applicant disclaims exclusive rights to the word "Sweet" separate and apart from the mark as a whole.
For Artificial Sweetener and Sugar Substitute Preparation (Int. Cl. 1).
First use Apr. 3, 1967.

SN 286,838. North Pacific Canners & Packers, Inc., Portland, Oreg. Filed Dec. 13, 1967.



The drawing is lined for the colors orange and gold, but no claim is made to the color. Owner of Reg. No. 764,396.
For Frozen French Fried Potatoes (Int. Cl. 29).
First use Apr. 29, 1967.

SN 289,008. The Charles River Breeding Laboratories, Inc., North Wilmington, Mass. Filed Jan. 17, 1968.

CSSD

For Food for Laboratory Rats and Mice (Int. Cl. 31).
First use December 1965.

SN 289,009. The Charles River Breeding Laboratories, Inc., North Wilmington, Mass. Filed Jan. 17, 1968.

CSD

For Food for Laboratory Rats and Mice (Int. Cl. 31).
First use December 1965.

SN 289,482. Clovis Citrus Company, Clovis, Calif. Filed Jan. 24, 1968.

OFFICER

For Fresh Citrus Fruits (Int. Cl. 31).
First use Oct. 20, 1967.

SN 289,493. Rene Dru, Paris, France. Filed Jan. 24, 1968.

TOASTINE

Priority claimed under Sec. 44(d) on French Reg. No. 727,542, dated July 24, 1967.
For Canned Meat (Int. Cl. 29).

SN 290,094. General Foods Corporation, White Plains, N.Y. Filed Feb. 1, 1968.

TOAST 'EM ANIMALS

The word "Animals" is disclaimed apart from the mark as a whole. Owner of Reg. No. 809,030.
For Food Product, Dough-Like in Nature, With or Without a Fruit Filling, To Be Prepared in a Toaster (Int. Cl. 30).
First use Nov. 20, 1967.

SN 290,895. Schweigert Meat Co., Minneapolis, Minn. Filed Feb. 12, 1968.

Schweigert

For Meat Products—Namely, Wieners, Salami, Bologna, Swedish Sausage, All Beef Link Sausages, Ham Sausage, and Summer Sausage (Int. Cl. 29).
First use 1959; 1947 as to "Schweigert."

SN 293,158. Malone & Hyde, Inc., Memphis, Tenn. Filed Mar. 13, 1968.

Hyde Park

Owner of Reg. No. 792,669.
For Candy, Candied Peanuts, Soft Margarine, and Granulated Sugar (Int. Cls. 29 and 30).
First use no later than Jan. 28, 1968 on candy.

SN 294,474. Church's Fried Chicken, Inc., San Antonio, Tex., by change of name from Church's Food Service Industries, Inc., San Antonio, Tex. Filed Mar. 29, 1968.

I'VE BEEN COOKIN' FOR YA

For Prepared Food—Namely, Fast Service Fried Chicken (Int. Cl. 29).
First use during 1956.

SN 295,365. National Biscuit Company, New York, N.Y. Filed Apr. 10, 1968.

ALERT

For Nutritionally Balanced Liquid Food Which May Be Used as a Substitute for a Conventional Breakfast (Int. Cl. 30).
First use Oct. 26, 1967.

SN 295,919. Costa Ice Cream Company, Woodbridge, N.J. Filed Apr. 18, 1968.

Costa
COFFEE MAID

The word "Coffee" is disclaimed apart from the mark as shown. The drawing is lined for the colors blue and red, but color is not claimed as a feature of the mark.
For Non-Dairy Coffee Lightener (Int. Cl. 30).
First use Feb. 13, 1968.

SN 297,391. Dairymen's League Co-Operative Association, Inc., New York, N.Y. Filed May 6, 1968.

COFFEE SURPRISE

Applicant disclaims the word "Coffee" apart from the mark as shown.
For Frozen Cream Product for Use in Coffee, Tea, Flavored Drinks, Frozen and Unfrozen Desserts, Soups, Sauces and Baked Products and on Cereals and Fruits (Int. Cl. 29).
First use Mar. 15, 1963.

SN 297,792. National Dairy Products Corporation, Chicago, Ill. Filed May 9, 1968.

CUISINE

Owner of Reg. Nos. 522,286, 654,279, and 729,812.
For Olives, Canned Tuna, Chocolate Flavored Syrup, and Mustard (Int. Cls. 29 and 30).
First use July 26, 1966.

SN 297,995. Food Science Research Corp., Burbank, Calif. Filed May 13, 1968.

Jesta

For Dehydrated Food and Beverage Products—Namely, Coffee, Tea, Orange Juice, Tomato Juice, Pineapple Juice, Apple Juice, Grape Juice, Kelp, Cloves, Ginseng Root, Avocado, Raisins, Alfalfa, Papaya, Milk, Comfrey, Soya Protein, Carob, Hydrolyzed Vegetable Proteins, and Imitation Coffee (Int. Cls. 29, 30, and 32).
First use Apr. 4, 1968.

SN 298,242. Penn Dairies, Inc., Lancaster, Pa. Filed May 15, 1968.

SLEEK

For Fluid Milk With Reduced Butter Fat Content (Int. Cl. 29).
First use Apr. 15, 1968.

SN 298,877. Sweetheart Bakers Ltd., Brooklyn, N.Y. Filed May 22, 1968.



The word "Veritas" is the Latin word for "truth."
For Pastry (Int. Cl. 30).
First use at least as early as Feb. 19, 1968.

SN 299,123. Green & Green, Inc., Houston, Tex. Filed May 27, 1968.

AQUASOL

For Food Flavoring Concentrates (Int. Cl. 30).
First use May 5, 1967.

SN 299,444. East Tennessee Packing Company, Knoxville, Tenn. Filed May 31, 1968.

HAMELOT

For Boneless Cooked Hams (Int. Cl. 29).
First use Apr. 12, 1968.

SN 299,882. Stoppenbach Sausage Company, d.b.a. W. F. Thiele Company, Jefferson, Wis. Filed June 6, 1968.

GRILL-BRATS

For Meat Sausage Composed of Beef, Pork or Veal (Int. Cl. 29).
First use May 6, 1968.

SN 301,656. Universal Oil Products Company, d.b.a. UOP Chemical Division, Des Plaines, Ill. Filed June 28, 1968.

SUSTANE

Owner of Reg. No. 535,441.
For Food-Grade Antioxidant (Int. Cl. 1).
First use Apr. 5, 1968; as early as May 26, 1949, in a different form.

SN 301,709. Chick-Fil-A, Inc., Hapeville, Ga. Filed July 1, 1968.



For Frozen Chicken Parts (Int. Cl. 29).
First use May 30, 1968.

SN 302,089. Kellogg Company, Battle Creek, Mich. Filed July 5, 1968.

DANISH GO-ROUNDS

Without waiver of any common law rights in any feature of its mark, applicant disclaims exclusive right to use of the word "Danish" apart from the mark as shown.
For Pastry (Int. Cl. 30).
First use July 1, 1968.

SN 304,060. Dolly Madison Industries, Inc., Philadelphia, Pa. Filed Aug. 1, 1968.

dolly top

Owner of Reg. Nos. 281,725, 791,936, and others.
For Coffee Whitener (Int. Cl. 29).
First use Apr. 1, 1968.

SN 304,083. General Foods Corporation, White Plains, N.Y. Filed Aug. 1, 1968.

CANWICHES

For Prepared Sandwiches in a Can (Int. Cl. 29).
First use June 17, 1968.

SN 304,160. Strube Celery and Vegetable Company, Chicago, Ill. Filed Aug. 1, 1968.

FARM WAGON

For Fresh Fruits and Vegetables (Int. Cl. 31).
First use July 20, 1968.

SN 305,484. Penn Dairies, Inc., Lancaster, Pa. Filed Aug. 19, 1968.

PENN FARMS

For Ice Cream of Different Flavors (Int. Cl. 30).
First use Aug. 8, 1968.

SN 306,145. Hunt-Wesson Foods, Inc., Fullerton, Calif. Filed Aug. 28, 1968.

PAN GRILL

For Vegetable Shortening (Int. Cl. 29).
First use Apr. 22, 1968.

SN 306,190. Tri-Sum Potato Chip Company, Inc., Leominster, Mass. Filed Aug. 28, 1968.

CHIP-A-DILL

For Seasoned Potato Chips (Int. Cl. 29).
First use Aug. 13, 1968.

SN 306,386. Little Crow Milling Company, Inc., Warsaw, Ind. Filed Aug. 30, 1968.

FRY MATE

For Breading for Chicken, Fish, and Chops (Int. Cl. 30).
First use Aug. 14, 1968.

SN 309,508. H. J. Baker & Bro., Inc., New York, N.Y. Filed Oct. 14, 1968.

PRO-PAK

For Livestock and Poultry Feed Supplements—Namely, Protein Concentrate (Int. Cl. 31).
First use Aug. 23, 1968.

SN 311,205. John R. Donath, d.b.a. Impex Company, Chicago, Ill. Filed Nov. 4, 1968.

DONATUS

For Salami (Int. Cl. 29).
First use Oct. 16, 1968.

SN 313,788. Mainline Foods, Inc., Salem, Oreg. Filed Dec. 6, 1968.

MAINLINE

For Frozen and Canned Vegetables (Int. Cl. 29).
First use Sept. 25, 1968.

SN 313,789. Mainline Foods, Inc., Salem, Oreg. Filed Dec. 6, 1968.



For Frozen and Canned Vegetables (Int. Cl. 29).
First use Sept. 25, 1968.

SN 314,026. Mead Johnson & Company, Evansville, Ind. Filed Dec. 10, 1968.

SLIMSATIONS

For Snack Chips of a Cereal Nature With Low Fat Content (Int. Cl. 30).
First use on or prior to Nov. 27, 1968.

Class 47 — Wines

SN 265,091. Monarch Wine Company, Inc., d.b.a. Manischewitz Wine Co., Brooklyn, N.Y. Filed Feb. 20, 1967.



For Wine and Champagne (Int. Cl. 33).
First use Jan. 5, 1966.

Class 48 — Malt Beverages and Liquors

SN 287,435. Kiku-Masamune Sake Brewing Co., Ltd., Higashinada-ku, Kobe, Hyogo Prefecture, Japan. Filed Dec. 22, 1967.



The Japanese characters on the left half of the circle transliterate to "Jun-Ryo Sei-Shu," which means "pure sake," "Sei-Shu" being a synonym for sake; the Japanese characters on the right half of the circle transliterate to "Toku-Sen," which means "special selection"; and the Japanese characters in the middle of the circle transliterate to "Kiku-Masamune," "Kiku" meaning "chrysanthemum," and "Masamune" being the name of a famous Japanese sword maker, deceased. The Japanese characters meaning "pure sake" and "special selection," along with the English word "Sake" are disclaimed apart from the mark as shown. Owner of U.S. Reg. Nos. 320,161 and 617,273.
For Japanese Brewed Sake (Int. Cl. 33).
First use Nov. 11, 1966; in commerce Nov. 11, 1966.

Class 49 — Distilled Alcoholic Liquors

SN 301,970. Joseph E. Seagram & Sons, Inc., New York, N.Y. Filed July 3, 1968.

OLD KING COLE

For Blended Whiskey (Int. Cl. 33).
First use June 24, 1968.

Class 50 — Merchandise Not Otherwise Classified

SN 274,199. Fleming & Sons, Inc., Dallas, Tex. Filed June 19, 1967.

ZING

For Pressure Sensitive Decorative Vinyl Covering Material in Sheet Form, Adapted To Be Applied to Flat Surfaces (Int. Cl. 20).
First use Apr. 10, 1967.

SN 282,262. U.S. Industries, Inc., New York, N.Y., assignee of Big Dutchman, Inc., Zeeland, Mich. Filed Oct. 11, 1967.

WEATHER-WALL

For Systems Comprising a Curtain, an Accompanying Winch, and Related Components, Normally Sold as a Unit, for Covering Side Wall Openings in Animal Shelters (Int. Cl. 22).
First use on or before Jan. 1, 1960.

SN 286,926. The Franklin Mint, Inc., Yeadon, Pa., by change of name from General Numismatics Corporation, Yeadon, Pa. Filed Dec. 14, 1967.

THE FRANKLIN MINT

The term "Mint" is disclaimed apart from the mark as shown.
For Non-Monetary Coins; Tokens; Medals; and Medallions (Int. Cl. 14).
First use Apr. 28, 1965.

SN 296,074. Johnson & Johnson, New Brunswick, N.J. Filed Apr. 22, 1968.

JUDY

For Baby Gift Set Containing Crib Sheets, Pillow Cases, Receiving Blankets, Towels, Lap Pads, Bibs, Blankets; Novelties Such as Rattles and Diaper Pins; Diapers, Baby Pants; Toiletries Such as Powder, Lotion and Soap; Decals for Nursery Decorative Uses (Int. Cl. 24).
First use as early as 1947.

SN 301,564. Wenner-Gren Foundation for Anthropological Research, Inc., New York, N.Y. Filed June 27, 1968.



For Reproductions of Anthropological Objects Illustrating Man's Physical and Cultural Origins and Development Such as Skulls, Bones, Teeth, Ancient Tools, and Artifacts (Int. Cl. 20).
First use Apr. 4, 1968.

SN 303,924. Planprint Company, Chalfont, Pa. Filed July 30, 1968.

PLANPRINT

Owner of Reg. No. 606,534.
For Custom-Designed Plant Layout Planning Kits Consisting of Floor Space Outline Panels, Overlays, Grids, Adhesive-Backed Templates, Symbols and Strips, Floor Space Maps, Printed Master Sheets, Template Lifters, Pins, Template Storage Books, Image Eradicators, and Related Components (Int. Cl. 16).
First use Apr. 4, 1953.

Class 51 — Cosmetics and Toilet Preparations

SN 280,562. Clairol Incorporated, New York, N.Y. Filed Sept. 18, 1967.

BASIC BLONDE

Applicant disclaims the word "Blonde" apart from the mark as shown. Owner of Reg. Nos. 762,510, 762,511, and 768,050.
For Hair Tinting, Dyeing and Coloring Preparation (Int. Cl. 3).
First use Aug. 29, 1967.

SN 283,888. Edward Grice, d.b.a. Service Beauty Supply, Oakland, Calif. Filed Nov. 1, 1967.

E. Esirg's

The name "E. Esirg's" is fictitious.
For Hair Conditioner (Int. Cl. 3).
First use June 29, 1962.

SN 287,980. Yardley of London, Inc., Totowa, N.J. Filed Jan. 2, 1968.

SPRINGFLOWERS

For Dusting Powder, Foam Bath, Talc With Deodorant, Cologne, and Cologne Mist (Int. Cls. 3 and 5).
First use Dec. 14, 1967.

SN 293,566. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Mar. 18, 1968.

WINNIE

For Toilet Water and Make-Up Foundation (Int. Cl. 3).
First use Feb. 6, 1968.

SN 294,863. Sharon Ray Corp., Angola, Ind. Filed Apr. 3, 1968.

SHARON RAY

"Sharon Ray" is a fictitious name.
For Cosmetic Preparations—Namely, Perfume, Toilet Water, Bath Oil, Cleansing Lotion, Astringents, Skin Toner, Moisture Lotion, Hand and Body Lotions, Eye Makeup, Eye Shadow, Eyebrow Pencil, Eyeliner, Mascara, Liquid Makeup, Pressed Powder, Blusher, Lipstick, After Shave, and Cologne (Int. Cl. 3).
First use on or before Mar. 16, 1968.

SN 296,110. Chadbourn Gotham, Inc., Charlotte, N.C. Filed Apr. 22, 1968.

LEGMETIC

For Skin Softener for Use on Legs (Int. Cl. 3).
First use Jan. 9, 1967.

SN 300,681. John H. Breck, Inc., Wayne, N.J. Filed June 18, 1968.

TWIN RINSE

Applicant Disclaims the word "Rinse" apart from the mark as shown.
For Creme Rinse (Int. Cl. 3).
First use May 27, 1968.

SN 303,374. Yardley of London, Inc., New York, N.Y. Filed July 22, 1968.

LUV DUST

Applicant disclaims the word "Dust" apart from the mark as shown.
For Cosmetics—Namely, Dusting Powder, Talc, and Powder Mits (Int. Cl. 3).
First use June 12, 1968.

SN 303,745. The Gillette Company, Boston, Mass. Filed July 29, 1968.

GET HOT

For Body Lotion (Int. Cl. 3).
First use May 27, 1968.

SN 304,268. Warner-Lambert Pharmaceutical Company, Morris Plains, N.J. Filed Aug. 2, 1968.

FINAL WONDER

For Fluid Make-Up (Int. Cl. 3).
First use July 30, 1968.

SN 304,269. Warner-Lambert Pharmaceutical Company, Morris Plains, N.J. Filed Aug. 2, 1968.

LASTING BEAUTY

For Fluid Makeup (Int. Cl. 3).
First use July 30, 1968.

SN 304,500. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Aug. 6, 1968.

FORE & AFT

Owner of Reg. Nos. 316,661 and 576,208.
For Men's Hair Dressing (Int. Cl. 3).
First use July 25, 1968.

SN 304,501. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Aug. 6, 1968.

CREDENTIAL

For Men's Hair Dressing (Int. Cl. 3).
First use July 25, 1968.

SN 304,894. Clairol Incorporated, New York, N.Y. Filed Aug. 12, 1968.

BORN BEAUTIFUL

For Hair Tinting, Dyeing and Coloring Preparations (Int. Cl. 3).
First use Apr. 4, 1968.

SN 305,529. John H. Breck, Inc., Wayne, N.J. Filed Aug. 20, 1968.

LOOK 'N GROOVY

For Hair Spray (Int. Cl. 3).
First use July 30, 1968.

SN 305,811. Cosmetically Yours, Inc., Yonkers, N.Y. Filed Aug. 23, 1968.

THE GREAT WHITE SALE

For Compact Makeup, Liquid Rouge, Liquid Eyeliner, Liquid Makeup, Nail Polish, Eye Shadow, Eyebrow and Liner Pencil, Eyebrow Makeup, and Lipstick (Int. Cl. 3).
First use Aug. 14, 1968.

SN 305,922. Clairol Incorporated, New York, N.Y. Filed Aug. 26, 1968.



For Cake Eyeliner (Int. Cl. 3).
First use June 7, 1967.

SN 306,374. Holiday Magic, San Rafael, Calif. Filed Aug. 30, 1968.

EYE-MATES

For Eye Shadow (Int. Cl. 3).
First use Aug. 5, 1968.

SN 306,634. John H. Breck, Inc., Wayne, N.J. Filed Sept. 5, 1968.

LOOK'N GROOVY

For Creme Rinse and Skin Lotion (Int. Cl. 3).
First use Aug. 13, 1968.

SN 306,747. Avon Products, Inc., New York, N.Y. Filed Sept. 6, 1968.

APLOMB

For Feminine Hygiene Product (Personal Spray Deodorant) (Int. Cl. 5).
First use July 17, 1968.

SN 306,749. Avon Products, Inc., New York, N.Y. Filed Sept. 6, 1968.

SUCCESSFULLY YOURS

For Mascara, Moisturized Face Cream, Hair Conditioner, Eye Shadow and Cake Eyeliner (Int. Cl. 3).
First use July 17, 1968.

SN 307,078. Avon Products, Inc., New York, N.Y. Filed Sept. 11, 1968.

COMPETITE

For Filled Powder Compact (Int. Cl. 3).
First use November 1966.

SN 307,116. Majestic Drug Co., Inc., Bronx, N.Y. Filed Sept. 11, 1968.

YOUTHTONE

For Facial and Skin Moisturizer (Int. Cl. 3).
First use Sept. 3, 1968.

SN 307,202. Farmaceutici Dr. Ciccarelli, Milan, Italy. Filed Sept. 12, 1968.

DEL CAPITANO

Owner of Italian Reg. No. 128,999, dated Dec. 20, 1955.
For Tooth Paste (Int. Cl. 3).

SN 307,226. P. J. Noyes Company, Inc., Lancaster, N.H. Filed Sept. 12, 1968.

SELAN

For Protective Hand Cream (Int. Cl. 3).
First use November 1948.

SN 307,351. Revlon, Inc., New York, N.Y. Filed Sept. 13, 1968.

QUICKOUT

For Powder Bleach for the Hair (Int. Cl. 3).
First use Mar. 10, 1957.

SN 307,419. John H. Breck, Inc., Wayne, N.J. Filed Sept. 16, 1968.

GLORY GIRL

For Hair Coloring Preparation (Int. Cl. 3).
First use Aug. 29, 1968.

SN 307,486. La Maur, Inc., d.b.a. The House of Style, Minneapolis, Minn. Filed Sept. 16, 1968.

MEMORY

For Hair Conditioning and Setting Lotion (Int. Cl. 3).
First use Aug. 27, 1968.

SN 314,033. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Dec. 10, 1968.

WARM BEAUTY

Applicant disclaims the word "Warm" apart from the mark as shown.
For Skin Cream (Int. Cl. 3).
First use Oct. 4, 1968.

SN 314,394. S. C. Johnson & Son, Inc., Racine, Wis. Filed Dec. 13, 1968.

BATTLE RIBBON

For Shave Cream (Int. Cl. 3).
First use on or about May 9, 1968.

SN 314,492. Colgate-Palmolive Company, New York, N.Y. Filed Dec. 16, 1968.

A WHISPER OF SPRINGTIME

For Bath Oil (Int. Cl. 3).
First use Nov. 12, 1968.

SN 314,851. Carter-Wallace, Inc., New York, N.Y. Filed Dec. 19, 1968.

NAIANT

For Skin Cleanser (Int. Cl. 3).
First use Nov. 21, 1968.

SN 315,717. Richard Hudnut, Morris Plains, N.J. Filed Jan. 3, 1969.

V.I.P.

For After-Shave Lotion (Int. Cl. 3).
First use Dec. 23, 1968.

SN 316,868. Life Laboratories, Inc., North Hollywood, Calif. Filed Jan. 17, 1969.

Pantho Nail

The term "Nail" is disclaimed apart from the mark as shown.
For High Protein Cream for Fingernails and Toenails (Int. Cl. 3).
First use June 1, 1961.

Class 52 — Detergents and Soaps

SN 285,218. Elsan Limited, London, England. Filed Nov. 20, 1967.

ELSAN

For Preparations for Cleaning, Deodorizing and Disinfecting Portable Chemical Toilets (Int. Cl. 5).
First use Sept. 1, 1923; in commerce Aug. 25, 1967.

SN 287,474. Colgate-Palmolive Company, New York, N.Y. Filed Dec. 21, 1967.



The words "Softens Up Water," "New Heavy Duty," "Adjusted Suds Detergent," and "Knocks Out Dirt" are disclaimed apart from the mark as shown. The drawing is lined for the colors blue and Green. Applicant makes no claim to the exclusive use of either the color blue or the color green as background except as part of the distinctive design shown on the drawing. Owner of Reg. Nos. 55,886, 815,607, and others.
For Laundry Detergent (Int. Cl. 3).
First use Aug. 21, 1967.

SN 289,737. West Chemical Products, Inc., Long Island City, N.Y. Filed Jan. 26, 1968.

DEAR JOHN

For Toilet Bowl Cleaner and Aerosol Bathroom Deodorizer (Int. Cl. 3).
First use Dec. 1, 1967.

SN 297,095. Schratz Products, Inc., d.b.a. Schratz Since 1888, Detroit, Mich. Filed May 1, 1968.

SOFT MAGIC

Owner of Reg. No. 705,058.
For Toilet Soap (Int. Cl. 3).
First use Feb. 27, 1968.

SN 297,524. Bristol-Myers Company, New York, N.Y. Filed May 7, 1968.

CHANTE DE PEARL

The French words "Chante de" mean "song of" in English. Applicant disclaims the word "Pearl" apart from the mark as shown.
For Hair Shampoo (Int. Cl. 3).
First use Apr. 1, 1968.

SN 298,114. Ekoperl G.m.b.H., Dortmund, Germany, Filed May 14, 1968.

ekoperl

Owner of German Reg. No. 804,289, dated Apr. 11, 1964.
For Compound for Absorbing Oil and Other Organic or Inorganic Fluids From Solid or Liquid Surface (Int. Cl. 4).

SN 299,617. American Home Products Corporation, New York, N.Y. Filed June 4, 1968.

CLEARLY COOL

For Shampoo for the Hair and Scalp (Int. Cl. 3).
First use Apr. 23, 1968.

SN 304,762. Clairol Incorporated, New York, N.Y. Filed Aug. 9, 1968.

IRISH RAIN WATER

For Hair Shampoo (Int. Cl. 3).
First use Apr. 30, 1968.

SN 306,635. John H. Breck, Inc., Wayne, N.J. Filed Sept. 5, 1968.

LOOK'N GROOVY

For Hair Shampoo (Int. Cl. 3).
First use Aug. 15, 1968.

SN 306,638. John H. Breck, Inc., Wayne, N.J. Filed Sept. 5, 1968.

GLORY GIRL

For Hair Shampoo (Int. Cl. 3).
First use Aug. 15, 1968.

SERVICE MARKS

Class 100 — Miscellaneous

SN 265,308. John B. Johnson, Jr., d.b.a. Bachelor Club of America, Fort Wayne, Ind. Filed Feb. 23, 1967.

BACHELOR CLUB OF AMERICA

For Renting and Leasing Apartments (Int. Cl. 36).
First use Dec. 10, 1966.

SN 278,612. Shipley Do-Nut Flour & Supply Co., Inc., Houston, Tex. Filed Aug. 18, 1967.

THE GREATEST NAME IN DO-NUTS

Without Relinquishing any of its common law rights, applicant disclaims the word "Do-Nuts" apart from the mark as shown.
For Doughnut and Coffee Shop Services, Including Carry-Out Services (Int. Cl. 42).
First use approximately Jan. 1, 1955.

SN 286,708. Austin E. Myers, Denver, Colo. Filed Dec. 11, 1967.

WHY COOK TODAY? DINE THE DRUMSTICK WAY!

For Restaurant Services (Int. Cl. 42).
First use May 1967.
Subj. to Intf. with SN 277,420, SN 277,421, and SN 278,861.

SN 287,083. Austin E. Myers, Denver, Colo. Filed Dec. 18, 1967.



For Restaurant Services (Int. Cl. 42).
First use 1946.

SN 287,084. Austin E. Myers, Denver, Colo. Filed Dec. 18, 1967.

DRUMSTICK

Applicant disclaims the word "Restaurant" apart from the mark as shown.
For Restaurant Services (Int. Cl. 42).
First use Nov. 29, 1967.
Subj. to Intf. with SN 277,420, SN 277,421, and SN 278,861.

SN 288,087. Chuckwagon Service Corporation, Bala Cynwyd, Pa. Filed Jan. 4, 1968.



For Restaurant Services (Int. Cl. 42).
First use Dec. 15, 1963.

SN 289,986. Genetics, Inc., Hughson, Calif. Filed Jan. 31, 1968.

Genetics, Inc.

The word "Genetics" is disclaimed apart from the mark as shown.
For Animal Breeding Service (Int. Cl. 42).
First use October 1966.

SN 295,994. Marion Chamber of Commerce, Inc., Marion, Ind. Filed Apr. 19, 1968.

CHRISTMAS CITY U.S.A.

Applicant disclaims the letters "U.S.A." apart from the mark as shown.
For Association Services—Namely, Promoting the Growth and Development of Member Businesses (Int. Cl. 42).
First use Oct. 22, 1967.

SN 301,254. The Red Barn System, Inc., Fort Lauderdale, Fla. Filed June 24, 1968.



For Restaurant Services (Int. Cl. 42).
First use June 4, 1967.

SN 301,255. The Red Barn System, Inc., Fort Lauderdale, Fla. Filed June 24, 1968.

CHICKEN PANTRY

For Restaurant Services (Int. Cl. 42).
First use June 4, 1967.

SN 301,532. International Paper Company, New York, N.Y. Filed June 27, 1968.

SHOW N' SELL

For Packaging Design Service, Including the Preparation of Graphics, Artwork and Printing for Use on Packaging (Int. Cl. 42).
First use September 1966.

SN 305,105. Valley Chaparral Company, Edinburg, Tex. Filed Aug. 14, 1968.

CHAPARRAL RESTAURANTS

No claim is made to the word "Restaurants" apart from the mark as shown.
For Restaurant Services (Int. Cl. 42).
First use on or about July 15, 1968.

Class 101 — Advertising and Business

SN 265,853. Popular Merchandise Co., Inc., d.b.a. Popular Club Plan, Passaic, N.J. Filed Feb. 28, 1967.

READY-ORDER CLUBS

For Retail Mail Order Services in the Field of Consumer Goods Rendered Through Purchasing Clubs (Int. Cl. 35).
First use December 1966.

SN 268,439. Telegraph Herald, Inc., East Dubuque, Ill. Filed Apr. 5, 1967.

TEL GRAPHICS

The word "Graphics" is disclaimed apart from the mark as shown.
For Printing Services (Int. Cl. 35).
First use Aug. 1, 1966.

SN 278,779. The Bathroom Decorating & Planning Center, Inc., Mobile, Ala. Filed Aug. 22, 1967.

The Bathroom Decorating & Planning Center

Without relinquishing any of its common law rights, applicant disclaims the words "The Bathroom Decorating & Planning Center" apart from the mark as shown.
For Planning, Arranging and Furnishing Display Rooms for Others which Illustrate Bathroom Appliances and Decorations, and Planning, Arranging and Furnishing Bathrooms (Int. Cl. 35).
First use July 1, 1967; June 1, 1964 in a different form.

SN 288,979. Patent Reproduction Company, Washington, D.C. Filed Jan. 16, 1968.

PAT LITHOGRAPHER

Without relinquishing any common law rights therein, no claim is made to the words "Pat Lithographer" apart from the mark as shown.
For Preparing Photo-Lithographic Reproductions of Patent and Trademark Drawings for Others (Int. Cl. 35).
First use September 1966.

SN 290,280. Gericare Development Corporation, Saginaw, Mich. Filed Feb. 5, 1968.

GERICARE

For Counseling Service Relative to the Designing, Building and Financing of Rest or Nursing Homes and Their Licensing, Maintenance, Management, and Operation (Int. Cl. 35).
First use Sept. 27, 1966.

SN 290,523. Postal Press, Los Angeles, Calif. Filed Feb. 7, 1968.

PIP

For Printing Services (Int. Cl. 35).
First use Sept. 1, 1965.

SN 290,609. Home to Home, Inc., Mount Prospect, Ill. Filed Feb. 8, 1968.

HOME TO HOME

For Real Estate Brokerage Services (Int. Cl. 35).
First use during September 1966.

SN 292,343. Burroughs Corporation, Detroit, Mich. Filed Mar. 4, 1968.

Burroughs

For Rendering Programming Services for Data Processing; Furnishing Electronic Computer Time to Others; and Rendering Technical Services to Others in Establishing, Implementing, and Operating Data Processing and Character Recognition Systems (Int. Cl. 35).
First use about March 1910.

SN 293,730. Malone & Hyde, Inc., d.b.a. Giant Foods of America, Memphis, Tenn. Filed Mar. 20, 1968.

GFA GIANT FOODS OF AMERICA

For Grocery Store Services (Int. Cl. 35).
First use Sept. 13, 1966.

SN 295,339. J & H International Corporation, Chicago, Ill. Filed Apr. 10, 1968.

COLOR CASH BINGO

Applicant disclaims the word "Bingo" apart from the mark as shown.
For Sales Promotion for Retail Establishments, Such as Supermarkets, Service Stations and the Like, Through the Organization, Offering and Distribution of Promotional Games Utilizing Promotional Literature, Prize Slips, Game Cards, Game Discs and the Like, to the Public at the Participating Establishments (Int. Cl. 35).
First use Dec. 15, 1967.

SN 297,428. Medical and Dental Consultants, Houston, Tex. Filed May 6, 1968.

MDC
MEDICAL AND DENTAL CONSULTANTS

No claim is made to the words "Medical and Dental Consultants" and the representation of the medical symbol of the Caduseus, apart from the mark as a whole.
For Advising and Assisting Physicians and Dentists in the Management of Their Practices (Int. Cl. 35).
First use Jan. 1, 1968.

SN 299,156. Peters Employment Service Inc., Boston, Mass. Filed May 27, 1968.



The lining on the drawing is for shading only. Owner of Reg. No. 441,223.
For Employment Agency Services (Int. Cl. 35).
First use Nov. 1, 1926.

SN 300,733. Office Overload Co. Ltd., Toronto, Ontario, Canada. Filed June 18, 1968.



Owner of Canadian Reg. No. 150,374, dated Apr. 21, 1967.
For Employment Agency Services and Business Consultant Services; Temporary Help Services; and Personnel Counselling Services (Int. Cl. 35).

SN 300,735. Office Overload Co. Ltd., Toronto, Ontario, Canada. Filed June 18, 1968.

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For Employment Agency and Business Consultant Services; Temporary Help Services; and Personnel Counselling Services (Int. Cl. 35).
First use July 1, 1963; in commerce Aug. 1, 1963.

Class 102 — Insurance and Financial

SN 276,909. Affiliates for Real Estate in America, Inc., Reading, Pa. Filed July 27, 1967.



For Coast-To-Coast Real Estate Referral Service (Int. Cl. 36).
First use May 8, 1967.
Subj. to Intf. with SN 286,992.

SN 276,910. Affiliates for Real Estate in America, Inc., Reading, Pa. Filed July 27, 1967.

AREA

For Coast-To-Coast Real Estate Referral Service (Int. Cl. 36).
First use May 8, 1967.
Subj. to Intf. with SN 286,992.

SN 289,803. Harlan, Incorporated, Houston, Tex. Filed Jan. 29, 1968.



Applicant disclaims the words "Insurance Services" apart from their use in the mark as shown.
For Insurance Brokerage, Employee Benefit Consulting and Programing and Estate Planning (Int. Cl. 36).
First use Jan. 3, 1968.

SN 297,398. First National City Bank, New York, N.Y. Filed May 6, 1968.

THE EVERYWHERE CHECK

Applicant disclaims the word "Check" apart from the mark as shown.
For Issuance and Redemption of Travelers Checks (Int. Cl. 36).
First use Feb. 23, 1968.

SN 297,399. First City National Bank of Houston, Houston, Tex. Filed May 6, 1968.



The mark comprises a fanciful representation of the letter "F."
For Banking Services—Namely, Financing, Credit and Loan Services, Compound Interest Accounts, Checking Accounts, Special Checking Accounts, Foreign Exchange, Letters of Credit and Travelers' Checks, Commercial Savings and Trust Department and Other Financial Services (Int. Cl. 36).
First use Jan. 15, 1968.

SN 299,836. EAS Management Service, Inc., Dallas, Tex, assignee of Employee Advisory Service, Dallas, Tex. Filed June 6, 1968.



For Planning Insurance Programs, Particularly Life and Disability Insurance Programs, for Individuals, Specifically Company Employees (Int. Cl. 36).
First use at least as early as April 1968.

SN 301,539. Manufacturers Mutual Fire Insurance Company, Providence, R.I. Filed June 27, 1968.



The portrait appearing on the drawing is that of "Zachariah Allen," founder of Factory Mutual Insurance, now deceased.
For Underwriting Insurance Services (Int. Cl. 36).
First use Jan. 1, 1923.

SN 302,336. Investors Syndicate Life Insurance and Annuity Company, Minneapolis, Minn. Filed July 9, 1968.

ONE OF THE IDS GROUP

Owner of Reg. Nos. 693,627, 839,311, and others.
For Underwriting Life Insurance and Disability Insurance (Int. Cl. 36).
First use May 16, 1968.

Class 103 — Construction and Repair

SN 281,720. Reittek Industrial Corp., Waco, Tex. Filed Oct. 3, 1967.



The stippling in the drawing is for shading purposes only.
For Cleaning Masonry, Natural Stone, Concrete, Asbestos, and Like Materials (Int. Cl. 37).
First use Feb. 27, 1967.

SN 284,647. L. B. Foster Company, Pittsburgh, Pa. Filed Nov. 13, 1967.

FASTER FROM FOSTER

Owner of Reg. Nos. 179,687 and 179,688.
For Rental Services Involving the Rental to Third Parties of Steel Sheet Piling, Pipe Piling, H-Bearing Piles, Lightweight Piling, and Pile Hammers and Extractors; Pipe Processing Services Rendered in Connection with the Sale of Pipe and Pipe Valves and Fittings and Including Pipe Cutting, Bending, Threading, Coating, and Wrapping; and Track-Removal Services Including the Taking Up and Removal of Rails, Ties, and Ballast of Industrial Sidings and In-Plant Trackage (Int. Cl. 37).
First use June 1955.

SN 284,903. General Electric Company, Schenactady, N.Y. Filed Nov. 15, 1967.

GEGARD

For Repair Service of Motors and Wound Electrical Equipment (Int. Cl. 37).
First use June 21, 1966.

SN 290,683. Aero Systems, Inc., Miami Springs, Fla. Filed Feb. 9, 1968.

AERO SYSTEMS

For Inspecting, Repairing, Overhauling, Maintaining, and/or Modifying Aviation Electronic Instruments and Equipment, Including Test Equipment and Test Mock-Up Panels (Int. Cl. 37).
First use on or about July 1, 1967.

SN 295,358. Mobat Tire & Rubber Co., Inc., Livermore, Calif. Filed Apr. 10, 1968.

MOBAT

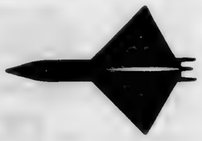
For Tire Vulcanizing Services (Int. Cl. 37).
First use Sept. 22, 1966.

SN 295,361. Mobat Tire & Rubber Co., Inc., Livermore, Calif. Filed Apr. 10, 1968.



Applicant disclaims the representation of the map of the United States apart from the mark. The lining shown in the drawing constitutes a part of the mark and does not represent color.
For Tire Vulcanizing Services (Int. Cl. 37).
First use Sept. 22, 1966.

SN 298,879. Texas Aerospace Services, Inc., Abilene, Tex. Filed May 22, 1968.



For Repairing and Reconditioning Aircraft Navigational and Electronic Devices (Int. Cl. 37).
First use June 1, 1967.

Class 104 — Communication

SN 288,840. Mid-Continent Telephone Corporation, Elyria, Ohio. Filed Jan. 15, 1968.



"System" is disclaimed apart from the mark as shown.
For Communication Services—Namely, Providing Telephone Service to Various Communities (Int. Cl. 38).
First use Mar. 1, 1961.

Class 105 — Transportation and Storage

SN 294,827. Emery Air Freight Corporation, Wilton, Conn. Filed Apr. 3, 1968.

EMERY

Owner of Reg. Nos. 638,594 and 820,507.
For Air Transportation of Freight (Int. Cl. 39).
First use on or about Apr. 22, 1946.

SN 299,258. Time Travel Inc., Chicago, Ill. Filed May 28, 1968.

TIME



TRAVEL

The word "Travel" is disclaimed apart from the mark as shown.

For Travel Agency Service Including Arranging All Types of Transportation and Accommodations, Foreign and Domestic Package Tours, Chartered Tours, and Independent Tours (Int. Cl. 39).

First use Apr. 19, 1968.

Class 107 — Education and Entertainment

SN 289,196. Auction Man, Inc., Springfield, Ohio, assignee of John D. Kennedy, d.b.a. John Kennedy Company, Greenville, Ohio. Filed Jan. 19, 1968.

AUCTION MAN

For Radio Entertainment Program—Namely, Presenting News, Music, Auctioneering, and Commentary (Int. Cl. 41).

First use May 15, 1967.

SN 290,794. The World Outdoors, Inc., Danbury, Conn. Filed Feb. 9, 1968.

WORLD OUTDOORS

For Entertainment Services—Namely, Movies, Television, Video Tapes, Radio Tapes, Live Performances, and Lectures (Int. Cl. 41).

First use on or before May 9, 1949.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 289,911. National Soft Drink Association, Washington, D.C. Filed Jan. 30, 1968.

Owner of Reg. No. 852,080.

For Indicating Membership in Applicant.

First use Jan. 1, 1967.

CERTIFICATION MARKS

Class A — Goods

SN 306,024. De Danske Mejeriforeningers Faelloesorganisation, Aarhus, Denmark. Filed July 31, 1968.



The mark certifies that the goods are produced in Denmark and meet standards and quality established by applicant.

For Butter and Cheese (Int. Cl. 29).

First use July 1958; in commerce July 1964.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

869,206. FROM THE GARDEN OF THE LEPRECHAUNS. B. L. Cobia, Inc. SN 294,597. Pub. 2-25-69. Filed 4-1-68.

869,207. DARBEE. Randal Fuel Company Incorporated, SN 294,749. Pub. 2-25-69. Filed 4-2-68.

869,208. BIKORIT. Feldmühle Aktiengesellschaft. SN 294,929. Pub. 2-25-69. Filed 4-4-68.

869,209. WINLON. Winzen Research, Inc. SN 295,990. Pub. 2-25-69. Filed 4-18-68.

869,210. HERMES LEATHER AND DESIGN. Hermes Leather Co., Inc. SN 296,607. Pub. 2-25-69. Filed 4-11-68.

869,211. VOL-A-COAL. The Hill & Griffith Co. SN 296,960. Pub. 2-25-69. Filed 4-30-68.

869,212. UROTUF. Reichhold Chemicals, Inc. SN 297,592. Pub. 2-25-69. Filed 5-7-68.

Class 2 — Receptades

869,213. ATTACHE AND DESIGN. Comet Packaging Corporation. MULTIPLE CLASS (Classes 2, 37, and 39). SN 306,101. Pub. 2-25-69. Filed 8-28-68.

869,214. CONDIMATE. Rexall Drug and Chemical Company, d.b.a. Tupperware. SN 306,273. Pub. 2-25-69. Filed 8-29-68.

869,215. TOWN AND COUNTRY. Jackes-Evans Manufacturing Company. SN 306,915. Pub. 2-25-69. Filed 9-9-68.

869,216. TALCAR. Union Carbide Corporation. SN 306,967. Pub. 2-25-69. Filed 9-9-68.

869,217. CPC AND DESIGN. Container Products Corporation. SN 307,089. Pub. 2-25-69. Filed 9-11-68.

869,218. POLYKINI. Deerfield Groves Company. SN 307,730. Pub. 2-25-69. Filed 9-19-68.

869,219. CUBE. Hedwin Corporation. SN 307,741. Pub. 2-25-69. Filed 9-19-68.

869,220. GATOR LOK AND DESIGN. International Paper Company. SN 308,111. Pub. 2-25-69. Filed 9-24-68.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

869,221. TOUR-MATE. Atlantic Products Corporation (Delaware corporation), assignee of Atlantic Products Corporation (New Jersey corporation). SN 282,259. Pub. 2-25-69. Filed 10-11-67.

869,222. VIP AND DESIGN. Diana Stores Corporation. SN 293,115. Pub. 2-25-69. Filed 3-13-68.

869,223. BAGS BY PATRICIA. Adolph A. Katz. SN 298,828. Pub. 2-25-69. Filed 5-22-68.

869,224. FUR-SAVER. Full Bloom Products, Inc. SN 305,825. Pub. 2-25-69. Filed 8-23-68.

869,225. SISSY. Seward Luggage Manufacturing Company, Inc. SN 306,174. Pub. 2-25-69. Filed 8-28-68.

869,226. THE MANDARIN. Lesco Lona, Inc. SN 306,573. Pub. 2-25-69. Filed 9-4-68.

Class 4 — Abrasives and Polishing Materials

869,227. SHOW CAR. Michigan Hot Rod Association. SN 266,245. Pub. 2-25-69. Filed 3-8-67.

869,228. SLIX. Slix Products, Inc. SN 305,686. Pub. 2-25-69. Filed 8-21-68.

869,229. WATERCOLOR. Armour-Dial, Inc. SN 306,744. Pub. 2-25-69. Filed 9-6-68.

869,230. EXPO. Armour-Dial, Inc. SN 306,746. Pub. 2-25-69. Filed 9-6-68.

Class 5 — Adhesives

869,231. HOLD UP AND DESIGN. Hold Up, Inc. SN 277,284. Pub. 2-25-69. Filed 8-1-67.

869,232. WONDER UNDER. Pellon Corporation. SN 305,240. Pub. 2-25-69. Filed 8-15-68.

Class 6 — Chemicals and Chemical Compositions

869,233. QUIK-SOFT. Colgate-Palmolive Company. SN 258,670. Pub. 2-25-69. Filed 11-15-66.

869,234. BECK IMPORTED MOTOR PARTS AND DESIGN. Beck Distributing Corp. MULTIPLE CLASS (Classes 6, 19, 21, 23, 35, and 39). SN 265,185. Pub. 2-25-69. Filed 2-21-76.

869,235. OXY IN DESIGN. Oxy Catalyst, Inc. MULTIPLE CLASS (Classes 6, 23, and 31). SN 269,998. Pub. 2-25-69. Filed 4-25-67.

869,236. ROMA. United Merchants and Manufacturers, Inc. SN 282,304. Pub. 2-25-69. Filed 10-11-67.

869,237. MILSIZE. Atlas Chemical Industries, Inc. SN 288,668. Pub. 2-25-69. Filed 1-12-68.

869,238. THIN-LINE. Percy Harms Corporation. SN 294,625. Pub. 2-25-69. Filed 4-1-68.

869,239. RHENEX. Sel-Rex Corporation. SN 299,701. Pub. 2-25-69. Filed 6-4-68.

869,240. VARINE. Northern Petrochemical Company. SN 299,995. Pub. 2-25-69. Filed 6-7-68.

869,241. THE RIGHT APPROACH. Rhodia Inc. SN 300,004. Pub. 2-25-69. Filed 6-7-68.

869,242. BROM-O-SOL. Great Lakes Chemical Corporation. SN 300,188. Pub. 2-25-69. Filed 6-11-68.

869,243. CHLOR-O-PIC. Great Lakes Chemical Corporation. SN 300,189. Pub. 2-25-69. Filed 6-11-68.

869,244. METH-O-GAS. Great Lakes Chemical Corporation. SN 300,190. Pub. 2-25-69. Filed 6-11-68.

869,245. FLYCO. F & W Enterprises, Inc. SN 300,274. Pub. 2-25-69. Filed 6-12-68.

869,246. COAT OF ARMS (DESIGN). Woodlets, Inc. SN 300,301. Pub. 2-25-69. Filed 6-12-68.

869,247. COOL-AMP. The Cool-Amp Co. SN 300,331. Pub. 2-25-69. Filed 6-13-68.

869,248. ACARALATE. Geigy Chemical Corporation. SN 300,440. Pub. 2-25-69. Filed 6-14-68.

869,249. ALDRITE. Shell Oil Company. SN 300,747. Pub. 2-25-69. Filed 6-18-68.

869,250. DIELDRITE. Shell Oil Company. SN 300,748. Pub. 2-25-69. Filed 6-18-68.

869,251. FERNERIE. Avon Products, Inc. SN 301,172. Pub. 2-25-69. Filed 6-24-68.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

869,252. KUSH WADS. Henco Enterprises, Inc. SN 300,278. Pub. 2-25-69. Filed 6-12-68.

Class 10 — Fertilizers

869,253. FARMSCO AND DESIGN. Allied Chemical Corporation. SN 279,445. Pub. 2-25-69. Filed 8-31-67.

869,254. F FELCO AND DESIGN. Farmers Regional Cooperative. SN 305,274. Pub. 2-25-69. Filed 8-16-68.

Class 12 — Construction Materials

869,255. SHADO-SHAKE Supradur Manufacturing Corporation. SN 270,297. Pub. 2-25-69. Filed 4-28-67.

869,256. LEVELON. Allied Compositions Co., Inc. SN 271,323. Pub. 2-25-69. Filed 5-12-67.

869,257. KWIK-ZIP. Keene Corporation, assignee of Penn Metal Company, Inc. SN 277,703. Pub. 2-25-69. Filed 8-7-67.

869,258. CMF (DESIGN). Constructions Metalliques Fillod. SN 286,510. Pub. 2-25-69. Filed 12-8-67.

869,259. COSTYE. Costain Concrete Co. Limited. SN 288,006. Pub. 2-25-69. Filed 1-3-68.

869,260. THERMOWALL. Globe Roofing Products Co., Inc. SN 291,864. Pub. 2-25-69. Filed 2-26-68.

869,261. DUAL SEAL AND DESIGN. H & D, Inc. SN 293,925. Pub. 2-25-69. Filed 3-22-68.

869,262. DB AND DESIGN. Dixisteel Buildings Inc. SN 297,278. Pub. 2-25-69. Filed 5-3-68.

869,263. CAMTILE. The Cambridge Tile Manufacturing Company. SN 299,829. Pub. 2-25-69. Filed 6-6-68.

869,264. HILBLOK. Holmes Insulations Ltd. SN 302,839. Pub. 2-25-69. Filed 7-16-68.

869,265. BLOK-TRUS. AA Wire Products Company. SN 305,707. Pub. 2-25-69. Filed 8-22-68.

869,266. UNIWALK. Niles Expanded Metals Company. SN 305,963. Pub. 2-25-69. Filed 8-26-68.

869,267. INSTALOK. Armstrong Cork Company. SN 306,545. Pub. 2-25-69. Filed 9-4-68.

869,268. PITTWRAP. Pittsburgh Corning Corporation. SN 306,588. Pub. 2-25-69. Filed 9-4-68.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

869,269. PATRIARC. Automatic Devices Company. SN 292,670. Pub. 2-25-69. Filed 3-7-68.

869,270. TONKA TOASTER. Minnesota Apollo Corporation. SN 294,954. Pub. 2-25-69. Filed 4-4-68.

Class 14 — Metals and Metal Castings and Forgings

869,271. MAGNAGLIDE. General Magnaplate Corporation. SN 304,460. Pub. 2-25-69. Filed 8-6-68.

Class 16 — Protective and Decorative Coatings

869,272. SPS. Benjamin Moore & Co. SN 270,500. Pub. 2-25-69. Filed 5-2-67.

869,273. GEM LINE TESTED QUALITY AND DESIGN. Modern Products, Inc. SN 273,659. Pub. 2-25-69. Filed 6-12-67.

869,274. LUSTER-FOS. The Chemical Corporation. SN 277,437. Pub. 2-25-69. Filed 8-3-67.

869,275. REMLAC. Sperry Rand Corporation. SN 296,589. Pub. 2-25-69. Filed 4-25-68.

869,276. SLIP-AYD. Daniel Products Company. SN 296,814. Pub. 2-25-69. Filed 4-29-68.

869,277. SUSPEND AYD. Daniel Products Company. SN 296,815. Pub. 2-25-69. Filed 4-29-68.

869,278. VISC-AYD. Daniel Products Company. SN 296,816. Pub. 2-25-69. Filed 4-29-68.

869,279. COPPER-LUX. International Paint Company, Inc. SN 298,805. Pub. 2-25-69. Filed 5-20-68.

869,280. AFLON. Finnaren & Haley, Incorporated. SN 299,451. Pub. 2-25-69. Filed 5-31-68.

Class 17 — Tobacco Products

869,281. DUNHILL ETC. AND DESIGN. Alfred Dunhill Limited. SN 269,839. Pub. 2-25-69. Filed 4-24-67.

869,282. PAUL REVERE ORIGINAL ETC. AND DESIGN. Rembrandt Tobacco Corporation (Overseas) Limited. SN 279,974. Pub. 2-25-69. Filed 8-18-67.

869,283. STRATER'S. R. J. Reynolds Tobacco Company. SN 303,477. Pub. 2-25-69. Filed 7-24-68.

869,284. APPLE AND DESIGN. R. J. Reynolds Tobacco Company. SN 303,482. Pub. 2-25-69. Filed 7-24-68.

869,285. MICKY AND DESIGN. R. J. Reynolds Tobacco Company. SN 303,483. Pub. 2-25-69. Filed 7-24-68.

869,286. MONTECRUZ AND DESIGN. Compania Insular Tabacalera, S.A. SN 306,428. Pub. 2-25-69. Filed 9-3-68.

Class 18 — Medicines and Pharmaceutical Preparations

869,287. 6BG +. Dee Cee Laboratories, Inc. SN 274,719. Pub. 2-25-69. Filed 6-26-67.

869,288. PELSIFOOD. Carnation Company. SN 284,799. Pub. 2-25-69. Filed 11-14-67.

869,289. DUROLIOPAQUE. Michel Guerbet. SN 285,734. Pub. 2-25-69. Filed 11-28-67.

869,290. MANDACON. Conal Pharmaceuticals, Inc. SN 292,080. Pub. 2-25-69. Filed 2-28-68.

Class 19 — Vehicles

869,234. (See Class 6 for this trademark.)

869,291. NAFCO. North American Fiberglass Corporation. SN 266,909. Pub. 2-25-69. Filed 3-16-67.

869,292. TIGERTOW. American Chain & Cable Company, Inc., assignee of Mechanical Handling Systems Inc. MULTIPLE CLASS (Classes 19 and 26). SN 272,532. Pub. 2-25-69. Filed 5-29-67.

869,293. ERMANS. Societe Ermans. SN 285,352. Pub. 2-25-69. Filed 11-21-67.

869,294. IMPERIAL. Milsco Manufacturing Co. SN 286,702. Pub. 2-25-69. Filed 12-11-67.

869,295. SLINGSHOT WHEELIE. Roger A. Fries. SN 293,250. Pub. 2-25-69. Filed 3-14-68.

869,296. MISCELLANEOUS DESIGN. Mid-America Body & Equipment Co., Inc. SN 295,354. Pub. 2-25-69. Filed 4-10-68.

869,297. HALLMARK. Roth-Schlenger, Inc. SN 297,596. Pub. 2-25-69. Filed 5-7-68.

869,298. FINNCLIPPER. Hupen-Schede Horst C. Schede KG. SN 298,448. Pub. 2-25-69. Filed 5-17-68.

869,299. SPORT-CRAFT AND DESIGN. Sport-Craft, Inc. SN 299,253. Pub. 2-25-69. Filed 5-28-68.

869,300. GRANTURISTE. Caveman Camper, Inc. SN 299,274. Pub. 2-25-69. Filed 5-29-68.

869,301. FREEDCO AND DESIGN. Freedco Products, Inc. MULTIPLE CLASS (Classes 19, 23, and 31). SN 300,151. Pub. 2-25-69. Filed 6-17-68.

869,302. III (DESIGN). Irvin Industries, Inc. SN 300,357. Pub. 2-25-69. Filed 6-13-68.

869,303. "MOON"-BAR. The Troxel Manufacturing Company. SN 301,560. Pub. 2-25-69. Filed 6-27-68.

869,304. THINLINE. Universal Oil Products Company, d.b.a. UOP Bostrom Division. SN 301,657. Pub. 2-25-69. Filed 6-28-68.

869,305. NATIONAL MOBILE HOMES. National Homes Corporation. SN 302,197. Pub. 2-25-69. Filed 7-8-68.

869,306. WILCOX-CRITTENDEN WC ETC. AND DESIGN. North & Judd Manufacturing Company. SN 308,393. Pub. 2-25-69. Filed 9-27-68.

Class 20 — Linoleum and Oiled Cloth

869,307. COLOR TILE SUPERMARTS AND DESIGN. Color Tile of Colorado, Inc. SN 275,834. Pub. 2-25-69. Filed 7-12-67.

Class 21 — Electrical Apparatus, Machines, and Supplies

869,234. (See Class 6 for this trademark.)

869,308. CROWN. Crown Radio Corporation. SN 152,500. Pub. 2-25-69. Filed 9-5-62.

869,309. STEREO BEACON AND DESIGN. Fisher Radio Corporation. SN 158,965. Pub. 2-25-69. Filed 12-12-62.

869,310. COLORGUARD AND DESIGN. Sears, Roebuck and Co. SN 235,128. Pub. 2-25-69. Filed 12-22-65.

869,311. TRANS-VIDEO AND DESIGN. Trans-Lux Corporation. SN 258,266. Pub. 2-25-69. Filed 11-8-66.

869,312. PROOFLITE. Macbeth Corporation. SN 262,047. Pub. 2-25-69. Filed 1-6-67.

869,313. UTI. Uthe Technology, Inc. SN 277,485. Pub. 2-25-69. Filed 8-3-67.

869,314. ECC AND DESIGN. Electronic Control Corporation. MULTIPLE CLASS (Classes 21 and 34). SN 279,129. Pub. 2-25-69. Filed 8-28-67.

869,315. JECO. Jeco Company, Limited. MULTIPLE CLASS (Classes 21 and 36). SN 282,092. Pub. 2-25-69. Filed 10-9-67.

869,316. BELL AND DESIGN. Bell Electric Co. SN 285,968. Pub. 2-25-69. Filed 12-1-67.

869,317. TWINTRON. HB Engineering Corporation. SN 287,158. Pub. 2-25-69. Filed 12-18-67.

869,318. B AND CIRCLE DESIGN. Burroughs Corporation. SN 289,166. Pub. 2-25-69. Filed 1-19-68.

869,319. BURROUGHS. Burroughs Corporation. SN 289,167. Pub. 2-25-69. Filed 1-19-68.

869,320. TOPFLITE. Ashland Oil & Refining Company. SN 289,762. Pub. 2-25-69. Filed 1-29-68.

869,321. "THE RIGHT CONNECTION." Electric Cord Sets, Inc. SN 296,675. Pub. 2-25-69. Filed 4-26-68.

869,322. XP-15. Fisher Radio Corporation. SN 299,664. Pub. 2-25-69. Filed 6-4-68.

869,323. TEAM. Team Central Incorporated. MULTIPLE CLASS (Classes 21, 23, 26, and 34). SN 299,815. Pub. 2-25-69. Filed 6-6-68.

869,324. STRIPTROL. CTS Corporation. SN 299,897. Pub. 2-25-69. Filed 6-7-68.

869,325. ELECTRO-BRITE. Fedtro, Inc. SN 310,278. Pub. 2-25-69. Filed 10-23-68.

Class 22 — Games, Toys, and Sporting Goods

869,326. PANTHERMATIC. Edison Giocattoli di Ferri Giampiero e Marinai Jori. SN 262,413. Pub. 2-25-69. Filed 1-12-67.

869,327. DESCO. Diving Equipment & Supply Co., Inc. MULTIPLE CLASS (Classes 22 and 23). SN 274,021. Pub. 2-25-69. Filed 6-16-67.

869,328. WHITMAN AND DESIGN. Whitman Publishing Company. SN 275,095. Pub. 2-25-69. Filed 6-29-67.

869,329. SNUGGIE. Mervyn Watts Ozier. MULTIPLE CLASS (Classes 22, 37, and 42). SN 278,554. Pub. 2-25-69. Filed 8-18-67.

869,330. TUMBLE STONES. Rapaport Brothers, Inc. SN 282 208. Pub. 2-25-69. Filed 10-10-67.

869,331. HI LO SPLIT. James A. Smith. SN 283,935. Pub. 2-25-69. Filed 11-1-67.

869,332. POTATO DUMPLING WEAPON. O. & M. Hausser. SN 286,525. Pub. 2-25-69. Filed 12-8-67.

869,333. TOUCHDOWN USA. B. and H. Enterprises of Euless. SN 288,594. Pub. 2-25-69. Filed 1-11-68.

869,334. NEWFOOTY. Peter Arthur Adolph. SN 291,820. Pub. 2-25-69. Filed 2-26-68.

869,335. GRANNY GOODFOX. Granny Goodfox. SN 294,933. Pub. 2-25-69. Filed 4-4-68.

869,336. MISCELLANEOUS DESIGN. Blazon, Inc. SN. 295,100. Pub. 2-25-69. Filed 4-8-68.

869,337. FEDERAL. Federal Machine Corp. SN 296,136. Pub. 2-25-69. Filed 4-22-68.

869,338. RANDY AQUA-SPORT. Randolph Manufacturing Co., Inc. (Delaware corporation), assignee of Randolph Manufacturing Co., Inc. (Massachusetts corporation). SN 296,231. Pub. 2-25-69. Filed 4-23-68.

869,339. WIN-A-CARD. Milton Bradley Company. SN 296,301. Pub. 2-25-69. Filed 4-23-68.

869,340. GO BACK. Milton Bradley Company. SN 296,303. Pub. 2-25-69. Filed 4-23-68.

869,341. MAULER. Ziegler Tackle Company. SN 300,767. Pub. 2-25-69. Filed 6-18-68.

869,342. GEN-FLYTE AND DESIGN. The General Tire & Rubber Company. SN 300,926. Pub. 2-25-69. Filed 6-20-68.

869,343. WEE WEATHERCASTER AND DESIGN. National Educational Aids, Inc. SN 300,955. Pub. 2-25-69. Filed 6-20-68.

869,344. WEE WEATHER WATCH AND DESIGN. National Educational Aids, Inc. SN 300,956. Pub. 2-25-69. Filed 6-20-68.

869,345. PLUMPEE. Uneeda Doll Co., Inc. SN 301,478. Pub. 2-25-69. Filed 6-26-68.

869,346. STERLING. Sterling Automotive Mfg. Co., Inc. SN 301,648. Pub. 2-25-69. Filed 6-28-68.

869,347. TRAVEL-PAK. Brunswick Corporation. SN 301,909. Pub. 2-25-69. Filed 7-3-68.

869,348. SAFARI. Mattel, Inc. SN 308,970. Pub. 2-25-69. Filed 10-7-68.

869,349. GREENIE-MEENIE. Mattel, Inc. SN. 308,972. Pub. 2-25-69. Filed 10-7-68.

869,350. PURPLE-GURPLE. Mattel, Inc. SN 308,973. Pub. 2-25-69. Filed 10-7-68.

869,351. BEAUTY FAIR. Mattel, Inc. SN 308,989. Pub. 2-25-69. Filed 10-7-68.

869,352. BABOONY. Mattel, Inc. SN 308,992. Pub. 2-25-69. Filed 10-7-68.

869,353. YELLO-FELLO. Mattel, Inc. SN 308,993. Pub. 2-25-69. Filed 10-7-68.

869,354. CALLISTO. Mattel, Inc. SN 308,994. Pub. 2-25-69. Filed 10-7-68.

869,355. EUROPA. Mattel, Inc. SN 308,995. Pub. 2-25-69. Filed 10-7-68.

869,356. MR. M. Mattel, Inc. SN 310,400. Pub. 2-25-69. Filed 10-24-68.

869,357. ROSESTONE. Mattel, Inc. SN 310,401. Pub. 2-25-69. Filed 10-24-68.

869,358. JOGGLES. Mattel, Inc. SN 310,403. Pub. 2-25-69. Filed 10-24-68.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

869,234. (See Class 6 for this trademark.)

869,235. (See Class 6 for this trademark.)

869,301. (See Class 19 for this trademark.)

869,323. (See Class 21 for this trademark.)

869,327. (See Class 22 for this trademark.)

869,359. ZEFEX. Zefex, Inc. SN 289,099. Pub. 2-25-69. Filed 2-17-66.

869,360. NATIONAL. National Twist Drill & Tool Co. (Delaware corporation), assignee of National Twist Drill & Tool Co. (Michigan corporation). MULTIPLE CLASS (Classes 23 and 26). SN 264,568. Pub. 2-25-69. Filed 2-13-67.

869,361. MULTI-MATIC. United States Machinery, Inc. SN 279,881. Pub. 2-25-69. Filed 9-7-67.

869,362. SUPER-FOG. H. D. Hudson Manufacturing Company. SN 279,945. Pub. 2-25-69. Filed 9-8-67.

869,363. FTF. Ateliers Roannais de Constructions Textiles, S.A. SN 285,303. Pub. 2-25-69. Filed 11-21-67.

869,364. VERSITRON. Versitron, Inc. SN 286,050. Pub. 2-25-69. Filed 12-1-67.

869,365. FLOAT PLANE. Reynolds Research & Manufacturing Corp. SN 286,722. Pub. 2-25-69. Filed 12-11-67.

869,366. TERRAIN MASTER. Bombardier Limited. SN 289,001. Pub. 2-25-69. Filed 1-17-68.

869,367. B AND CIRCLE DESIGN. Burroughs Corporation. SN 289,165. Pub. 2-25-69. Filed 1-19-68.

869,368. HELIMINER. Jeffrey Galion Manufacturing Company. SN 289,692. Pub. 2-25-69. Filed 1-26-68.

869,369. HUBER. Huber Corporation. SN 292,379. Pub. 2-25-69. Filed 3-4-68.

869,370. COLLEEN. Colleen Pencil Co., Ltd. MULTIPLE CLASS (Classes 23 and 37). SN 293,110. Pub. 2-25-69. Filed 3-13-68.

869,371. HEAD DESIGN. Colleen Pencil Co., Ltd. MULTIPLE CLASS (Classes 23 and 37). SN 293,111. Pub. 2-25-69. Filed 3-13-68.

869,372. VIBRA-TRAC. Rosco Manufacturing Company. SN 294,413. Pub. 2-25-69. Filed 3-28-68.

869,373. SABER PLOW. Koehring Company. SN 294,739. Pub. 2-25-69. Filed 4-2-68.

869,374. TOWLE. Towle Manufacturing Company. SN 297,815. Pub. 2-25-69. Filed 5-9-68.

869,375. FROG HORN. Woolsey Marine Industries, Inc. SN 302,164. Pub. 2-25-69. Filed 7-5-68.

869,376. ACE. Montrose Oil & Belting Co. Inc., d.b.a. Montrose Supply & Equipment Co. SN 304,557. Pub. 2-25-69. Filed 8-7-68.

Class 24 — Laundry Appliances and Machines

869,377. MONDAY'S MAID. Monday's Maid, Inc. SN 297,305. Pub. 2-25-69. Filed 5-3-68.

Class 26 — Measuring and Scientific Appliances

869,292. (See Class 19 for this trademark.)

869,323. (See Class 21 for this trademark.)

869,360. (See Class 23 for this trademark.)

869,378. RATER. General Dynamics Corporation. SN 254,271. Pub. 2-25-69. Filed 9-12-66.

869,379. FORM-O-TYPE. Firma Dirk Strobbe PVBA, SN 267,326. Pub. 2-25-69. Filed 3-22-67.

869,380. VIRTIS. The Virtis Company, Inc. SN 283,292. Pub. 2-25-69. Filed 10-24-67.

869,381. REMINGTON. Sperry Rand Corporation. SN 288,360. Pub. 2-25-69. Filed 1-8-68.

869,382. SEW-KNIT-N-STRETCH. Sew-Knit-N-Stretch, Inc. SN 300,847. Pub. 2-25-69. Filed 6-19-68.

869,383. ADJUSTA-CHROM. Ace Glass Incorporated. SN 302,477. Pub. 2-25-69. Filed 7-11-68.

869,384. 3-D WHEEL-O-RAMA. Sid Brawer, d.b.a. Tri-Ads Company. SN 307,264. Pub. 2-25-69. Filed 9-13-68.

869,385. 3M. Minnesota Mining and Manufacturing Company. SN 311,445. Pub. 2-25-69. Filed 11-6-68.

Class 27 — Horological Instruments

869,386. RICHEMOND. Endura Time Corporation. SN 295,926. Pub. 2-25-69. Filed 4-18-68.

869,387. RETCO. Retteen Jewelry, Incorporated. MULTIPLE CLASS (Classes 27 and 28). SN 306,708. Pub. 2-25-69. Filed 9-6-68.

Class 28 — Jewelry and Precious-Metal Ware

869,387. (See Class 27 for this trademark.)

869,388. AMU. Adolf Merath. SN 297,429. Pub. 2-25-69. Filed 5-6-68.

869,389. JUDITH MCCANN DESIGNS. Wingback Inc. SN 301,868. Pub. 2-25-69. Filed 7-2-68.

869,390. DATE FINDER. Textron Inc. SN 305,084. Pub. 2-25-69. Filed 8-13-68.

869,391. AS AND DESIGN. Aro-Sac Inc. SN 305,392. Pub. 2-25-69. Filed 8-19-68.

Class 29 — Brooms, Brushes, and Dusters

869,392. PRO-SCRUB. Sorenson Research Corporation. SN 302,980. Pub. 2-25-69. Filed 7-17-68.

Class 31 — Filters and Refrigerators

869,235. (See Class 6 for this trademark.)

869,301. (See Class 19 for this trademark.)

869,393. REPP. The Virtis Company, Inc. SN 283,291. Pub. 2-25-69. Filed 10-24-67.

869,394. SNOW BIRD AND DESIGN. Snowbird Refrigeration Company. SN 301,365. Pub. 2-25-69. Filed 6-25-68.

Class 32 — Furniture and Upholstery

869,395. SP-A-C-E-MAKER AND DESIGN. The Englander Company, Inc. SN 285,126. Pub. 2-25-69. Filed 11-17-67.

869,396. HOM-E-QUIP. Edsal Manufacturing Company, Inc., d.b.a. Home-E-Quip Consumer Products Division. SN 307,634. Pub. 2-25-69. Filed 9-18-68.

Class 33 — Glassware

869,397. L-BUK. American Saint Gobain Corporation. SN 305,028. Pub. 2-25-69. Filed 8-13-68.

869,398. THE PARTY STARTER. Anchor Hocking Glass Corporation. SN 306,448. Pub. 2-25-69. Filed 9-3-68.

Class 34 — Heating, Lighting, and Ventilating Apparatus

869,314. (See Class 21 for this trademark.)

869,323. (See Class 21 for this trademark.)

869,399. DYE NAMIC. Dye Oxygen Company. SN 301,614. Pub. 2-25-69. Filed 6-28-68.

869,400. BORN. Born Engineering Company. SN 302,034. Pub. 2-25-69. Filed 7-5-68.

869,401. ALUMISTE. Thomas Lightfoot Maguire. SN 302,745. Pub. 2-25-69. Filed 7-15-68.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

869,234. (See Class 6 for this trademark.)

869,402. DUO-250. Ramsey Corporation. SN 299,862. Pub. 2-25-69. Filed 6-6-68.

869,403. SPARE-AIR. Deupree Industries, Inc. SN 306,356. Pub. 2-25-69. Filed 8-30-68.

Class 36 — Musical Instruments and Supplies

869,315. (See Class 21 for this trademark.)

869,404. PM PLEASURE MATE AND DESIGN. Maurice C. Killenbeck. SN 291,079. Pub. 2-25-69. Filed 2-14-68.

869,405. CLOVERLAY. Cloverlay, Inc. SN 298,425. Pub. 2-25-69. Filed 5-17-68.

869,406. OLLY-O. Newport-Opti-Sonics Company. SN 307,853. Pub. 2-25-69. Filed 9-20-68.

Class 37 — Paper and Stationery

869,213. (See Class 2 for this trademark.)

869,329. (See Class 22 for this trademark.)

869,370. (See Class 23 for this trademark.)

869,371. (See Class 23 for this trademark.)

869,407. ACCUCHART. Clevite Corporation. SN 284,164. Pub. 2-25-69. Filed 11-6-67.

869,408. STRIPKOTE. Scott Paper Company. SN 285,945. Pub. 2-25-69. Filed 11-30-67.

869,409. LILL-O-GRAM. Lillian Mitchell. SN 297,081. Pub. 2-25-69. Filed 5-1-68.

869,410. CAGEY CRITTERS. Hallmark Cards, Incorporated. MULTIPLE CLASS (Classes 37 and 38). SN 298,987. Pub. 2-25-69. Filed 5-24-68.

869,411. LAB-PEN. Scripto, Inc. SN 299,499. Pub. 2-25-69. Filed 5-31-68.

869,412. KARMA. The Northwest Paper Company. SN 299,694. Pub. 2-25-69. Filed 6-4-68.

869,413. SPARKLEPAQUE. French Paper Company. SN 299,969. Pub. 2-25-69. Filed 6-7-68.

869,414. WAL-LOK. Wallace Business Forms, Inc. SN 310,290. Pub. 2-25-69. Filed 10-23-68.

Class 38 — Prints and Publications

869,410. (See Class 37 for this trademark.)

869,415. WAYFARING NEW ADVENTURES IN TRAVEL. Travel Media International Ltd. SN 262,643. Pub. 12-24-68. Filed 1-16-67.

869,416. SOS AND DESIGN. Herold Overseas Publishing Corporation, assignee of Deutscher Herold Verlag und Pressedienst GmbH. SN 269,521. Pub. 2-25-69. Filed 4-19-67.

869,417. ANI ETC. AND DESIGN. Agricultural Nitrogen Institute. SN 278,356. Pub. 2-25-69. Filed 8-16-67.

869,418. MICHIGAN HISTORY. Michigan Historical Commission. SN 278,980. Pub. 2-25-69. Filed 8-24-67.

869,419. STANDARD & POOR'S EARNINGS FORECASTER. Standard & Poor's Corporation. SN 280,820. Pub. 2-25-69. Filed 9-20-67.

869,420. COPIMOUNT. Jostens, Inc. SN 295,149. Pub. 2-25-69. Filed 4-8-68.

869,421. COMMONLIFE. Board of Publication of the Methodist Church, Inc., d.b.a. The Graded Press. SN 306,016. Pub. 2-25-69. Filed 8-22-68.

869,422. YOUTH LEADER. Board of Publication of the Methodist Church, Inc., d.b.a. Graded Press. SN 306,628. Pub. 2-25-69. Filed 9-5-68.

869,423. FACE TO FACE. Board of Publication of the Methodist Church, Inc., d.b.a. Graded Press. SN 306,629. Pub. 2-25-69. Filed 9-5-68.

869,424. ACCENT ON YOUTH. Board of Publication of the Methodist Church, Inc., d.b.a. Graded Press. SN 306,630. Pub. 2-25-69. Filed 9-5-68.

869,425. PICKLED TINK. Norcross, Inc. SN 307,344. Pub. 2-25-69. Filed 9-13-68.

869,426. OLLY-O. Newport Opti-Sonics Company. SN 307,855. Pub. 2-25-69. Filed 9-20-68.

869,427. LAM-O-TEX. American Map Company, Inc. SN 309,008. Pub. 2-25-69. Filed 10-7-68.

Class 39 — Clothing

869,213. (See Class 2 for this trademark.)

869,234. (See Class 6 for this trademark.)

869,428. WILSON AND DESIGN. Wilson Sporting Goods Co., assignee of Wilson Sporting Goods Co. SN 273,143. Pub. 2-25-69. Filed 6-5-67.

869,429. ADJ-L. Angelica Corporation, by change of name from Angelica Uniform Company. SN 276,521. Pub. 2-25-69. Filed 7-21-67.

869,430. INVERTERE. Invertère Coat Company Limited. SN 279,772. Pub. 2-25-69. Filed 8-7-67.

869,431. ACHILLES AND DESIGN. Kohkoku Chemical Industry Co., Ltd. SN 280,284. Pub. 2-25-69. Filed 9-13-67.

869,432. EMANUEL UNGARO PARALLELE. Emanuel Ungaro, Société a Responsabilité Limitée. SN 282,556. Pub. 2-25-69. Filed 10-16-67.

869,433. ROOSTER. Rooster, Inc. SN 282,658. Pub. 2-25-69. Filed 10-17-67.

869,434. ROOSTER AND DESIGN. Rooster, Inc. SN 282,659. Pub. 2-25-69. Filed 10-17-67.

869,435. DESIGN OF HEAD OF ROOSTER. Rooster, Inc. SN 282,660. Pub. 2-25-69. Filed 10-17-67.

869,436. CHICKEN LITTLE BY ROOSTER AND DESIGN. Rooster, Inc. SN 282,755. Pub. 2-25-69. Filed 10-18-67.

869,437. SLIM GILLUMS. The Grove Company. SN 288,015. Pub. 2-25-69. Filed 1-3-68.

869,438. RAYMODES. The Villager, Inc. SN 296,223. Pub. 2-25-69. Filed 4-22-68.

869,439. FULURA. S. Augstein & Co., Inc. SN 296,500. Pub. 2-25-69. Filed 4-25-68.

869,440. STROBE. Bob Roy Company, Inc. SN 296,985. Pub. 2-25-69. Filed 4-30-68.

869,441. STUFFED SHIRT AND DESIGN. Philip Rothenberg & Co., Inc. SN 302,342. Pub. 2-25-69. Filed 7-9-68.

869,442. POINTS EAST. Points East Sportswear, Inc. SN 303,442. Pub. 2-25-69. Filed 7-23-68.

869,443. FUR GIRL. The Tailored Woman, Inc. SN 306,519. Pub. 2-25-69. Filed 9-3-68.

869,444. TOPAZOS AND DESIGN. Topaz Hosiery Mills, Inc. SN 309,118. Pub. 2-25-69. Filed 10-7-68.

Class 40 — Fancy Goods, Furnishings, and Notions

869,445. BEAUTYFALL. Robeco Products Inc. SN 297,440. Pub. 2-25-69. Filed 5-6-68.

869,446. CURLS GALORE. Fashion Tress, Inc. SN 301,807. Pub. 2-25-69. Filed 7-2-68.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

869,329. (See Class 22 for this trademark.)

Class 44 — Dental, Medical, and Surgical Appliances

869,447. DRAEGEROLITH. Drägerwerk, Heinr. & Bernh Dräger. SN 284,176. Pub. 2-18-69. Filed 11-6-67.

869,448. HEART REACTIVATOR AND A DESIGN. American Safety Equipment Corporation. SN 286,076. Pub. 2-25-69. Filed 12-4-67.

869,449. COSMETRICS. The Scholl Mfg. Co., Inc. MULTIPLE CLASS (Classes 44 and 51). SN 287,610. Pub. 2-25-69. Filed 12-27-67.

869,450. SCHICK. Schick Electric Inc. SN 289,212. Pub. 2-25-69. Filed 1-19-68.

869,451. BEAUTYBUG. Caryl Richards, Inc. SN 295,173. Pub. 2-25-69. Filed 4-8-68.

869,452. APIS AND DESIGN. Dr. Peter Endres. SN 307,319. Pub. 2-25-69. Filed 9-13-68.

869,453. EZETTES. Denver Chemical Manufacturing Company. SN 308,947. Pub. 2-25-69. Filed 10-7-68.

Class 46 — Foods and Ingredients of Foods

869,454. PILLSBURY ETC. AND DESIGN. The Pillsbury Company. SN 261,676. Pub. 2-25-69. Filed 12-29-66.

869,455. MB (DESIGN). Martin-Brower Corporation. SN 268,972. Pub. 2-25-69. Filed 4-12-67.

869,456. PEAK. Sigman Meat Company, Inc. SN 278,738. Pub. 2-25-69. Filed 8-21-67.

869,457. BEE HIVE DESIGN. B. Sprengel & Co. SN 279,870. Pub. 2-25-69. Filed 9-7-67.

869,458. FROLIC. National Biscuit Company. SN 288,970. Pub. 2-25-69. Filed 1-16-68.

869,459. SOLDIER HEAD DESIGN. General Foods Corporation. SN 291,862. Pub. 2-25-69. Filed 2-26-68.

869,460. MEXI-TREATS. Alroy Packing Co. SN 293,453. Pub. 2-25-69. Filed 3-18-68.

869,461. SIMPLOT AND DESIGN. J. R. Simplot Company. SN 296,622. Pub. 2-25-69. Filed 4-26-68.

869,462. MORVOL. Armour and Company. SN 302,582. Pub. 2-25-69. Filed 7-12-68.

869,463. HAPP'NINS. A. H. Robins Company, Incorporated. SN 302,969. Pub. 2-25-69. Filed 7-17-68.

869,464. HONCHOS. A. H. Robins Company, Incorporated. SN 302,970. Pub. 2-25-69. Filed 7-17-68.

869,465. WRAPPER DESIGN. Amurol Products Company. SN 303,027. Pub. 2-25-69. Filed 7-18-68.

869,466. "BRISK." Thomas J. Lipton, Inc. SN 308,956. Pub. 2-25-69. Filed 10-7-68.

869,467. BIG STICK. Consolidated Foods Corporation, d.b.a. Joe Lowe Company. SN 309,139. Pub. 2-25-69. Filed 10-8-68.

869,468. LARD-PLUS-BRAND. The Theobald Industries. SN 309,526. Pub. 2-25-69. Filed 10-14-68.

Class 47 — Wines

869,469. ASSUMPTION ABBEY AND DESIGN. Brookside Vineyard Company, d.b.a. Assumption Abbey Winery. SN 294,719. Pub. 2-25-69. Filed 4-2-68.

869,470. DUVAL AND DESIGN. Pastis Duval S.A., d.b.a. Ancienne Maison F. Duval Successeurs de Dubied Pere et Fils. SN 295,761. Pub. 2-25-69. Filed 4-16-68.

Class 49 — Distilled Alcoholic Liquors

869,471. ETCHART AND DESIGN. Jean Etchart. SN 289,389. Pub. 2-25-69. Filed 1-23-68.

Class 50 — Merchandise Not Otherwise Classified

869,472. UNIQUE AND DESIGN. United Import Corporation. SN 265,361. Pub. 2-25-69. Filed 2-23-67.

869,473. PLANT MOBILE. Jewel Aquarium Co., Inc. SN 304,440. Pub. 2-25-69. Filed 8-6-68.

Class 51 — Cosmetics and Toilet Preparations

869,449. (See Class 44 for this trademark.)

869,474. SOUL SISTER. Stacy, Inc. SN 296,880. Pub. 2-25-69. Filed 4-29-68.

869,475. LANDER. Lander Co., Inc. (Delaware corporation), assignee of Lander Co., Inc. (New York corporation). MULTIPLE CLASS (Classes 51 and 52). SN 297,334. Pub. 2-11-69. Filed 5-6-68.

869,476. SHEER DELIGHT. Roux Laboratories, Inc. SN 297,806. Pub. 2-25-69. Filed 5-9-68.

869,477. NOW. Avon Products, Inc. SN 298,398. Pub. 2-25-69. Filed 5-17-68.

869,478. IN THE PINK. Avon Products, Inc. SN 298,407. Pub. 2-25-69. Filed 5-17-68.

869,479. PASTORALE. Avon Products, Inc. SN 298,536. Pub. 2-25-69. Filed 5-20-68.

869,480. SILENT WOODS. Avon Products, Inc. SN 298,538. Pub. 2-25-69. Filed 5-20-68.

869,481. WISTFUL. Avon Products, Inc. SN 298,542. Pub. 2-25-69. Filed 5-20-68.

869,482. GLOAMING. Avon Products, Inc. SN 298,553. Pub. 2-25-69. Filed 5-20-68.

869,483. ORACLE. Avon Products, Inc. SN 298,557. Pub. 2-25-69. Filed 5-20-68.

869,484. OBSIDIAN. Bristol-Myers Company. SN 298,797. Pub. 2-25-69. Filed 5-22-68.

869,485. FREE HAND. Bristol-Myers Company. SN 299,211. Pub. 2-25-69. Filed 5-28-68.

869,486. AT HOME. Bristol-Myers Company. SN 299,212. Pub. 2-25-69. Filed 5-28-68.

869,487. COBRA. Bristol-Myers Company. SN 299,213. Pub. 2-25-69. Filed 5-28-68.

869,488. NIGHT SOUNDS. Avon Products, Inc. SN 299,311. Pub. 2-25-69. Filed 5-29-68.

869,489. SKY LANTERNS. Avon Products, Inc. SN 299,314. Pub. 2-25-69. Filed 5-29-68.

869,490. INTAN. Bishop Industries Inc. SN 300,419. Pub. 2-25-69. Filed 6-14-68.

869,491. BACCHUS. Chas. Pfizer & Co., Inc., assignee of Bergdorf & Goodman Company. SN 300,548. Pub. 2-25-69. Filed 6-17-68.

869,492. ART DENT AND DESIGN. Arthur C. Dunkle, d.b.a. Art Dent Co. SN 300,693. Pub. 2-25-69. Filed 6-18-68.

869,493. THROUGH THE LOOKING GLASS. Avon Products, Inc. SN 301,151. Pub. 2-25-69. Filed 6-24-68.

869,494. WILLOW SIGH. Avon Products, Inc. SN 301,153. Pub. 2-25-69. Filed 6-24-68.

869,495. MACH III. Avon Products, Inc. SN 301,159. Pub. 2-25-69. Filed 6-24-68.

869,496. MOST OF ALL. Avon Products, Inc. SN 301,165. Pub. 2-25-69. Filed 6-24-68.

869,497. PATTERNS. Avon Products, Inc. SN 301,170. Pub. 2-25-69. Filed 6-24-68.

869,498. FERNERIE. Avon Products, Inc. SN 301,173. Pub. 2-25-69. Filed 6-24-68.

869,499. LITTLE CHARMER. Avon Products, Inc. SN 301,177. Pub. 2-25-69. Filed 6-24-68.

869,500. TIMELESS. Avon Products, Inc. SN 301,180. Pub. 2-25-69. Filed 6-24-68.

869,501. LIGHT'NING BUG. Alberto-Culver Company. SN 302,263. Pub. 2-25-69. Filed 7-9-68.

869,502. LIGHT'NING BUG. Alberto-Culver Company. SN 302,264. Pub. 2-25-69. Filed 7-9-68.

869,503. ESTEE. Estee Lauder, Incorporated. SN 304,069. Pub. 2-25-69. Filed 8-1-68.

869,504. BEAUTY THINGS. Richard Hudnut. SN 304,227. Pub. 2-25-69. Filed 8-2-68.

869,505. BEAU BRECK. John H. Breck, Inc. SN 305,525. Pub. 2-25-69. Filed 8-20-68.

Class 52 — Detergents and Soaps

869,475. (See Class 51 for this trademark.)

869,506. FORMULA X-111. Amerace Corporation, assignee of Patek & Co. SN 282,621. Pub. 2-25-69. Filed 10-16-67.

869,507. ULTRA GUARD. Southwest Grease & Oil Co. (Kansas City), Inc., d.b.a. Ultra Guard Products Co. SN 283,728. Pub. 2-25-69. Filed 10-30-67.

869,508. GARBATE. Madison Chemical Corporation. SN 294,633. Pub. 2-25-69. Filed 4-1-68.

869,509. SHOOT! Madison Chemical Corporation. SN 294,634. Pub. 2-25-69. Filed 4-1-68.

869,510. ORACLE. Avon Products, Inc. SN 298,535. Pub. 2-25-69. Filed 5-20-68.

869,511. PASTORALE. Avon Products, Inc. SN 298,537. Pub. 2-25-69. Filed 5-20-68.

869,512. SILENT WOODS. Avon Products, Inc. SN 298,539. Pub. 2-25-69. Filed 5-20-68.

869,513. WISTFUL. Avon Products, Inc. SN 298,543. Pub. 2-25-69. Filed 5-20-68.

869,514. GLOAMING. Avon Products, Inc. SN 298,554. Pub. 2-25-69. Filed 5-20-68.

869,515. BIOKES. Kortman & Schulte N.V. SN 298,731. Pub. 2-25-69. Filed 5-21-68.

869,516. CLC. Lobob Laboratories. SN 298,735. Pub. 2-25-69. Filed 5-21-68.

869,517. OBSIDIAN. Bristol-Myers Company. SN 299,208. Pub. 2-25-69. Filed 5-28-68.

869,518. SEA WILLOW. Avon Products, Inc. SN 299,300. Pub. 2-25-69. Filed 5-29-68.

869,519. THROUGH THE LOOKING GLASS. Avon Products, Inc. SN 301,152. Pub. 2-25-69. Filed 6-24-68.

869,520. WILLOW SIGH. Avon Products, Inc. SN 301,154. Pub. 2-25-69. Filed 6-24-68.

869,521. HUMORESQUE. Avon Products, Inc. SN 301,156. Pub. 2-25-69. Filed 6-24-68.

869,522. MACH III. Avon Products, Inc. SN 301,160. Pub. 2-25-69. Filed 6-24-68.

869,523. MAINSTREAM. Avon Products, Inc. SN 301,164. Pub. 2-25-69. Filed 6-24-68.

869,524. MOST OF ALL. Avon Products, Inc. SN 301,166. Pub. 2-25-69. Filed 6-24-68.

869,525. PATTERNS. Avon Products, Inc. SN 301,171. Pub. 2-25-69. Filed 6-24-68.

869,526. FERNERIE. Avon Products, Inc. SN 301,174. Pub. 2-25-69. Filed 6-24-68.

869,527. LITTLE CHARMER. Avon Products, Inc. SN 301,178. Pub. 2-25-69. Filed 6-24-68.

Service Marks

Class 100 — Miscellaneous

869,528. STELMOR. Morgan Construction Company. SN 266,837. Pub. 2-25-69. Filed 3-16-67.

869,529. PICTURE DESIGN. We Sit Better, Inc. SN 271,740. Pub. 2-25-69. Filed 5-17-67.

869,530. WE SIT BETTER AND PICTURE DESIGN. We Sit Better, Inc. SN 271,741. Pub. 2-25-69. Filed 5-17-67.

869,531. ACCURAY. Industrial Nucleonics Corporation. SN 279,832. Pub. 2-25-69. Filed 9-7-67.

869,532. VALLE'S. Valle's Steak House. SN 290,115. Pub. 2-25-69. Filed 2-1-68.

Class 101 — Advertising and Business

869,533. REACTS. HMH Publishing Co., Inc. SN 264,822. Pub. 2-25-69. Filed 2-16-67.

869,534. EA AND DESIGN. The Reynolds & Reynolds Company. SN 286,037. Pub. 2-25-69. Filed 12-1-67.

869,535. R. Inmark, Inc. SN 301,886. Pub. 2-25-69. Filed 7-3-68.

Class 102 — Insurance and Financial

869,536. MISCELLANEOUS DESIGN. AMCAP Fund, Inc. SN 279,996. Pub. 2-25-69. Filed 9-11-67.

869,537. FANCIFUL SKYLINE DESIGN. Manhattan Fund, Inc. SN 292,592. Pub. 2-25-69. Filed 3-6-68.

869,538. FANCIFUL SKYLINE DESIGN. Manhattan Fund, Inc. SN 292,593. Pub. 2-25-69. Filed 3-6-68.

869,539. MI-BANKARD "GOOD AS GOLD." The First National Bank of Tullahoma. SN 301,217. Pub. 2-25-69. Filed 6-24-68.

869,540. HERALD LIFE ETC. AND DESIGN. Herald Life Insurance Company. SN 306,842. Pub. 2-25-69. Filed 9-9-68.

869,541. RR AND DESIGN. Rosenthal & Rosenthal, Inc. SN 311,546. Pub. 2-25-69. Filed 11-7-68.

Class 103 — Construction and Repair

869,542. ACCURAY. Industrial Nucleonics Corporation. SN 279,654. Pub. 2–25–69. Filed 9–5–67.

Class 105 — Transportation and Storage

869,543. STYLIZED GA (DESIGN). Gulf Atlantic Warehouse Co. SN 280,052. Pub. 2–25–69. Filed 9–11–67.

Class 106 — Material Treatment

869,544. VERMONT PRINTS. Wilson Sports Equipment Company, Inc., d.b.a. Vermont Prints. SN 289,366. Pub. 2–25–69. Filed 1–22–68.

869,545. DURA-CLAD. Cooper Industries, Inc. SN 291,001. Pub. 2–25–69. Filed 2–14–68.

Class 107 — Education and Entertainment

869,546. PARENTS WITHOUT PARTNERS, INC. Parents Without Partners, Inc. SN 253,548. Pub. 2–25–69. Filed 8–31–66.

869,547. EASY TO DRAW. Romper Room, Inc. SN 266,461. Pub. 2–25–69. Filed 3–10–67.

869,548. MISCELLANEOUS DESIGN. Pepper Sound Studios, Inc., d.b.a. Airplay International. SN 267,974. Pub. 2–25–69. Filed 3–30–67.

869,549. TENNESSEE WALKING HORSE NATIONAL CELEBRATION. Tennessee Walking Horse National Celebration Association. SN 277,955. Pub. 2–25–69. Filed 5–3–67.

869,550. NEW ORLEANS BUCCANEERS. New Orleans Buccaneers, Inc. SN 280,879. Pub. 2–25–69. Filed 9–21–67.

869,551. B AND CIRCLE DESIGN. Burroughs Corporation. SN 295,013. Pub. 2–25–69. Filed 4–5–68.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 37 — Paper and Stationery

869,552. The C. M. Paula Company, Cincinnati, Ohio. SN 276,576. Filed P.R. 7–21–67; Am. S.R. 2–20–69.

PEN 'N PADS

For Paper Pads With Envelopes (Int. Cl. 16).
First use July 14, 1965.

Class 38 — Prints and Publications

869,553. Michael-Myles Advertising, Inc., Northfield, Ill. SN 276,569. Filed P.R. 7–21–67; Am. S.R. 8–22–68.

TOUR-CHEKS

For Coupon Kits Containing Discount Coupons for Use in the Establishment Listed Thereon (Int. Cl. 16).
First use May 24, 1967.

869,554. Communication Seminars, Inc., New York, N.Y. SN 285,309. Filed P.R. 11–21–67; Am. S.R. 2–24–69.

EDUCATIONAL EQUIPMENT AND MATERIALS

For Periodic Magazine (Int. Cl. 16).
First use Oct. 22, 1963.

869,555. Haire Publishing Corporation, New York, N.Y., assignee of Haire Publishing Company, Inc., New York, N.Y. SN 288,309. Filed P.R. 1–8–68; Am. S.R. 1–14–69.

retail MANAGEMENT

For Section of a Monthly Trade Magazine Also Produced for Separate Distribution (Int. Cl. 16).
First use December 1967.

Class 40 — Fancy Goods, Furnishings, and Notions

869,556. Gary B. Standart, d.b.a. Standart Products Co., Phoenix, Ariz. SN 283,938. Filed P.R. 11–1–67; Am. S.R. 10–4–68.

Dr. White's

For Nose Cushions, Paddles—Namely, Rubber Padding To Be Attached to the End of Eye Glass Temples, and Earring Pads (Int. Cl. 26).
First use Oct. 26, 1965.

Class 50 — Merchandise Not Otherwise Classified

869,557. Polychrome Corporation, Yonkers, N.Y. SN 274,458. Filed P.R. 6–21–67; Am. S.R. 1–16–69.

COPPERKOTE

For Presensitized Offset Printing Plates (Int. Cl. 1).
First use as early as Dec. 30, 1966.

TRADEMARK REGISTRATIONS RENEWED

32,235. ATLAS. Cl. 46 (Int. Cl. 29). 12–13–1898.
32,536. NEW SERVICE. Cl. 9 (Int. Cl. 13). 2–21–1899.
71,394. RED CROSS. Cl. 46 (Int. Cl. 29). 11–24–08.
72,856. ATLANTIC. Cl. 43 (Int. Cl. 23). 3–2–09.
72,857. BEDFORD. Cl. 43 (Int. Cl. 23). 4–2–09.
74,306. RAYBESTOS. Cl. 35 (Int. Cl. 12). 6–29–09.

74,371. "GRENADIER" AND REPRESENTATION OF MAN DRINKING BEER. Cl. 48 (Int. Cl. 32). 7–6–09.
74,560. REPRESENTATION OF PORTRAIT OF BOY. Cl. 18 (Int. Cl. 5). 7–20–09.
249,695. FRYENE. Cl. 46 (Int. Cl. 29). 11–20–28.
251,161. DRIPOLATOR. Cl. 13 (Int. Cl. 21). 1–1–29.
251,532. "DI FORGE." Cl. 23 (Int. Cl. 8). 1–8–29.
253,063. "HELPS." Cl. 46 (Int. Cl. 30). 2–19–29.
253,108. "MARQUE DE FABRIQUE" LF AND DESIGN. Cl. 16 (Int. Cl. 2). 2–19–29.
254,554. "ANCHOR" ETC. AND DESIGN. Cl. 35 (Int. Cl. 17). 3–26–29.
254,661. "TEX-WEAR" AND DESIGN. Cl. 39 (Int. Cl. 25). 3–26–29.
254,780. SILVER LEAF. Cl. 52 (Int. Cl. 3). 4–2–29.
255,146. ST. GEORGE. Cl. 39 (Int. Cl. 25). 4–16–29.
255,151. SILVER STEEL. Cl. 23 (Int. Cl. 8). 4–16–29.
255,241. YANG TSE. Cl. 11 (Int. Cl. 16). 4–16–29.
255,803. REDDY. Cl. 45 (Int. Cls. 29 and 32). 4–30–29.
256,028. MINALINE. Cl. 18 (Int. Cl. 5). 5–7–29.
256,392. EMBASSY. Cl. 42 (Int. Cl. 27). 5–14–29.
256,761. "DUNKITS." Cl. 46 (Int. Cl. 30). 5–21–29.
256,970. VELVET. Cl. 46 (Int. Cl. 31). 5–28–29.
258,695. OMICRON. Cl. 12 (Int. Cl. 1). 7–16–29.
258,696. METALICRON. Cl. 12 (Int. Cl. 1). 7–16–29.
259,268. "FEETURE ARCH" AND BACKGROUND DESIGN. Cl. 39 (Int. Cl. 25). 7–30–29.
259,457. SWANK. Cl. 28 (Int. Cls. 8, 14, and 34). 7–30–29.
259,466. "LASSO" AND REPRESENTATION OF LARIAT. Cl. 46 (Int. Cl. 31). 7–30–29.
259,750. PENNTEX. Cl. 35 (Int. Cl. 7). 8–6–29.
260,080. "PETIT BATEAU" ETC. AND DESIGN. Cl. 39 (Int. Cl. 25). 8–13–29.
442,125. RESPONSE. Cl. 51 (Int. Cl. 3). 3–1–49.
442,163. CIRCO. Cl. 15 (Int. Cl. 4). 3–1–49.
442,184. DIXIE. Cl. 35 (Int. Cl. 12). 3–8–49.
442,294. CM. Cl. 23 (Int. Cl. 7). 3–22–49.
442,375. DIAMOND AND DESIGN. Cl. 23 (Int. Cl. 7). 4–5–49.
442,400. TAX TALKS. Cl. 38 (Int. Cl. 16). 4–5–49.
442,466. SCARLET GLOW. Cl. 51 (Int. Cl. 3). 4–12–49.
442,778. WARCOFIX. Cl. 6 (Int. Cl. 2). 5–31–49.
442,817. PANELYTE. Cl. 1 (Int. Cl. 17). 5–31–49.
442,930. ELITE. Cl. 39 (Int. Cl. 25). 6–21–49.
442,940. TAM O'SHANTER. Cl. 39 (Int. Cl. 25). 6–21–49.
442,961. BALDWIN. Cl. 21 (Int. Cl. 9). 6–21–49.
443,150. HOLDSTER. Cl. 23 (Int. Cl. 8). 7–26–49.
503,918. PRECIMAX. Cl. 27 (Int. Cl. 14). 11–16–48.
504,045. METALLO GASKET AND DESIGN. Cl. 35 (Int. Cl. 6). 11–16–48.
504,854. C & NW. Cl. 105 (Int. Cl. 39). 12–14–48.
504,855. CNW. Cl. 105 (Int. Cl. 39). 12–14–48.
505,139. LAKALLOY. Cl. 14 (Int. Cl. 6). 12–28–48.
505,276. BRI-LEA. Cl. 39 (Int. Cl. 25). 12–28–48.
505,731. INLAND. Cl. 35 (Int. Cls. 12 and 17). 1–18–49.
505,732. INLAND AND DESIGN. Cl. 35 (Int. Cls. 12 and 17). 1–18–49.
505,788. THEODORE HARRINGTON CO. Cl. 23 (Int. Cls. 7 and 8). 1–18–49.
506,015. RAJAH. Cl. 46 (Int. Cl. 30). 1–25–49.
506,025. BROCKPORT. Cl. 46 (Int. Cls. 29 and 30). 1–25–49.
506,173. RAJAH. Cl. 46 (Int. Cl. 29). 2–1–49.
506,261. SILVER RAY. Cl. 39 (Int. Cl. 25). 2–1–49.
506,297. ELL-SEE-JAY. Cl. 39 (Int. Cl. 25). 2–1–49.
506,412. VECO. Cl. 22 (Int. Cl. 28). 2–8–49.
506,460. GREEN TOP AND DESIGN. Cl. 35 (Int. Cl. 12). 2–8–49.
506,622. OTSELIC. Cl. 22 (Int. Cl. 28). 2–15–49.
506,738. O. Cl. 6 (Int. Cl. 1). 2–15–49.
506,761. DESIGN OF A PORTRAITURE. Cl. 51 (Int. Cl. 3). 2–15–49.
506,911. DYANSHINE. Cl. 4 (Int. Cl. 3). 2–22–49.
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Cloverlay, Inc., Philadelphia, Pa. 869,405, pub. 2–25–69. Cl. 36.
Cobia, B. L., Inc., Winter Garden, Fla. 869,206, pub. 2–25–69. Cl. 1.
Cohen, Goldman & Co. Inc., New York, N.Y., to House of Worsted-Tex Inc., Philadelphia, Pa. 254,661, ren. 5–13–69. Cl. 39.
Cohen, Herman, d.b.a. Michigan Waste & Bag Co., Detroit, Mich. 747,378, canc. Cl. 29.
Colgate-Palmolive Co.: *See*—
Rolley, Charles A.
Colgate-Palmolive Co., New York, N.Y. 869,233, pub. 2–25–69. Cl. 6.
Colleen Pencil Co., Ltd., Tokyo, Japan. 869,370–1, pub. 2–25–69. Multiple Class (Classes 23 and 37).
Color Tile of Colorado, Inc., Denver, Colo. 869,307, pub. 2–25–69. Cl. 20.
Colotrym Co., The, Seattle, Wash., to Futura Industries Corp., Boise, Idaho. 511,227, ren. 5–13–69. Cl. 12.
Colt's Inc.: *See*—
Colt's Patent Fire Arms Mfg. Co.
Colt's Patent Fire Arms Mfg. Co., to Colt's Inc., Hartford, Conn. 32,536, ren. 5–13–69. Cl. 9.
Colt's Patent Fire Arms Mfg. Co., Inc., Hartford, Conn. 747,-375, canc. Cl. 22.
Columbia Technical Corp., Woodside, N.Y. 747,244, canc. Cl. 26.
Comet Packaging Corp., Bronx, N.Y. 869,213, pub. 2–25–69. Multiple Class (Classes 2, 37, and 39).
Comet Rice Mills, Inc., Beaumont, to Comet Rice Mills, Inc., Houston, Tex. 512,432, ren. 5–13–69. Cl. 46.
Communication Seminars, Inc., New York, N.Y. 869,554. Cl. 38.
Compania Insular Tabacalera, S.A., Las Palmas, Canary Islands. 869,286, pub. 2–25–69. Cl. 17.
Conal Pharmaceuticals, Inc., Chicago, Ill. 869,290, pub. 2–25–69. Cl. 18.
Concord Textile Co., Inc., New York, N.Y. 747,346, canc. Cl. 42.
Consolidated Foods Corp., d.b.a. Joe Lowe Co., Englewod, N.J. 869,467, pub. 2–25–69. Cl. 46.
Consolidated Oil & Gas, Inc., Denver, Colo. 747,144, canc. Cl. 15.
Consolidated Retail Stores, Inc., to Senack Shoes, Inc., St. Louis, Mo. 511,158, ren. 5–13–69. Cl. 39.
Constructions Metalliques Fillod, Paris, France. 869,258, pub. 2–25–69. Cl. 12.
Container Products Corp., Frederick, Md. 869,217, pub. 2–25–69. Cl. 2.
Conte Luna Foods, Inc.: *See*—
Arena, V., & Sons, Inc.
Continental Chemical Co.: *See*—
Schirm, John S.
Conwood Corp.: *See*—
Barton Mfg. Co.
Cool-Amp Co., The, Portland, Oreg. 869,247, pub. 2–25–69. Cl. 6.
Cooper Industries, Inc., Canfield, Ohio. 869,545, pub. 2–25–69. Cl. 106.
Coors Porcelain Co., Golden, Colo. 747,101, canc. Cl. 8.
Costain Concrete Co. Ltd., London, England. 869,259, pub. 2–25–69. Cl. 12.
Cowden Mfg. Co., Kansas City, Mo., to Cowden Mfg. Co., Lexington, Ky. 512,286, ren. 5–13–69. Cl. 39.
Cross, Allen S., Washington, D.C. 747,359, canc. Cl. 44.
Crown Radio Corp., Taito-Ku, Tokyo, Japan. 869,308, pub. 2–25–69. Cl. 21.
Cudahy Packing Co., The, Chicago, Ill., to Purex Corp., Ltd., Lakewood, Calif. 512,601, ren. 5–13–69. Cl. 52.
Curtis, Helene, Industries, Inc., by change of name from The National Mineral Co., Chicago, Ill. 507,310, ren. 5–13–69. Cl. 51.
Cutter Laboratories, to Cutter Laboratories, Inc., Berkeley, Calif. 509,796, ren. 5–13–69. Cl. 18.
Cutter Laboratories, to Cutter Laboratories, Inc., Berkeley, Calif. 512,634, ren. 5–13–69. Cl. 18.
Cutter Laboratories, Inc.: *See*—
Cutter Laboratories.
Daniel Products Co., Jersey City, N.J. 869,276–8, pub. 2–25–69. Cl. 16.
Danken Associates: *See*—
Hulett, Daniel H.
Dee Cee Laboratories, Inc., Madison, Tenn. 869,287, pub. 2–25–69. Cl. 18.
Deerfield Groves Co., Wabasso, Fla. 869,218, pub. 2–25–69. Cl. 2.
Dent, Art, Co.: *See*—
Dunkle, Arthur C.
Denver Chemical Mfg. Co., Stamford, Conn. 869,453, pub. 2–25–69. Cl. 44.
Deupree Industries, Inc., Blair, Nebr. 869,403, pub. 2–25–69. Cl. 35.
Deutscher Herold Verlag und Pressedienst G.m.b.H.: *See*—
Herold Overseas Publishing Corp.
Diamond Chain Co., Inc., Indianapoliss, Ind., to Amsted Industries Inc., Chicago, Ill. 442,375, ren. 5–13–69. Cl. 23.
Diamond Expansion Bolt Co., to Diamond Expansion Bolt Co., Inc., Garwood, N.J. 251,532, ren. 5–13–69. Cl. 23.
Diamond Expansion Bolt Co., Inc.: *See*—
Diamond Expansion Bolt Co.
Diana Stores Corp., North Bergen, N.J. 869,222, pub. 2–25–69. Cl. 5.
Diving Equipment & Supply Co., Inc., Milwaukee, Wis. 869,-327, pub. 2–25–69. Multiple Class (Classes 22 and 23).
Dixisteel Buildings Inc., Atlanta, Ga. 869,262, pub. 2–25–69. Cl. 12.
Dragerwerk, Heinr., & Bernh Drager, Lubeck, Germany. 869,447, pub. 2–18–69. Cl. 44.
Dunhill, Alfred, Ltd., St. James, London, England. 869,281, pub. 2–25–69. Cl. 17.
Dunkle, Arthur C., d.b.a. Art Dent Co., Neosho, Mo. 869,492, pub. 2–25–69. Cl. 51.
Dusharme Products, Inc., Minneapolis, Minn., to J. Strickland & Co., Memphis, Tenn. 506,761, ren. 5–13–69. Cl. 51.
Dye Oxygen Co., Phoenix, Ariz. 869,399, pub. 2–25–69. Cl. 34.
East Rutherford Syringes, Inc., East Rutherford, N.J. 512,-383, ren. 5–13–69. Cl. 44.
Eastern States Paint & Varnish Co., Philadelphia, Pa. 511,-140, ren. 5–13–69. Cl. 16.
Edison Giocattoli di Ferri Giampiero e Marinai Jori, Florence, Italy. 869,326, pub. 2–25–69. Cl. 22.
Edsal Mfg. Co., Inc., d.b.a. Home-E-Quip Consumer Products Division, Chicago, Ill. 869,396, pub. 2–25–69. Cl. 32.
Ekco Products Co., Chicago, Ill., to American Home Products Corp., New York, N.Y. 443,150, ren. 5–13–69. Cl. 23.
Electric Cord Sets, Inc., Avon Lake, Ohio. 869,321, pub. 2–25–69. Cl. 21.
Electric Machinery Mfg. Co., Minneapolis, Minn. 509,410–11, ren. 5–13–69. Cl. 21.
Electronic Control Corp., Euless, Tex. 869,314, pub. 2–25–69. Multiple Class (Classes 21 and 34).
Endres, Dr. Peter, Cologne, Germany. 869,452, pub. 2–25–69. Cl. 44.
Endura Time Corp., New York, N.Y. 869,386, pub. 2–25–69. Cl. 27.
Englander Co., Inc., The, New York, N.Y. 869,395, pub. 2–25–69. Cl. 32.
Enterprise Aluminum Co., The, Massillon, Ohio. 251,161, ren. 5–13–69. Cl. 13.
Estee Lauder, Inc., New York, N.Y. 869,503, pub. 2–25–69. Cl. 51.
Etchart, Jean, Castelnau-d'Auzan, Gers, France. 869,471, pub. 2–25–69. Cl. 49.
Eutectic Welding Alloys Corp., Flushing, N.Y. 747,139, canc. Cl. 14.
Express Batteries, Crown Point, Ind. 747,182, canc. Cl. 21.
F & W Enterprises, Inc., Tampa, Fla. 869,245, pub. 2–25–69. Cl. 6.
Fabrique d'Horlogerie Precimax S.A.: *See*—
Manufacture d'Horlogerie Precimax S.A.
Fairy Mills, Inc., Shillington, Pa. 747,321, canc. Cl. 39.
Farm Journal, Inc., Philadelphia, Pa. 513,620, ren. 5–13–69. Cl. 38.
Farmers Regional Cooperative, Fort Dodge, Iowa. 869,254, pub. 2–25–69. Cl. 10.
Fashion Tress, Inc., Miami Beach, Fla. 869,446, pub. 2–25–69. Cl. 40.
Federal Machine Corp., Des Moines, Iowa. 869,337, pub. 2–25–69. Cl. 22.
Fedtro, Inc., Rockville Centre, N.Y. 869,325, pub. 2–25–69. Cl. 21.
Feldmuhle Aktiengesellschaft, Dusseldorf-Oberkassel, Germany. 869,208, pub. 2–25–69. Cl. 1.
Finch, Henry, Ltd., London, England. 747,401, canc. Cl. 49.
Finnaren & Haley, Inc., Philadelphia, Pa. 869,280, pub. 2–25–69. Cl. 16.
First National Bank of Tullahoma, The, Tullahoma, Tenn. 869,539, pub. 2–25–69. Cl. 102.
Fisher Radio Corp., Long Island City, N.Y. 869,309, pub. 2–25–69. Cl. 21.
Fisher Radio Corp., Long Island City, N.Y. 869,322, pub. 2–25–69. Cl. 21.
Florsheim Shoe Co., The, to Interco Inc., Chicago, Ill. 259,-268, ren. 5–13–69. Cl. 39.
Freedco Products, Inc., Long Island City, N.Y. 869,301, pub. 2–25–69. Multiple Class (Classes 19, 23, and 31).

French Paper Co., Niles, Mich. 869,413, pub. 2–25–69. Cl. 37.
Fries, Roger A., Mount Clemens, Mich. 869,295, pub. 2–25–69. Cl. 19.
Full Bloom Products, Inc., Elkins Park, Pa. 869,224, pub. 2–25–69. Cl. 3.
Fulton Industries, Inc., Atlanta, Ga. 729,789, canc. Cl. 42.
Futura Industries Corp.: *See*—
Colotrym Co., The.
GAF Corp.: *See*—
General Aniline & Film Corp.
Garland Mfg. Co., Saco, Maine. 512,750, ren. 5–13–69. Cl. 23.
Gates Rubber Co., The, Denver, Colo. 512,560, ren. 5–13–69. Cl. 35.
Geigy Chemical Corp., Ardsley, N.Y. 869,248, pub. 2–25–69. Cl. 6.
Gema Records, New York, N.Y. 747,310, canc. Cl. 36.
General Aniline & Film Corp., to GAF Corp., New York, N.Y. 509,124, ren. 5–13–69. Cl. 14.
General Dynamics Corp., San Diego, Calif. 869,378, pub. 2–25–69. Cl. 26.
General Electric Co., Pittsfield, Mass. 747,157, canc. Cl. 21.
General Foods Corp., White Plains, N.Y. 869,459, pub. 2–25–69. Cl. 46.
General Magnaplate Corp., Linden, N.J. 869,271, pub. 2–25–69. Cl. 14.
General Tire & Rubber Co., The, Akron, Ohio. 869,342, pub. 2–25–69. Cl. 22.
Gerard Brothers Ltd., Nottingham, England. 364,354, canc. Cl. 51.
Girton Mfg. Co., Inc., Millville, Pa. 747,107, canc. Cl. 12.
Gladding, B. F., & Co. Inc., to Gladding Corp., South Otselic, N.Y. 506,622, ren. 5–13–69. Cl. 22.
Gladding Corp.: *See*—
Gladding, B. F., & Co. Inc.
Gladstone, John, & Co. Ltd., Galashiels, Scotland. 747,350, canc. Cl. 42.
Globe Roofing Products Co., Inc., Chicago, Ill. 869,260, pub. 2–25–69. Cl. 12.
Goodrich, B. F., Co., The, Akron, Ohio. 747,357, canc. Cl. 43.
Graded Press, The: *See*—
Board of Publication of the Methodist Church, Inc.
Granny Goodfox, Chicago, Ill. 869,335, pub. 2–25–69. Cl. 22.
Great Atlantic & Pacific Tea Co., The, to The Great Atlantic & Pacific Tea Co., Inc., New York, N.Y. 506,015, ren. 5–13–69. Cl. 46.
Great Atlantic & Pacific Tea Co., The, to The Great Atlantic & Pacific Tea Co., Inc., New York, N.Y. 506,025, ren. 5–13–69. Cl. 46.
Great Atlantic & Pacific Tea Co., The, to The Great Atlantic & Pacific Tea Co., Inc., New York, N.Y. 506,173, ren. 5–13–69. Cl. 46.
Great Atlantic & Pacific Tea Co., Inc., The: *See*—
Great Atlantic & Pacific Tea Co., The.
Great Lakes Chemical Corp., West Lafayette, Ind. 869,242–4, pub. 2–25–69. Cl. 6.
Griffin Mfg. Co., Inc., Brooklyn, to American Home Products Corp., New York, N.Y. 511,385, ren. 5–13–69. Cl. 4.
Grossman Clothing Co., to Grossman Clothing Co., Inc., New York, N.Y. 511,231, ren. 5–13–69. Cl. 39.
Grossman Clothing Co., Inc.: *See*—
Grossman Clothing Co.
Grove Co., The, St. Louis, Mo. 869,437, pub. 2–25–69. Cl. 39.
Guerbet, Michel, Paris, France. 869,289, pub. 2–25–69. Cl. 18.
Guiness, Louis F., Inc., Boston, Mass. 513,819, ren. 5–13–69. Cl. 28.
Gulf Atlantic Warehouse Co., Houston, Tex. 869,543, pub. 2–25–69. Cl. 105.
Gustin-Bacon Mfg. Co., Kansas City, Mo., to Certain-Teed Products Corp., Ardmore, Pa. 510,825, ren. 5–13–69. Cl. 13.
H & D, Inc., Everett, Wash. 869,261, pub. 2–25–69. Cl. 12.
HB Engineering Corp., Silver Spring, Md. 869,317, pub. 2–25–69. Cl. 21.
HMH Publishing Co., Inc., Chicago, Ill. 869,533, pub. 2–25–69. Cl. 101.
Haire Publishing Co., Inc.: *See*—
Haire Publishing Corp.
Haire Publishing Corp., from Haire Publishing Co., Inc., New York, N.Y. 869,555. Cl. 38.
Hallmark Cards, Inc., Kansas City, Mo. 869,410, pub. 2–25–69. Multiple Class (Classes 37 and 38).
Harms, Percy, Corp., Skokie, Ill. 869,238, pub. 2–25–69. Cl. 6.
Haro-Bed Co., Inc., Fowler, Calif. 747,215, canc. Cl. 23.
Haskins Brothers & Co., Sioux City, Iowa, and Omaha, Nebr., to Purex Corp., Ltd., Lakewood, Calif. 254,780, ren. 5–13–69. Cl. 52.
Hausser, O. & M., Neustadt, Coburg, Germany. 869,332, pub. 2–25–69. Cl. 22.
Hayward, Walter E., Co., Inc., Attleboro, Mass. 511,599, ren. 5–13–69. Cl. 28.
Heath Spring & Notion Co. Ltd., The, Reddith, England. 255,146, ren. 5–13–69. Cl. 39.
Hedwin Corp., New York, N.Y. 869,219, pub. 2–25–69. Cl. 2.
Heileman, G., Brewing Co., to G. Heileman Brewing Co., Inc., La Crosse, Wis. 74,371, ren. 5–13–69. Cl. 48.
Heileman, G., Brewing Co., Inc.: *See*—
Heileman, G., Brewing Co.
Henco Enterprises, Inc., Niles, Mich. 869,252, pub. 2–25–69. Cl. 9.
Henry Engineering Co.: *See*—
Henry, G. A.
Henry, G. A., d.b.a. Henry Engineering Co., Burbank, Calif., to Aurora Plastics Corp., West Hempstead, N.Y. 506,412, ren. 5–13–69. Cl. 22.
Herald Life Insurance Co., Jacksonville, Fla. 869,540, pub. 2–25–69. Cl. 102.
Hermes Leather Co., Inc., New York, N.Y. 869,210, pub. 2–25–69. Cl. 1.
Herold Overseas Publishing Corp., New York, N.Y., from Deutscher Herold Verlag und Pressedienst G.m.b.H., Munchen, Germany. 869,416, pub. 2–25–69. Cl. 38.
Hill & Griffith Co., The, Cincinnati, Ohio. 869,211, pub. 2–25–69. Cl. 1.
Hold Up, Inc., Miami, Fla. 869,231, pub. 2–25–69. Cl. 5.
Holmes Insulations Ltd., Sarnia, Ontario, Canada. 869,264, pub. 2–25–69. Cl. 12.
Home-E-Quip Consumer Products Division: *See*—
Edsal Mfg. Co., Inc.
Honeywell Inc.: *See*—
Minneapolis-Honeywell Regulator Co.
House of Worsted-Tex Inc.: *See*—
Cohen, Goldman & Co. Inc.
Huber Corp., Marion, Ohio. 869,369, pub. 2–25–69. Cl. 23.
Hudnut, Richard, Morris Plains, N.J. 442,466, ren. 5–13–69. Cl. 51.
Hudnut, Richard, Morris Plains, N.J. 869,504, pub. 2–25–69. Cl. 51.
Hudson, H. D., Mfg. Co., Chicago, Ill. 869,362, pub. 2–25–69. Cl. 23.
Huffman Mfg. Co., The, Dayton, Ohio. 747,150, canc. Cl. 19.
Hulett, Daniel H., d.b.a. Danken Associates, Santa Rosa, Calif. 747,386, canc. Cl. 38.
Hupen-Schede Horst C. Schede KG, Hamburg, Germany. 869,-298, pub. 2–25–69. Cl. 19.
Hyde Mfg. Co., Southbridge, Mass. 505,788, ren. 5–13–69. Cl. 23.
Industrial Molded Products Co., Inc., Palatine, Ill. 510,491, ren. 5–13–69. Cl. 21.
Industrial Nucleonics Corp., Columbus, Ohio. 869,531, pub. 2–25–69. Cl. 100.
Industrial Nucleonics Corp., Columbus, Ohio. 869,542, pub. 2–25–69. Cl. 103.
Ingersoll-Rand Co., New York, N.Y. 747,206, canc. Cl. 23.
Inland Rubber Corp., Chicago, Ill., to Inland Rubber Corp., Mansfield, Ohio. 505,731–2, ren. 5–13–69. Cl. 35.
Inland Rubber Corp., Chicago, Ill., to Inland Rubber Corp., Mansfield, Ohio. 506,460, ren. 5–13–69. Cl. 35.
Inmark, Inc., Kensington, Md. 869,535, pub. 2–25–69. Cl. 101.
Interco Inc.: *See*—
Florsheim Shoe Co., The.
International Paint Co., Inc., New York, N.Y. 869,279, pub. 2–25–69. Cl. 16.
International Paper Co., New York, N.Y. 869,220, pub. 2–25–69. Cl. 2.
Invertere Coat Co., Ltd., Newton Abbot, England. 869,430, pub. 2–25–69. Cl. 39.
Irvin Industries, Inc., Lexington, Ky. 869,302, pub. 2–25–69. Cl. 19.
Irvins', J. S., Son, Inc., to Acme Markets, Inc., Philadelphia, Pa. 256,761, ren. 5–13–69. Cl. 46.
Jackes-Evans Mfg. Co., St. Louis, Mo. 869,215, pub. 2–25–69. Cl. 2.
Jaeger Machine Co., The, Columbus, Ohio. 510,544, ren. 5–13–69. Cl. 23.
Jeco Co., Ltd., Tokyo, Japan. 869,315, pub. 2–25–69. Multiple Class (Classes 21 and 36).
Jeffrey Galion Mfg. Co., Columbus, Ohio. 869,368, pub. 2–25–69. Cl. 23.
Jests, Inc., Brooklyn, N.Y. 747,147, canc. Cl. 18.
Jewel Aquarium Co., Inc., Chicago, Ill. 869,473, pub. 2–25–69. Cl. 50.
Johns-Manville Corp., New York, N.Y. 510,356, ren. 5–13–69. Cl. 35.
Jostens, Inc., Owatonna, Minn. 869,420, pub. 2–25–69. Cl. 38.
Kabushiki Kaisha Matsuzakaya, Nagoya City, Japan. 747,274, canc. Cl. 32.
Kabushiki Kaisha Matsuzakaya, Nagoy City, Japan. 747,319, canc. Cl. 39.
Katz, Adolph A., New York, N.Y. 869,223, pub. 2–25–69. Cl. 3.
Kayser-Roth Corp.: *See*—
Roth, Chester H., Co. Inc.
Keene Corp., New York, N.Y., from Penn Metal Co., Inc., Boston, Mass. 869,257, pub. 2–25–69. Cl. 12.
Kellogg Co., Battle Creek, Mich. 747,399, canc. Cl. 46.
Kennedy Sinclaire, Inc., Montclair, N.J. 442,400, ren. 5–13–69. Cl. 38.
Killenbeck, Maurice C., Tacoma, Wash. 869,404, pub. 2–25–69. Cl. 36.
King Vi-Dor Insulated Clothing Mfg. Co., Butler, Ind. 747,-328, canc. Cl. 39.
Koehring Co., Milwaukee, Wis. 869,373, pub. 2–25–69. Cl. 23.
Kohkoku Chemical Industry Co., Ltd., Tokyo, Japan. 869,431, pub. 2–25–69. Cl. 39.
Kortman & Schulte N.V., Rotterdam, Netherlands. 869,515, pub. 2–25–69. Cl. 52.
Kovo, Podnik Zahranicniho Obchodu Pro Dovoz a Vyvoz Vyrobku Presneho Strojirenstvi, Prague, Czechoslovakia. 723,548, canc. Cl. 23.
Kushner & Pines, Inc., New York, N.Y. 747,260–1, canc. Cl. 28.
LCN Closers, Inc.: *See*—
Norton Lasier Co.
Lady McKnight Pajama Corp., New York, N.Y. 747,336, canc. Cl. 39.
Lakeside Malleable Castings Co., Racine, Wis. 505,139, ren. 5–13–69. Cl. 14.
Lander Co., Inc., from Lander Co., Inc., New York, N.Y. 869,475, pub. 2–11–69. Multiple Class (Classes 51 and 52).
Larre Fine Jewelry Craftsmen, New York, N.Y. 747,264, canc. Cl. 28.
Lawndale Industries, Inc., Aurora, Ill. 747,121, canc. Cl. 18.

Lehigh Valley Industries, Inc.: *See*—
Blue Ridge Textile Co., Inc.
Les Fils de Valton & Cie, Troyes, France. 260,080, ren. 5–13–69. Cl. 39.
Les Parfums de Dana, Inc., New York, N.Y. 510,751–2, ren. 5–13–69. Cl. 52.
Lesco Lona, Inc., New York, N.Y. 869,226, pub. 2–25–69. Cl. 3.
Levy, Nat, d.b.a. Minaline Co., Wilkes-Barre, Pa. 256,028, ren. 5–13–69. Cl. 18.
Lipare, Frank, New York, N.Y. 747,331, canc. Cl. 39.
Lipton, Thomas J., Inc., Englewood Cliffs, N.J. 869,466, pub. 2–25–69. Cl. 46.
Lobob Laboratories, Wenatchee, Wash. 869,516, pub. 2–25–69. Cl. 52.
Loomtogs, Inc., New York, N.Y. 747,332, canc. Cl. 39.
Lowe, Joe, Co.: *See*—
Consolidated Foods Corp.
Lu Van, Inc., Belding, Mich. 747,277, canc. Cl. 32.
Macbeth Corp., Newburgh, N.Y. 869,312, pub. 2–25–69. Cl. 21.
Mackie-Lovejoy Mfg. Co., Chicago, Ill., to The Setwell Co., Traverse City, Mich. 509,597, ren. 5–13–69. Cl. 50.
Madison Chemical Corp., Maywood, Ill. 869,508–9, pub. 2–25–69. Cl. 52.
Magee Carpet Co., The, Bloomsburg, Pa. 256,392, ren. 5–13–69. Cl. 42.
Magnetoplan Gesellschaft H. Jo. Holtz, K.G., Wiesbaden, Germany. 809,923, canc. Cl. 37.
Magnion, Inc., Cambridge, Mass. 747,191, canc. Cl. 21.
Maguire, Thomas L., Broadheath, Chester, England. 869,401, pub. 2–25–69. Cl. 34.
Maize Industries, Earlville, Ill. 747,394, canc. Cl. 46.
Manhattan Fund, Inc., New York, N.Y. 869,537–8, pub. 2–25–69. Cl. 102.
Manufacture d'Horlogerie Precimax S.A., to Fabrique d'Horlogerie Precimax S.A., Neuchatel, Switzerland. 503,-918, ren. 5–13–69. Cl. 27.
March & Mendl, Inc., New York, N.Y. 747,388, canc. Cl. 39.
Maritz, Inc., d.b.a. Maritz Travel Co., St. Louis, Mo. 747,419, canc. Cl. 105.
Maritz Travel Co.: *See*—
Maritz, Inc.
Marose Co., Inc., Thomasville, Ga. 584,784, canc. Cl. 46.
Martel Food Corp., New York, N.Y. 508,357, ren. 5–13–69. Cl. 46.
Martin Marietta Corp.: *See*—
Master Builders Co., The.
Martin-Brower Corp., Chicago, Ill. 869,455, pub. 2–25–69. Cl. 46.
Master Builders Co., The, Cleveland, Ohio, to Martin Marietta Corp., New York, N.Y. 258,695–6, ren. 5–13–69. Cl. 12.
Mattel, Inc., Hawthorne, Calif. 869,348–58, pub. 2–25–69. Cl. 22.
May Department Stores Co., The, St. Louis, Mo. 747,314, canc. Cl. 39.
McCobb, Paul W., New York, N.Y. 747,276, canc. Cl. 32.
McKinnon, Columbus, Corp.: *See*—
Chisholm-Moore Hoist Corp.
Mechanical Handling Systems Inc.: *See*—
American Chain & Cable Co., Inc.
Merath, Adolf, Ulm, Germany. 869,388, pub. 2–25–69. Cl. 28.
Merrick Medicine Co., Waco, Tex. 74,560, ren. 5–13–69. Cl. 18.
Metallo Gasket Co., New Brunswick, N.J. 504,045, ren. 5–13–69. Cl. 35.
Michael-Myles Advertising, Inc., Northfield, Ill. 869,553, Cl. 38.
Michigan Historical Commission, Lansing, Mich. 869,418, pub. 2–25–69. Cl. 38.
Michigan Hot Rod Association, Centerline, Mich. 869,227, pub. 2–25–69. Cl. 4.
Michigan Waste & Bag Co.: *See*—
Cohen, Herman.
Mid-America Body & Equipment Co., Inc., West Des Moines, Iowa. 869,296, pub. 2–25–69. Cl. 19.
Milner, Dumas, Corp., Jackson, Miss. 747,371, canc. Cl. 18.
Milsco Mfg. Co., Milwaukee, Wis. 869,294, pub. 2–25–69. Cl. 19.
Minaline Co.: *See*—
Levy, Nat.
Minneapolis-Honeywell Regulator Co., to Honeywell Inc., Minneapolis, Minn. 507,792, ren. 5–13–69. Cl. 26.
Minneapolis-Honeywell Regulator Co., to Honeywell Inc., Minneapolis, Minn. 511,574, ren. 5–13–69. Cl. 26.
Minnesota Apollo Corp., Minneapolis, Minn. 869 270, pub. 2–25–69. Cl. 13.
Minnesota Mining & Mfg. Co., St. Paul, Minn. 869,385, pub. 2–25–69. Cl. 26.
Mitchell, Lillian, Chicago, Ill. 869,409, pub. 2–25–69. Cl. 37.
Modern Products, Inc., Kansas City, Mo. 869,273, pub. 2–25–69. Cl. 16.
Modrey, Henry J., d.b.a. Perforation Fastener Co., Stamford, Conn. 747,134, canc. Cl. 13.
Mohawk Condensed Milk Co., Rochester, N.Y., to Carnation Co., Los Angeles, Calif. 71,394, ren. 5–13–69. Cl. 46.
Monday's Maid, Inc., Union City, Ind. 869,377, pub. 2–25–69. Cl. 24.
Montrose Oil & Belting Co., Inc., d.b.a. Montrose Supply & Equipment Co., Brooklyn, N.Y. 869,376, pub. 2–25–69. Cl. 23.
Montrose Supply & Equipment Co.: *See*—
Montrose Oil & Belting Co., Inc.
Moore, Benjamin, & Co., New York, N.Y. 869,272, pub. 2–25–69. Cl. 16.
Moore's Super Stores, Inc., Roanoke, Va. 747,227, canc. Cl. 23.
Moorman Mfg. Co., Quincy, Ill. 513,104, ren. 5–13–69. Cl. 6.
Morgan Construction Co., Worcester, Mass. 869,528, pub. 2–25–69. Cl. 100.
Movie Star, Inc., New York, N.Y. 747,325, canc. Cl. 39.
Munsingwear, Inc., Minneapolis, Minn. 512,993, ren. 5–13–69. Cl. 39.
National Biscuit Co., New York, N.Y. 869,458, pub. 2–25–69. Cl. 46.
National Educational Aids, Inc., Abilene, Tex. 869,343–4, pub. 2–25–69. Cl. 22.
National Homes Corp., Lafayette, Ind. 869,305, pub. 2–25–69. Cl. 19.
National Licorice Co., to Y & S Candies Inc., Brooklyn, N.Y. 253,063, ren. 5–13–69. Cl. 46.
National Mineral Co., The: *See*—
Curtis, Helene, Industries, Inc.
National Twist Drill & Tool Co., from National Twist Drill & Tool Co., Rochester, Mich. 869,360, pub. 2–25–69. Multiple Class (Classes 23 and 26).
Naylor, H. W., Co.: *See*—
Naylor, Howard W.
Naylor, H. W., Co., Inc.: *See*—
Naylor, Howard W.
Naylor, Howard W., d.b.a. H. W. Naylor Co., to H. W. Naylor Co., Inc., Morris, N.Y. 509,995, ren. 5–13–69. Cl. 44.
Naylor, Howard W., d.b.a. H. W. Naylor Co., to H. W. Naylor Co, Inc., Morris, N.Y. 511,965, ren. 5–13–69. Cl. 18.
New Orleans Buccaneers, Inc., New Orleans, La. 869,550, pub. 2–25–69. Cl. 107.
Newport-Opti-Sonics Co., Newport Beach, Calif. 869,406, pub. 2–25–69. Cl. 36.
Newport Opti-Sonics Co., Newport Beach, Calif. 869,426, pub. 2–25–69. Cl. 38.
Nicholson File Co.: *See*—
Atkins, E. C., & Co.
Niles Expanded Metals Co., Niles, Ohio. 869,266, pub. 2–25–69. Cl. 12.
Norcross, Inc., New York, N.Y. 869,425, pub. 2–25–69. Cl. 38.
North American Fiberglass Corp., High Point, N.C. 869,291, pub. 2–25–69. Cl. 19.
North & Judd Mfg. Co., New Britain, Conn. 869,306, pub. 2–25–69. Cl. 19.
Northern Petrochemical Co., Omaha, Nebr. 869,240, pub. 2–25–69. Cl. 6.
Northwest Paper Co., The, Cloquet, Minn. 869,412, pub. 2–25–69. Cl. 37.
Northwestern Corp., The, Morris, Ill. 511,653, ren. 5–13–69. Cl. 23.
Norton Lasier Co., now by change of name LCN Closers, Inc., Chicago, Ill., to Schlage Lock Co., San Francisco, Calif. 511,172, ren. 5–13–69. Cl. 13.
Occupational Hazards, Inc., to Pittway Corp., Cleveland, Ohio. 509,858, ren. 5–13–69. Cl. 38.
Oneida Ltd., Oneida, N.Y. 509,883, ren. 5–13–69. Cl. 28.
Oneida Ltd., Oneida, N.Y. 512,066–7, ren. 5–13–69. Cl. 28.
Oneida Ltd., Oneida, N.Y. 512,069, ren. 5–13–69. Cl. 28.
Orange Julius Corp., to Orange Julius of America, Los Angeles, Calif. 513,225, ren. 5–13–69. Cl. 45.
Orange Julius of America: *See*—
Orange Julius Corp.
Oxy-Catalyst, Inc., Berwyn, Pa. 869,235, pub. 2–25–69. Multiple Class (Classes 6, 23, and 31).
Ozier, Mervyn W., Champaign, Ill. 869,329, pub. 2–25–69. Multiple Class (Classes 22, 37, and 42).
Palmer, Oscar C., d.b.a. Sno-Fluf Excelsior Mfg. Co., Phoenix, Ariz., to Amxco, Inc., Arlington, Tex. 507,583, ren. 5–13–69. Cl. 1.
Parade Publication, Inc., to Parade Publications, Inc., New York, N.Y. 508,181, ren. 5–13–69. Cl. 38.
Parade Publication, Inc., to Parade Publications, Inc., New York, N.Y. 511,811, ren. 5–13–69. Cl. 38.
Parade Publications, Inc.: *See*—
Parade Publication, Inc.
Parents Without Partners, Inc., New York, N.Y. 869,546, pub. 2–25–69. Cl. 107.
Pastis Duval S.A., d.b.a. Ancienne Maison F. Duval Successeurs de Dubied Pere et Fils, Marseille, France. 869,470, pub. 2–25–69. Cl. 47.
Patek & Co.: *See*—
Amerace Corp.
Paula, C. M., Co., The, Cincinnati, Ohio. 869,552, Cl. 37.
Peck & Peck, New York, N.Y. 511,516, ren. 5–13–69, Cl. 39.
Pellon Corp., New York, N.Y. 869,232, pub. 2–25–69. Cl. 5.
Penn Metal Co., Inc.: *See*—
Keene Corp.
Pennant Electronic Corp., Beverly Hills, Calif. 747,309, canc. Cl. 36.
Pepper Sound Studios, Inc., d.b.a. Airplay International, Memphis, Tenn. 869,548, pub. 2–25–69. Cl. 107.
Perforation Fastener Co.: *See*—
Modrey, Henry J.
Perkin-Elmer Corp., The, Norwalk, Conn. 747,186, canc. Cl. 21.
Perutz Bros.: *See*—
Perutz Bros., Inc.
Perutz Bros., Inc., d.b.a. Perutz Bros., New York, N.Y. 747,320, canc. Cl. 39.
Pfizer, Chas., & Co., Inc., from Bergdorf & Goodman Co., New York, N.Y. 869,491, pub. 2–25–69. Cl. 51.
Phelps Dodge Copper Products Corp., New York, N.Y. 747,-180, canc. Cl. 21.
Philadelphia Quartz Co., Philadelphia, Pa. 506,738, ren. 5–13–69. Cl. 6.
Pillsbury Co., The, Minneapolis, Minn. 869,454, pub. 2–25–69. Cl. 46.
Pittsburgh Corning Corp., Pittsburgh, Pa. 869,268, pub. 2–25–69. Cl. 12.

Pittway Corp.: *See*—
Occupational Hazards, Inc.
Points East Sportswear, Inc., New York, N.Y. 869,442, pub. 2–25–69. Cl. 39.
Polychrome Corp., Yonkers, N.Y. 869,557. Cl. 50.
Popsy Togs, Inc., Sybertsville, Pa. 747,341, canc. Cl. 39.
Public Service Coordinated Transport: *See*—
Public Service Interstate Transportation Co.
Public Service Interstate Transportation Co., Newark, to Public Service Coordinated Transport, Maplewood, N.J. 511,072–3, ren. 5–13–69. Cl. 105.
Purex Corp., Ltd.: *See*—
Cudahy Packing Co., The.
Haskins Bros. & Co.
Radiant Reality, Ltd., London, England. 747,245, canc. Cl. 26.
Ramsey Corp., St. Louis, Mo. 869,402, pub. 2–25–69. Cl. 35.
Randall Fuel Co. Inc., Atlanta, Ga. 869,207, pub. 2–25–69. Cl. 1.
Randolph Mfg. Co., Inc., from Randolph Mfg. Co., Inc., Randolph, Mass. 869,338, pub. 2–25–69. Cl. 22.
Randolph Marketing Co., Visalia, Calif. 512,422, ren. 5–13–69. Cl. 46.
Rapaport Bros., Inc., Chicago, Ill. 869,330, pub. 2–25–69. Cl. 22.
Raybestos-Manhattan, Inc.: *See*—
Royal Equipment Co.
Reichhold Chemicals, Inc., White Plains, N.Y. 869,212, pub. 2–25–69. Cl. 1.
Reliance Panelyte Inc.: *See*—
St. Regis Paper Co.
Rembrandt Tobacco Corp. (Overseas) Ltd., Weinbergstrasse, Zurich, Switzerland. 869,282, pub. 2–25–69. Cl. 17.
Retteen Jewelry, Inc., New York, N.Y. 869,387, pub. 2–25–69. Multiple Class (Classes 27 and 28).
Revlon, Inc., New York, N.Y. 747,406–7, canc. Cl. 51.
Revlon, Inc., New York, N.Y. 747,410, canc. Cl. 51.
Rexall Drug & Chemical Co., d.b.a. Tupperware, Los Angeles, Calif. 869,214, pub. 2–25–69. Cl. 2.
Reynolds, R. J., Tobacco Co., Winston-Salem, N.C. 869,-283–5, pub. 2–25–69. Cl. 17.
Reynolds Research & Mfg. Corp., McAllen, Tex. 869,365, pub. 2–25–69. Cl. 23.
Reynolds & Reynolds Co., The, Dayton, Ohio. 869,534, pub. 2–25–69. Cl. 101.
Rhodia Inc., New Brunswick, N.J. 869,241, pub. 2–25–69. Cl. 6.
Richards, Caryl, Inc., New York, N.Y. 869,451, pub. 2–25–69. Cl. 44.
Richardson Corp., Rochester, N.Y. 255,803, ren. 5–13–69. Cl. 45.
Rob Roy Co., Inc., New York, N.Y. 869,440, pub. 2–25–69. Cl. 39.
Robbins Tire & Rubber Co., Inc., Tuscumbia, Ala. 442,184, ren. 5–13–69. Cl. 35.
Robeco Products Inc., New York, N.Y. 869,445, pub. 2–25–69. Cl. 40.
Robins, A. H., Co., Inc., Richmond, Va. 869,463–4, pub. 2–25–69. Cl. 46.
Roe, William G., to Wm. G. Roe & Sons, Inc., Winter Haven, Fla. 259,466, ren. 5–13–69. Cl. 46.
Roe, Wm. G., & Sons, Inc.: *See*—
Roe, William G.
Rolley, Charles A., d.b.a. Rolley Perfumes, assor. to Rolley, Inc., San Francisco, Calif., to Colgate-Palmolive Co., New York, N.Y. 442,125, ren. 5–13–69. Cl. 51.
Rolley Inc.: *See*—
Rolley, Charles A.
Rolley Perfumes: *See*—
Rolley, Charles A.
Romper Room, Inc., Baltimore, Md. 869,547, pub. 2–25–69. Cl. 107.
Rooster, Inc., Philadelphia, Pa. 869,433–6, pub. 2–25–69. Cl. 39.
Rosco Mfg. Co., Minneapolis, Minn. 869,372, pub. 2–25–69. Cl. 23.
Rosenberg, Sydney, d.b.a. Tam O'Shanter Sportswear Co., Boston, Mass., to Tam O'Shanter, Inc., Manchester, N.H. 442,940, ren. 5–13–69. Cl. 39.
Rosenthal & Rosenthal, Inc., New York, N.Y. 869,541, pub. 2–25–69. Cl. 102.
Roth, Chester H., Co. Inc., to Kayser-Roth Corp., New York, N.Y. 442,930, ren. 5–13–69. Cl. 39.
Roth-Schlenger, Inc., Union, N.J. 869,297, pub. 2–25–69. Cl. 19.
Rothenberg, Philip, & Co., Inc., New York, N.Y. 869,441, pub. 2–25–69. Cl. 39.
Roux Laboratories, Inc., New York, N.Y. 869,476, pub. 2–25–69. Cl. 51.
Royal Equipment Co., Bridgeport, Conn., to Raybestos-Manhattan, Inc., Passaic, N.J. 74,306, ren. 5–13–69. Cl. 35.
S. & S. Undergarment Co., New York, N.Y. 506,261, ren. 5–13–69. Cl. 39.
S. & S. Undergarment Co., New York, N.Y. 506,297, ren. 5–13–69. Cl. 39.
St. Regis Paper Co., New York, N.Y., to Reliance Panelyte Inc., Tupelo, Miss. 442,817, ren. 5–13–69. Cl. 1.
Sanger Citrus Association, Sanger, Calif. 510,595, ren. 5–13–69. Cl. 46.
Schick Electric Inc., Lancaster, Pa. 869,450, pub. 2–25–69. Cl. 44.
Schirm, John S., d.b.a. Continental Chemical Co., Los Angeles, Calif. 747,104, canc. Cl. 12.
Schlage Lock Co.: *See*—
Norton Lasier Co.
Scholl Mfg. Co., Inc., The, Chicago, Ill. 512,484, ren. 5–13–69. Cl. 44.
Scholl Mfg. Co., Inc., The, Chicago, Ill. 869,449, pub. 2–25–69. Multiple Class (Classes 44 and 51).
Scientific Pharmacals Ltd., London, England, to American Home Products Corp., New York, N.Y. 510,745, ren. 5–13–69. Cl. 51.
Score Recorder, Inc., Flushing, N.Y. 747,376, canc. Cl. 22.
Scott Paper Co., Boston, Mass. 869,408, pub. 2–25–69. Cl. 37.
Scripto, Inc., Atlanta, Ga. 869,411, pub. 2–25–69. Cl. 37.
Sears, Roebuck & Co., Chicago, Ill. 869,310, pub. 2–25–69. Cl. 21.
Seidman & Seidman, New York, N.Y. 511,077, ren. 5–13–69. Cl. 101.
Sel-Rex Corp., Nutley, N.J. 869,239, pub. 2–25–69. Cl. 6.
Senack Shoes, Inc.: *See*—
Consolidated Retail Stores, Inc.
Setwell Co., The: *See*—
Mackie-Lovejoy Mfg. Co.
Seward Luggage Mfg. Co., Inc., Petersburg, Va. 869,225, pub. 2–25–69. Cl. 3.
Sew-Knit-N-Stretch, Inc., Golden Valley, Minn. 869,382, pub. 2–25–69. Cl. 26.
Seybold, Rene, Strasbourg, France. 747,305, canc. Cl. 36.
Shell Oil Co., New York, N.Y. 869,249–50, pub. 2–25–69. Cl. 6.
Shelter Corp. of Texas, Fort Worth, Tex. 747,105, canc. Cl. 12.
Shepherd Casters, Inc., Benton Harbor, Mich. 747,126, canc. Cl. 13.
Sigman Meat Co., Inc., Denver, Colo. 869,456, pub. 2–25–69. Cl. 46.
Simplot, J. R., Co., Boise, Idaho. 869,461, pub. 2–25–69. Cl. 46.
Slix Products, Inc., Woodside, Calif. 869,228, pub. 2–25–69. Cl. 4.
Smith-Corona Marchant Inc., New York, N.Y. 747,243, canc. Cl. 26.
Smith, James A., Metairie, La. 869,331, pub. 2–25–69. Cl. 22.
Smith, T. J., & Nephew, Ltd., Hull, England. 512,604, ren. 5–13–69. Cl. 44.
Sno-Fluf Excelsior Mfg. Co.: *See*—
Palmer, Oscar C.
Snowbird Refrigeration Co., Pompano Beach, Fla. 869,394, pub. 2–25–69. Cl. 31.
Societe Anonyme des Anciens Etablissements J. M. Paillard, Paris (Seine), France. 255,241, ren. 5–13–69. Cl. 11.
Societe Anonyme des Etablissements Lefranc, Paris, to Societe des Couleurs Lefranc et Bourgeois, Puteaux, France. 253,-108, ren. 5–13–69. Cl. 16.
Societe des Couleurs Lefranc et Bourgeois: *See*—
Societe Anonyme des Etablissements Lefranc.
Societe Ermans, Saint-Germain-En-Laye, France. 869,293, pub. 2–25–69. Cl. 19.
Sorenson Research Corp., Salt Lake City, Utah. 869,392, pub. 2–25–69. Cl. 29.
Southwest Grease & Oil Co. (Kansas City), Inc., d.b.a. Ultra Guard Products Co., Kansas City, Mo. 869,507, pub. 2–25–69. Cl. 52.
Spalding, A. G., & Bros. Inc., Chicopee, Mass. 507,626, ren. 5–13–69. Cl. 22.
Spalding, A. G., & Bros. Inc., Chicopee, Mass. 508,504, ren. 5–13–69. Cl. 22.
Spee-Dee Messenger Service, Inc., Pittsburgh, Pa. 747,418, canc. Cl. 105.
Sperry Rand Corp., New York, N.Y. 869,275, pub. 2–25–69. Cl. 16.
Sperry Rand Corp., New York, N.Y. 869,381, pub. 2–25–69. Cl. 26.
Sport-Craft, Inc., Perry, Fla. 869,299, pub. 2–25–69. Cl. 19.
Sprague Electric Co., North Adams, Mass. 509,306, ren. 5–13–69. Cl. 21.
Sprague Electric Co., North Adams, Mass. 747,183–4, canc. Cl. 21.
Sprayfoil Corp., Minneapolis, Minn. 727,208, canc. Cl. 23.
Sprengel, B., & Co., Hanover, Germany. 869,457, pub. 2–25–69. Cl. 46.
Stacy, Inc., Providence, R.I. 869,474, pub. 2–25–69. Cl. 51.
Standard & Poor's Corp., New York, N.Y. 869,419, pub. 2–25–69. Cl. 38.
Standart, Gary B., d.b.a. Standart Products Co., Phoenix, Ariz. 869,556. Cl. 40.
Standart Products Co.: *See*—
Standart, Gary B.
Steigerwald, A. M., Co., Chicago, Ill. 512,679, ren. 5–13–69. Cl. 37.
Sterling Automotive Mfg. Co., Inc., Elk Grove Village, Ill. 869,346, pub. 2–25–69. Cl. 22.
Sterling-Europa, Inc., Long Island City, N.Y. 747,164, canc. Cl. 21.
Stoddard, Meryl L., Flint, Mich. 747,315, canc. Cl. 39.
Stokely-Van Camp, Inc.: *See*—
Capital City Products Co., The.
Straubel Paper Co., Green Bay, Wis. 511,150, ren. 5–13–69. Cl. 37.
Strickland, J., & Co.: *See*—
Dusharme Products, Inc.
Strobbe, Dirk, PVBA, Izegem, Belgium. 869,379, pub. 2–25–69. Cl. 26.
Stuart, D. A., Oil Co., Ltd., Chicago, Ill. 510,570, ren. 5–13–69. Cl. 15.
Suburbia Mfg. Corp., New York, N.Y. 747,343, canc. Cl. 39.
Sun Chemical Corp., New York, N.Y. 442,778, ren. 5–13–69. Cl. 6.
Sun Oil Co., Philadelphia, Pa. 442,163, ren. 5–13–69. Cl. 15.
Supradur Mfg. Corp., Wind Gap, Pa. 869,255, pub. 2–25–69. Cl. 12.
Swank, Inc.: *See*—
Baer & Wilde Co., The.
Swift & Co., to Swift & Co., Chicago, Ill. 32,235, ren. 5–13–69. Cl. 46.

Swift & Co., to Swift & Co., Chicago, Ill. 249,695, ren. 5–13–69. Cl. 46.
Swift & Co., Chicago, Ill. 728,616, canc. Cl. 46.
Tailored Woman, Inc., The, New York, N.Y. 869,443, pub. 2–25–69. Cl. 39.
Tam O' Shanter, Inc.: *See*—
Rosenberg, Sydney.
Tam O' Shanter Sportswear Co.: *See*—
Rosenberg, Sydney.
Taylor, E. E., Corp., Freeport, Maine. 512,308, ren. 5–13–69. Cl. 39.
Team Central Inc., Minneapolis, Minn. 869,323, pub. 2–25–69. Multiple Class (Classes 21, 23, 26, and 34).
Teich, Curt, & Co., Chicago, Ill. 512,364, ren. 5–13–69. Cl. 38.
Tennessee Walking Horse National Celebration Assn., Shelbyville, Tenn. 869,549, pub. 2–25–69. Cl. 107.
Textron Inc., Providence, R.I. 869,390, pub. 2–25–69. Cl. 28.
Theobald Industries, The, Kearny, N.J. 869,468, pub. 2–25–69. Cl. 46.
Topaz Hosiery Mills, Inc., New York, N.Y. 869,444, pub. 2–25–69. Cl. 39.
Towle Mfg. Co., Newburyport, Mass. 869,374, pub. 2–25–69. Cl. 28.
Trans-Lux Corp., New York, N.Y. 869,311, pub. 2–25–69. Cl. 21.
Travel Media International Ltd., New York, N.Y. 869,415, pub. 12–24–68. Cl. 38.
Tri-Ads Co.: *See*—
Brawer, Sid.
Troxel Mfg. Co., The, Moscow, Tenn. 869,303, pub. 2–25–69. Cl. 19.
Tupperware: *See*—
Rexall Drug & Chemical Co.
UOP Bostrom Division: *See*—
Universal Oil Products Co.
Ultra Guard Products Co.: *See*—
Southwest Grease & Oil Co. (Kansas City), Inc.
Uneeda Doll Co., Inc., Brooklyn, N.Y. 869,345, pub. 2–25–69. Cl. 22.
Ungaro, Emanuel, Societe a Responsabilite Limitee, Paris, France. 869,432, pub. 2–25–69. Cl. 39.
Union Carbide Corp., New York, N.Y. 869,216, pub. 2–25–69. Cl. 2.
United Import Corp., Cleveland, Ohio. 869,472, pub. 2–25–69. Cl. 50.
United Merchants & Manufacturers, Inc., New York, N.Y. 869,236, pub. 2–25–69. Cl. 6.
United States Machinery, Inc., North Billerica, Mass. 869,361, pub. 2–25–69. Cl. 28.
U.S. Mobile Homes, Inc., Henderson, N.C. 747,151, canc. Cl. 19.
U.S. Servicator Corp., New York, N.Y. 747,166, canc. Cl. 21.
Universal Oil Products Co., d.b.a. UOP Bostrom Division, Des Plaines, Ill. 869,304, pub. 2–25–69. Cl. 19.
Uthe Technology, Inc., Mount View, Calif. 869,313, pub. 2–25–69. Cl. 21.
Valencia, Irvine, Growers, East Irvine, Calif. 256,970, ren. 5–13–69. Cl. 46.
Valle's Steak House, Portland, Maine. 869,532, pub. 2–25–69. Cl. 100.
Vanant Co., Inc., Milwaukee, Wis. 747,234, canc. Cl. 23.
Vermont Prints: *See*—
Wilson Sports Equipment Co., Inc.
Veraltron, Inc., Washington, D.C. 869,364, pub. 2–25–69. Cl. 23.
Villager, Inc., The, Philadelphia, Pa. 869,438, pub. 2–25–69. Cl. 39.
Virtis Co., Inc., The, Gardiner, N.Y. 869,380, pub. 2–25–69. Cl. 26.
Virtis Co., Inc., The, Gardiner, N.Y. 869,393, pub. 2–25–69. Cl. 31.
Wallace Business Forms, Inc., Chicago, Ill. 869,414, pub. 2–25–69. Cl. 37.
Wallsten, Arthur, d.b.a. Wallsten Tackle Co., Boca Raton, Fla. 513,388, ren. 5–13–69. Cl. 22.
Wallsten Tackle Co.: *See*—
Wallsten, Arthur.
Ward Industries Corp., Syracuse, N.Y. 747,239, canc. Cl. 24.
Warner Co., Philadelphia, Pa. 512,600, ren. 5–13–69. Cl. 10.
We Sit Better, Inc., Chicago, Ill. 869,529–30, pub. 2–25–69. Cl. 100.
Weber Ltd. Manufacturers of Electrical Accessories & Apparatus, Emmenbrucke, Switzerland. 747,374, canc. Cl. 21.
Wells Aluminum Corp., North Liberty, Ind. 747,109, canc. Cl. 12.
West Chemical Products, Inc.: *See*—
West Disinfecting Co.
West Disinfecting Co., to West Chemical Products, Inc., Long Island City, N.Y. 512,584, ren. 5–13–69. Cl. 52.
Whaley-Eaton Corp., Washington, D.C. 509,957, ren. 5–13–69. Cl. 38.
Whitehall Pharmacal Co., to American Home Products Corp., New York, N.Y. 510 404, ren. 5–13–69. Cl. 51.
Whitman Publishing Co., Racine, Wis. 869,328, pub. 2–25–69. Cl. 22.
Wilrite Products, Inc., Cleveland, Ohio. 747,187, canc. Cl. 21.
Wilson Sporting Goods Co., from Wilson Sporting Goods Co., River Grove, Ill. 869,428, pub. 2–25–69. Cl. 39.
Wilson Sports Equipment Co., Inc., d.b.a. Vermont Prints, Rutland, Vt. 869,544, pub. 2–25–69. Cl. 106.
Wingback Inc., New York, N.Y. 869,389, pub. 2–25–69. Cl. 28.
Winzen Research, Inc., Minneapolis, Minn. 869,209, pub. 2–25–69. Cl. 1.
Wood, John, Co.: *See*—
Wood, John, Mfg. Co., Inc.
Wood, John, Mfg. Co., Inc., to John Wood Co., Conshohocken, Pa. 510,396, ren. 5–13–69. Cl. 34.
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Woolery Machine Co., Minneapolis, Minn. 512,731, ren. 5–13–69. Cl. 23.
Woolsey Marine Industries, Inc., New York, N.Y. 869,375, pub. 2–25–69. Cl. 23.
World Exports, Inc., Miami, Fla. 747,154, canc. Cl. 21.
Wyeth Inc., Philadelphia, Pa., to American Home Products Corp., New York, N.Y. 507,245–6, ren. 5–13–69. Cl. 18.
Y & S Candies Inc.: *See*—
National Licorice Co.
Yeomans Brothers Co., Melrose Park, Ill. 510,855, ren. 5–13–69. Cl. 23.
Zefex, Inc., Rockford, Ill. 869,359, pub. 2–25–69. Cl. 23.
Ziegler Tackle Co., Haslett, Mich. 869,341, pub. 2–25–69. Cl. 22.

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PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of April 1969

Examiner affirmed	167
Examiner affirmed in part	16
Examiner reversed	22
Total	205

Certificates of Correction for the Week of May 20, 1969

3,288,599	3,370,222
3,344,196	3,370,386
3,363,930	3,370,593
3,364,557	3,371,699
3,367,970	3,372,057
3,368,873	3,372,060
3,369,203	3,372,111
3,370,015	3,372,251

Disclaimer

3,075,167.—*Robert J. Kinkaid,* Harrisburg, Pa. PANEL CONNECTOR WITH FLAG-TYPE TERMINALS. Patent dated Jan. 22, 1963. Disclaimer filed Mar. 19, 1969, by the assignee, *AMP Incorporated.*

Hereby enters this disclaimer to claims 1 and 2 of said patent.

Patent Abstracts

The provision in Rule 72(b) of the Rules of Practice in Patent Cases, relating to inclusion of a "brief abstract of the technical disclosure" in applications for patent, has now been in effect for two and one-half years.

Instructions regarding abstract preparation were published at 831 O.G. 1328, October 25, 1966, and at about the same time a pamphlet entitled "Guidelines for the Preparation of Patent Abstracts" was published and made available to personnel concerned with the preparation and review of abstracts of the type noted.

Abstracts are becoming more and more significant in the field of mechanized and computerized prior art retrieval. It is therefore important that they reach the optimum quality level at the earliest possible date.

During the past year abstracts, in a random sample of approximately 1000 allowed applications, were audited or reviewed for purposes of determining degree of compliance with the aforenoted instructions and guidelines. Steady improvement in the quality of the abstracts was noted in the course of the review. The review clearly indicated, however, a need for further improvement as well as a need for certain modifications and revisions in the earlier published guidelines. There also appeared to be a need for reemphasis of portions of the guidelines.

Accordingly, a revised set of guidelines consonant with the needs suggested by the audit have been promulgated, and are set forth below for use in the preparation and review of patent abstracts.

Guidelines for the Preparation of Patent Abstracts

Background

The Rules of Practice in Patent Cases require that each application for patent include an Abstract of the Disclosure, Rule 72(b).

The content of a patent abstract should be such as to enable the reader thereof, regardless of his degree of familiarity with patent documents, to ascertain quickly the character of the subject matter covered by the technical disclosure and should include that which is new in the art to which the invention pertains.

The abstract is not intended nor designed for use in interpreting the scope or meaning of the claims, Rule 72(b).

Content

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is *new* in the art to which the invention pertains.

If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure.

If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement.

In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or a use thereof.

If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following: (1) if a machine or apparatus, its organization and operation; (2) if an article, its method of making; (3) if a chemical compound, its identity and use; (4) if a mixture, its ingredients; (5) if a process, the steps. Extensive mechanical and design details of apparatus should not be given.

With regard particularly to chemical patents, for compounds or compositions, the general nature of the compound or composition should be given as well as the use thereof, e.g., "The compounds are of the class of alkyl benzene sulfonyl ureas, useful as oral anti-diabetics." Exemplification of a species could be illustrative of members of the class. For processes, the type reaction, reagents and process conditions should be stated, generally illustrated by a single example unless variations are necessary.

New Applications Received During March 1969

Patents	8139
Designs	537
Plant Patents	5
Reissues	28
Total	8709

Issue—May 20, 1969

Patents	1300—No. 3,444,560 to No.	3,445,859, incl.
Designs	101—No. 214,154 to No.	214,254, incl.
Plant Patents	2—No. 2,887 to No.	2,888, incl.
Total	1408	

Language and Format

The abstract should be in narrative form and generally limited to a single paragraph within the range of 50 to 250 words. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should sufficiently describe the disclosure to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "This disclosure concerns," "The disclosure defined by this invention," "This disclosure describes," etc.

Responsibility

Preparation of the abstract is the responsibility of the applicant. Background knowledge of the art and an appreciation of the applicant's contribution to the art are most important in the preparation of the abstract. The review of the abstract, for compliance with these guidelines, with any necessary editing and revision on allowance of the application is the responsibility of the examiner.

Sample Abstracts

A heart valve with an annular valve body defining an orifice and having a plurality of struts forming a pair of cages on opposite sides of the orifice. A spherical closure member is captively held within the cages and is moved by blood flow between open and closed positions in check valve fashion. A slight leak or backflow is provided in the closed position by making the orifice slightly larger than the closure member. Blood flow is maximized in the open position of the valve by providing an inwardly convex contour on the orifice-defining surfaces of the body. An annular rib is formed in a channel around the periphery of the valve body to anchor a suture ring used to secure the valve within a heart.

A method for sealing, by application of heat, overlapping closure panels of a folding box made from paperboard having an extremely thin coating of moisture-proofing thermoplastic material on opposite surfaces. Heated air is directed at the surfaces to be bonded, the temperature of the air at the point of impact on the surfaces being above the char point of the board. The duration of application of heat is made so brief, by a corresponding high rate of advance of the boxes through the air stream, that the coating on the reverse side of the panels remains substantially non-tacky. The bond is formed immediately after heating within a period of time for any one surface point less than the total time of exposure to heated air of that point. Under such conditions the heat applied to soften the thermoplastic coating is dissipated after completion of the bond by absorption into the board acting as a heat sink without the need for cooling devices.

Amides are produced by reacting an ester of a carboxylic acid with an amine, using as catalyst an alkoxide of an alkali metal. The ester is first heated to at least 75° C. under a pressure of no more than 500 mm. of mercury to remove moisture and acid gases which would prevent the reaction, and then converted to an amide without heating to initiate the reaction.

RICHARD A WAHL,
Assistant Commissioner.

Apr. 23, 1969.

TITLE 37—PATENTS, TRADEMARKS, AND COPYRIGHTS

Chapter 1—Patent Office, Department of Commerce

PART 1—RULES OF PRACTICE IN PATENT CASES

Requirements for Amendments to Applications After Allowance

On January 9, 1969, notice of proposed rule making regarding the revision of § 1.312, Title 37, Code of Federal Regulations, dealing with amendments to applications after allowance, was published in the Federal Register (34 F.R. 324). Interested persons were given over 30 days in which to submit written comments, suggestions, or objections regarding the proposed revision.

Full consideration having been given to all comments that were received in response to the public notice, the revision originally proposed is hereby adopted without change and is set forth below.

Effective date: This revision shall become effective upon publication in the Federal Register.

EDWARD J. BRENNER,
Commissioner.

Approved: Apr. 18, 1969.
MYRON TRIBUS,
Assistant Secretary for Science and Technology.

Therefore, under the authority contained in section 6 of the act of July 19, 1952 (66 Stat. 792; 35 U.S.C. 6), the Patent Office is amending Part 1 of Title 37 of the Code of Federal Regulations as follows:

By revising § 1.312 to read as follows:

§ 1.312 *Amendments after allowance.*

Amendments after the notice of allowance of an application will not be permitted as a matter of right. However, such amendments may be made if filed not later than the date the issue fee is paid, on the recommendation of the primary examiner, approved by the Commissioner, without withdrawing the case from issue.

[F.R. Doc. 69-4900; Filed, Apr. 23, 1969; 8:48 a.m.]

Published in 34 F.R. 6843, 6844; Apr. 24, 1969

Rules of Practice in Patent Cases

[37 CFR Part 1]

Written Declaration

The Patent Office is considering a revision of the rule relating to the use of a written declaration. The proposed revision is designed to permit a declaration to be used in all situations where an oath is required.

Notice is hereby given, therefore, that under the authority contained in Section 6 of the Act of July 19, 1952 (66 Stat. 792; 35 U.S.C. 6), the Patent Office proposes to amend Part 1 of Title 37, Code of Federal Regulations, by revising § 1.68 to read as follows:

§ 1.68 *Declaration in lieu of oath.*

Any document to be filed in the Patent Office and which is required by any law, rule, or other regulation to be under oath may be subscribed to by a written declaration. Such declaration may be used in lieu of the oath otherwise required, if, and only if, the declarant is, on the same document, warned that willful false statements and the like are punishable by fine or imprisonment, or both (18 U.S.C. 1001) and may jeopardize the validity of the application or any patent issuing thereon. The declarant must set forth in the body of the declaration that all statements made of his own knowledge are true and that all statements made on information and belief are believed to be true.

All persons who desire to submit written data, views, arguments, or suggestions for consideration in connection with this proposal are invited to forward the same to the Commissioner of Patents, Washington, D.C. 20231, on or before May 26, 1969. An oral hearing will not be scheduled.

EDWARD J. BRENNER,
Commissioner of Patents.

Approved: Apr. 18, 1969.
MYRON TRIBUS,
Assistant Secretary for Science & Technology.

[F.R. Doc. 69-4901; Filed, Apr. 23, 1969; 8:49 a.m.]

Published in 34 F.R. 6852; Apr. 24, 1969

Erratum

In the OFFICIAL GAZETTE of April 1, 1969, vol. 861, in the List of Patentees, on page iii, first column, lines 24 and 25, strike out ", to Baldwin, D. H., Company"; on page iv, first column, lines 6 and 7 from the bottom of the column, strike out "Baldwin, D. H., Company: *See*—Alder, Hans, Horowits, Norman, and Spigner, Philip. 3,436,156."

Patents Available for Licensing or Sale

D. 212,810. GAME BOARD. Peter Capri, 450 Amsterdam Ave., New York, N.Y., 10024.

3,045,498. SNAP DEVICE. Soc. Lorena S.R.L., Corso Europa 20, Milan, Italy.

3,190,969. METHOD FOR STEREOPHONIC RE-RECORDING. Edward M. Mattis, 1037 SE. 12th Way, Fort Lauderdale, Fla., 33316.

3,221,697. BOATS WITH TWO OR MORE HULLS. Pier Luigi Allegretti, Piazza S. Quirico, 3 P. P., Lucca, Italy.

3,232,540. SPRAY GUN FOR TWO-COMPONENT PAINTS WITH SEPARATE CONCENTRICAL NOZZLES. Ugo Cassanmagnago, Via E. Toti Angolo, Via Oberdan, Bareggia di Macherio, Milan, Italy.

3,345,698. WEB DOFFING DEVICE FOR CARDING MACHINES, WITH BLADES OR WIRES MOVING IN PLANES TANGENT TO THE DOFFER. Carlo Degli Antoni, Via Roma 5, Biella, Italy.

3,403,502. AUTOMATIC CENTERING AND CENTRIFUGAL DRAGGING DEVICE OF COPS FOR SPINNING AND TWISTING SPINDLES. Bruno Giacomo Caminada, Via C. Treves, Trezzano Sul Naviglio, Italy.

3,408,844. APPARATUS FOR THE PRODUCTION OF BENT, SERPENTINE-SHAPED FINNED PIPE REGISTERS FROM CROSS-ROLLED FINNED PIPES. VEB Maschinen- und Apparate-Bau Schkeuditz, Schkeuditz, Germany. Correspondence to: Tab T. Thein, 520 Fifth Ave., New York, N.Y., 10036.

3,430,264. COLLAR HAVING A TUBE-LIKE CONSTRUCTION. Cornelius Beukenkamp, New York, N.Y. Correspondence to: Sherman Levy, Suite 602, Victor Bldg., 724 9th St. NW., Washington, D.C., 20001.

3,433,484. GAME APPARATUS WITH REMOVABLE PEG PLAYING PIECE ADVANCING MEANS. Delmar E. Wallenmeyer, P.O. Box 1114, Riverbank, Calif., 95367.

2,947,739. PROCESS FOR THE HYDROGENATION OF LIGNIN AND LIGNOCELLULOSIC MATERIALS. Franco Gaslini, Milan, Italy. Correspondence to: Burns, Doane, Benedict, Swecker & Mathis, 815 Connecticut Ave. NW., Washington, D.C., 20006.

3,062,722. THERAPEUTIC 2 - AMINOETHANETHIO ORATE. Domenico Garofalo, Novara, Italy. Correspondence to: Burns, Doane, Benedict, Swecker & Mathis, 815 Connecticut Ave. NW., Washington, D.C., 20006.

The following 3 patents are offered by: Adalberto Sussman Steinberg, Via Frassinetti 25, Milan, Italy.

3,123,392. TIGHTENING DEVICE ESPECIALLY FOR SKI SHOES.

3,258,820. PULL FASTENING DEVICE FOR SHOES AND MORE PARTICULARLY FOR SKI SHOES.

3,292,222. REVERSE TENSIONING LEVER DEVICE FOR JOINING TWO BORDERS TO BE UNITED.

Madison Research and Development Corporation is prepared to sell one or more of the following 4 patents, or to grant licenses thereunder at reasonable terms and conditions.

Inquiries regarding these patents may be addressed to: Madison Research and Development Corporation, % William H. Cochran II, P.O. Box 246, Stonington, Conn.

3,075,865. TUFTED PRODUCTS.

3,075,867. TUFTED PRODUCTS.

3,383,259. METHOD OF MAKING A TUFTED FABRIC.

3,348,992. TUFTED PRODUCTS.

Grefco, Inc., a subsidiary of General Refractories Company is prepared to grant non-exclusive licenses upon reasonable terms under the following 7 patents.

Applications for licenses should be addressed to: Grefco, Inc., 1520 Locust St., Philadelphia, Pa., 19102, Attn: Patent Counsel.

2,665,813. HIGH FLOW RATE MINERAL FILTER AID.

2,698,251. METHOD OF MANUFACTURING SILICEOUS INSULATING MATERIAL.

2,698,256. SILICEOUS COMPOSITION AND METHOD FOR MANUFACTURING THE SAME.

2,783,011. DUPLEX SLEEVE PALLET.

2,801,065. MATERIALS-HANDLING DEVICE.

2,695,839. METHOD AND COMPOSITIONS FOR KILLING WEEDS.

2,695,840. METHODS AND COMPOSITIONS FOR KILLING WEEDS.

General Electric Company is prepared to grant non-exclusive licenses under the following 22 patents upon reasonable terms to domestic manufacturers.

Applications for license under the following patent may be addressed to: General Electric Company, Patent Counsel, Silicone Products Department, Chemical and Metal Division, Waterford, N.Y., 12188.

3,172,874. ORGANOSILICON POLYUREA COMPOSITIONS AND METHOD FOR PREPARING THE SAME.

Applications for license under the following patent may be addressed to: Division Patent Counsel, Power Transmission Division, General Electric Company, 6901 Elmwood Ave., Philadelphia, Pa., 19142.

3,408,545. SEMICONDUCTOR RECTIFIER WITH IMPROVED TURN-ON AND TURN-OFF CHARACTERISTICS.

Applications for license under the following patent may be addressed to: Patent Counsel, Communication Products Department, General Electric Company, Lynchburg, Va., 24502.

3,428,755. HYBRID TERMINATION SWITCH RESPONSIVE TO RINGING SIGNAL.

Applications for license under the following 2 patents may be addressed to: Patent Counsel, Contractor Equipment Division, General Electric Company, 1285 Boston Ave., Bldg. 21ES, Bridgeport, Conn., 06062.

3,421,123. ELECTRIC CIRCUIT BREAKER WITH MAGNETIC TRIPPING MEANS.

3,421,128. SERIES-CONNECTED ELECTRICAL CIRCUIT BREAKER ASSEMBLY.

Applications for licenses under the following 3 patents may be addressed to: Patent Counsel, Electronic Systems Division, General Electric Company, Legal Section, Bldg. 1, Rm. 36, Court Street Plant, Syracuse, N.Y., 13201.

3,067,281. UNDERWATER OBJECT LOCATOR AND VIEWER.

3,337,803. DATA TRANSMISSION SYSTEM.

3,366,933. HIGH FREQUENCY TRANSIENT RECORDER.

Applications for license under the following 5 patents may be addressed to General Electric Company, Patent Counsel, Housewares Division, 1285 Boston Ave., Bridgeport, Conn., 06602.

3,393,293. BATTERY OPERATED CIGARETTE LIGHTER.

3,396,265. ELECTRICALLY HEATED BEDCOVER OVERTEMPERATURE CONTROL.

3,410,984. FLEXIBLE ELECTRICALLY HEATED PERSONAL WARMING DEVICE.

3,418,454. ELECTRIC BEDCOVER OVERTEMPERATURE CONTROL SYSTEM.

3,419,705. HEATER FILAMENT FOR AN ELECTRICAL CIGARETTE LIGHTER.

Applications for licenses under the following 8 patents may be addressed to: General Electric Company, Patent Counsel, Insulating Materials Department, Bldg. 33, Rm. 209, One River Road, Schenectady, N.Y., 12305.

2,906,678. PROCESS OF IRRADIATING POLYETHYLENE AT ELEVATED TEMPERATURES.

2,906,679. IRRADIATED POLYETHYLENE.

2,914,450. PROCESS FOR IRRADIATING FLAT STOCK ORGANIC POLYMERS.

2,989,111. FLAKE MICA SEPARATING AND FILM FORMING MACHINE.

3,033,727. PROCESS FOR MAKING VOID-FREE INSULATED CONDUCTORS.

3,036,990. WHOLLY AROMATIC POLYESTERS FROM HYDRO-QUINONE, ISOPHTHALIC AND TEREPHTHALIC ACID REACTANTS.

3,084,114. IRRADIATED FILLER-CONTAINING POLYETHYLENE.

3,330,748. METHOD AND APPARATUS FOR IRRADIATING ORGANIC POLYMERS WITH ELECTRONS.

Erratum

In the OFFICIAL GAZETTE of Mar. 4, 1969, among the patents listed as being available for licensing or sale offered by: Patent Counsel, Appliance and Television, General Electric Company, Appliance Park, Louisville, Ky., 40225, Patent "3,309,717" should have been as follows: 3 409,717, PROCESS FOR IMPROVING RESISTANCE OF THERMOPLASTIC MATERIALS TO ENVIRONMENTAL STRESS-INDUCED CRAZING, AND PRODUCT PRODUCED THEREBY.

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF MAY 5, 1969

PATENT EXAMINING GROUPS	Actual Filing Date of Oldest New Case Awaiting Action
*Denotes oldest new application.	
CHEMICAL EXAMINING GROUPS	
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—M. STERMAN, Director. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	4-06-67
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Director. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	8-02-66
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—L. J. BERCOVITZ, Director. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping, and Treating Processes.	1-18-67
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—M. STERMAN, Acting Director. Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	*7-18-66
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Director. Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	1-05-67
ELECTRICAL EXAMINING GROUPS	
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—W. S. COLE, Director. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	5-19-67
SECURITY, GROUP 220—S. BOYD, Director. Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	8-29-66
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—S. BOYD, Acting Director. Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	*5-25-66
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Director. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	2-17-67
PHYSICS, GROUP 280—R. L. EVANS, Director. Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	7-12-67
DESIGNS, GROUP 290—S. BOYD, Director. Industrial Arts; Household, Personal and Fine Arts.	6-11-68
MECHANICAL EXAMINING GROUPS	
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Director. Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	9-01-67
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Director. Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders Woodworking; Tools; Cutlery; Jacks.	*5-02-67
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Director. Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	*5-02-67
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Director. Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	3-11-68
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Director. Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	12-01-67
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—F. H. BRONAUGH, Director. Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	9-12-67

Total number of pending applications (excluding Designs)	186,286
Total number of Design applications pending	3,290

Expiration of patents: The patents within the range of numbers indicated below expire during May 1969, except those which may have expired earlier due to shortened terms under the provisions of Public Law 600, 79th Congress, approved August 8, 1946 (60 Stat. 940) and Public Law 619, 82nd Congress, approved August 23, 1954 (68 Stat. 764), or which may have had their terms curtailed by disclaimer under the provisions of 35 U.S.C. 253. Other patents, issued after the dates of the range of numbers indicated below, may have expired before the full term of 17 years for the same reasons, or have lapsed under the provisions of 35 U.S.C. 151.

Patents	Numbers 2,595,214 to 2,598,658, inclusive
Plant Patents	Numbers 1,091 to 1,100, inclusive

DECISIONS IN PATENT AND TRADEMARK CASES

In the United States Patent Office Before the Board of Appeals

EX PARTE MAINO DES GRANGES

Appeal No. 733—05. Decided February 5, 1968

1. PATENTABILITY—REFERENCE—FOREIGN PATENTS—GERMAN AUSLEGESCHRIFT.

"The event * * * [Auslegeschrift issued] represents in the German practice the conclusion of the prosecution of the application before the Examiner, with the formal indication by the Examiner that the case is considered allowable, a time for paying a 'publication' fee (which may be accepted late), and the publication (which can be postponed) of the application with the issuance of the specification in printed form. The critical factors to be considered relate to what rights come into being on the date of this event, rather than to what language is used. According to the German law, the publication of the allowed application at this time confers and marks the beginning of the exclusive rights which are conferred by a patent."

2. SAME—SAME—SAME—SAME.

"The rights which come into being on the date of publication of the allowed application are the full patent rights. Acts of making, using, selling, etc., by others of the subject matter protected, after the date of this publication, constitute acts of infringement, in the same manner and to the same extent as if the formal order of granting a patent had been executed, and suits for infringement may be initiated and prosecuted by the owner of the rights. The published allowed application is equivalent to a patent with respect to the existence and exercise, by the owner, of the rights of a patentee and the invention can properly be said to have been patented from the date of the publication."

DENIED.

Dezsoe Steinherz for appellants.

Before FEDERICO, ASP and LIDOFF, *Examiners-in-Chief*

FEDERICO, *Examiner-in-Chief*.

This is an appeal from the final rejection of all the claims in the case on the ground that appellants are barred a patent under the provisions of paragraph (d) of section 102 of title 35.

The following publications are referred to:

German Auslegeschrift, 1,162,674, Feb. 6, 1964.
German Patentblatt, column 3843, July 23, 1964.
German Patentschrift, 1,162,674, Aug. 13, 1964.

Section 102 of title 35 provides that a patent cannot be obtained if:

(*d*) the invention was first patented or caused to be patented by the applicant or his legal representatives or assigns in a foreign country prior to the date of the application for patent in this country on an application filed more than twelve months before the filing of the application in the United States * * *

The application on appeal was filed on April 21, 1964. About five years earlier, on April 29, 1959, appellants, or appellants' assignee or representative, applied for a patent for the same invention in Germany, and a German patent has since resulted from that application. The question involved in the present appeal is whether or not it can be held that the invention was patented in Germany prior to April 21, 1964. The Examiner held that it was, citing the statement in the antepenultimate paragraph of *Ex parte Gruschwitz and Fritz*, 1963 C.D. 859, 797 O.G. 749, 138 USPQ 505, and appellants disagree.

The issue involves consideration of the practice in Germany relating to the patenting of inventions. An outline of this procedure was set forth in *Ex parte Gruschwitz et al.* and what was recited in that case

will not be repeated here but is to be regarded as incorporated herein by reference and will only be modified or amplified as may be deemed necessary.[1] As in *Ex parte Gruschwitz et al.*, we consider the case in the light of the practice in Germany relating to the patenting of inventions as we understand it to be; if any errors or pertinent omissions have been made, appellants may supply corrections or additions in a request for reconsideration.

Following is a tabulation in chronological sequence of various events and dates relating to appellants' German case, with certain additions of other facts; the numbers correspond to the numbers in the more comprehensive tabulation of events in German practice given in *Ex parte Gruschwitz et al.* (USPQ, page 507):

1.	Application filed in Germany	June 29, 1959.
6.	Auslegeschrift issued	Feb. 6, 1964.
	Application filed in United States	Apr. 21, 1964.
8.	Granting order executed	Date unknown.
10.	Notice published	July 23, 1964.
	(U.S. filing date in Gruschwitz et al. case.)	
11.	Patentschrift published	Aug. 13, 1964.

The Examiner takes the date of the event labeled 6 as marking the date from which the invention is considered as patented in Germany, referring to *Ex parte Gruschwitz et al.*, as has been indicated. However, the *Gruschwitz* case the United States application had been filed between events 10 and 11 and it was only necessary to decide that 11, the second printing of the specification, was not the critical date. Hence the paragraph referred to by the Examiner is *dicta*, and was indicated as such, and the question must be considered on its merits regardless of whether the result is the same as or different from that there expressed.

[1] The event labeled 6 represents in the German practice the conclusion of the prosecution of the application before the Examiner, with the formal indication by the Examiner that the case is considered allowable, a time for paying a "publication" fee (which may be accepted late), and the publication (which can be postponed) of the application with the issuance of the specification in printed form. The critical factors to be considered relate to what rights come into being on the date of this event, rather than to what language is used. According to the German law, the publication of the allowed application at this time confers and marks the beginning of the exclusive rights which are conferred by a patent. This is specifically stated in section 30 of the German statute, paragraphs (1) and (2) of which read as follows:

30. (1) If the application complies with the prescribed requirements (sec. 26) and if the Patent Office does not consider the granting of a patent precluded, then it shall order the publication of the application. Upon publication, the legal effects of the patent provisionally come into force for the subject of the application, in favor of the applicant for the patent (secs. 6, 7 and 8).

(2) The patent application is made public by publishing the name of the applicant and the essential content of his application once in the Patentblatt. In connection therewith notice shall be given that the subject matter of the application is provisionally protected against unauthorized use.[2]

[1] No changes in the review in *Ex parte Gruschwitz et al.* are believed necessary except to point out that the last sentence of footnote 8 (USPQ, page 508, column 2) is in error; this subject will be referred to below. For strict literal accuracy, the sentence to which footnote 4 is attached (USPQ, page 507, column 2) should be amplified by adding "although it is not referred to as such until later, being at that time referred to as the Auslegeschrift number."

[2] A published translation of the statute appears in 61 Patent and Trademark Review (1963) pages 102–9, 125–141, 166–174, 200–3.

Section 6 defines the rights of a patentee as follows:

> The effect of the patent is that the patentee alone is authorized to produce, put on the market, offer for sale, or use, the invention for profit. If the patent has been granted for a process, the effect also extends to the products made directly by the process.

Sections 7 and 8, also referred to in section 30(1), relate to a right of prior user, use by the Government, and other matters not relevant here, with respect to a German patent.[3]

[2] The rights which come into being on the date of publication of the allowed application are the full patent rights. Acts of making, using, selling, etc., by others of the subject matter protected, after the date of this publication, constitute acts of infringement, in the same manner and to the same extent as if the formal order of granting a patent had been executed, and suits for infringement may be initiated and prosecuted by the owner of the rights. The published allowed application is equivalent to a patent with respect to the existence and exercise, by the owner, of the rights of a patentee and the invention can properly be said to have been patented from the date of the publication.

Appellants do not discuss the matters referred to in the preceding paragraphs, but in effect merely disagree with the Examiner's position. The words of 102(d) "the invention was * * * patented" are transformed into "a patent was granted" and apparently the position is that a patent is not granted until the event numbered 8,[4] which occurred after the application was filed in the United States. It is stated that "the question has to be decided whether a German patent in the present case existed prior to the U.S. filing date." But a "patent" in the sense of the document, the "letters patent," prescribed by 35 U.S.C. 153 and 154 does not actually exist as a physical thing in the German system. The question is, in the language of the U.S. statute, whether "the invention was * * * patented" in a foreign country prior to a certain time, and in view of the diverse systems this cannot be taken

[3] Appellants incidentally refer to the fact that any person may file an opposition within three months of event 6, and do not comment in the word "provisionally" appearing in section 30, as to which, nevertheless, something needs to be said.

The courts which handle patent infringement suits in Germany (corresponding generally to U.S. district courts) have no authority to decide on the validity of the patent. If the defendant wishes to challenge the validity of the patent he must file a separate action in the Federal Patent Court (formerly in the Patent Office) to revoke or annul the patent. If such an action has been filed, the infringement court will not suspend the infringement suit as a matter of course, but only on motion with a showing, normally of probably success in the nullity action. If the infringement suit is filed after the publication of the allowed application (event 6) and an opposition proceeding has been instituted, suspension of the infringement suit follows the same practice.

Any person may file an action to revoke or annul a German patent (sections 13, 37; the translation of section 13 in the published translation referred to uses the word "invalid" which is quite inadequate to express the meaning of the German "Das Patent wird auf Antrag (§ 37) für nichtig erklärt * * *" for the word "nichtig." German-English dictionaries give such terms as "nul, void, invalid, empty, transitory;" for "nichtig erklären." "quash, annul, declare null and void" are given). If successful (or to the extent successful), the outcome is not a decision of invalidity in the U.S., but is a nullification or revocation of the patent such that it no longer exists, operative in favor of everybody. Furthermore, the nullification is retroactive back to the beginning of any rights, not merely a cessation of the patent rights on the date of the nullification, and the situation is as if the patent had never existed.

In the case of a published allowed application, if an opposition has been filed and is successful, and the patent refused, the rights which came into being on the publication cease to exist, and this is retroactive as provided in section 35(2) which states that "the effects of the provisional protection shall be regarded as not having come into force." This is the significance of the word "provisionally" in section 30 and, as indicated by the preceding paragraph, is parallel to the results of a nullity action against a patent.

When a patent has been annulled, questions may arise with respect to past transactions where money has been paid to the patentee. There is no absolute right to recover payments, but they might be recovered by a suit, depending upon the circumstances. With respect to a published allowed application, it does not appear that any different principles obtain.

Reference may be made to Benkard, Patentgesetz, Gebrauchsmustergesetz, Patentanwaltegesetz (Beck'sche Kurz-Kommentare), Munich, 1963, 4th edition, particularly pages 397–8, 522–3, 981–2, and World Patent Litigation, BNA, Washington, 1967, chapter on Germany by E. Berkenfeld.

[4] The date of this event does not appear in any published source but would have to be obtained, presumably from the patent file, which is not open to the public as in the U.S. but needs a specific request with reasons, which is served on the patentee.

to be restricted to the system and concepts of U.S. procedure in patenting inventions or to matters of language used.[5]

The decision of the Examiner is affirmed.

AFFIRMED.

ON RECONSIDERATION

Appellants have requested reconsideration of the decision of February 5, 1968 and the matters presented in the request have been considered.

On page 2, in line 2 of the second paragraph, the date April 29, 1959 should be June 29, 1959, as pointed out by appellants.

Appellants have supplied information concerning the event numbered 8 on page 3 of the decision, which shows that the granting order or decision was made out on May 27, and served on June 2, 1964. The precise date is not material as it was acknowledged that the event occurred subsequent to the filing date of the present application.

Appellants acknowledge the invitation to supply corrections or additional details with respect to the procedure in Germany and while several comments are made, we do not find any essential disagreement as to the facts but disagreement with respect to our conclusions. Exception is taken to the use of the word "allowed" and its variations in the opinion. The word "allowed" and its variations are not used in German practice but were used in the opinion to indicate that the application was considered patentable by the Examiner. As pointed out by appellants, the statutory expression is that "if the granting of a patent is not considered precluded," the step of publication follows. At this point the Examiner has finished his examination and has found no objections to the granting of a patent and the above quoted expression corresponds, in general, to the expression in 35 U.S.C. 131 "if on such examination it appears that the applicant is entitled to a patent" and in section 151 "if it appears that applicant is entitled to a patent."

With respect to appellants' discussion, on page 10 of the request for reconsideration, of lines 12–13 on page 5 of the opinion, the words "in the sense of" should be noted. The difference between the German patent document (Urkunde) and the U.S. letters patent is pointed out in *Ex parte Gruschwitz et al.*, referred to in the opinion, at pages 509–510.

In the first full paragraph on page 4 of the request for reconsideration appellants point out that the published application can be opposed by anyone and state "the rights and privileges derived from such publication are terminated if opposition is filed." This is the case only if the opposition is successful. They indicate in the same and in the following paragraph that the result of the opposition might be a modified patent or complete rejection, and that these procedures are not possible in the case of a granted German patent. However, the nullity procedure, also open to anyone, may likewise result in a modified patent or in complete nullification of the rights.

In summary, the basis for our holding is that on the date in question the full patent rights came into existence by operation of law in

[5] The situation arising in this case is believed to be quite rare and would appear to become even rarer under the amendments to the German statute which will come into force later this year and which have not been considered herein. The issue involved in this case is of no consequence with respect to paragraphs (c) and (b) of section 102 since the printed publication suffices for these paragraphs.

favor of the applicant—the same patent rights that exist in favor of any German patentee—and that these patent rights can be exercised from the date in question in the same manner and to the same extent that patent rights can be exercised by any German patentee. The fact that these rights for a period may be termed provisional is considered immaterial since this does not indicate any difference in the nature of the rights and the patent rights in connection with any German patent may also be wiped out by a proceeding which may be instituted by anyone.[6]

The request for reconsideration is granted to the extent that the matters raised have been reconsidered but is denied with respect to making any change in our decision.

DENIED.

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[6] Footnote 5 of the opinion refers to the fact that the German patent statute has been amended. One amendment, removing the exclusion of chemical compounds and food and medicines as such from the field of patentable subject matter, took effect January 1, 1968. The remaining amendments will come into force October 1, 1968; these provide for a deferred examination system, with the publication of the application (unexamined) 18 months from the filing date or effective filing date (there may be three publications, the one at 18 months, the publication referred to in the opinion and a third after the opposition period is over). It will not be possible for one who has applied for a patent in Germany to wait 5 years before applying in the United States.

An English translation of the individual amendments appears in Industrial Property for November 1967, pages 305–312, and a revised translation of the complete statute, as amended, in Industrial Property for May 1968, pages 134–155. Of the sections of the statute referred to or quoted in the opinion, 6, 7, 8, 13, 30(1), and 30(2) first sentence, 35(2) first sentence, and 37 are unchanged.

Another English translation of the revised statute has been published by two German patent attorneys: Dr. Volker Vossius and Dr. Elisabeth Jung, "Patent Act, Trade Mark Act, Gebrauchsmuster Act of the Federal Republic of Germany," Munich, 1967. In their translation, the first sentence of section 30(1) is given as "If the application fulfils the requirements of section 26 and the Patent Office considers the grant of a patent not to be excluded, it shall determine that a provisional patent is to be published" (page 29) and the first sentence of section 35(2) refers to "the publication of the provisional patent pursuant to section 30" (page 33). These expressions, referring to what we called the published allowed (considered patentable by the Examiner) application, are not translations of the German words but evidently give the authors' view of their significance.

United States Court of Appeals
District of Columbia Circuit

EDWARD J. BRENNER, COMMISSIONER OF PATENTS

v.

THE STATE OF ISRAEL, MINISTRY OF DEFENCE

No. 21,554. Decided August 12, 1968

[U.S.App.D.C.—; —F.2d—; 158 USPQ 584]

1. REISSUE—BENEFIT OF FILING DATE OF FOREIGN APPLICATION—35 U.S.C. 119 and 251.

"In fact, Congress placed in the Patent Act another provision, section 251, which in our view controls the disposition of this case [regarding a claim to a priority date under 35 U.S.C. 119]. This section provides that '[w]henever any patent is, through error without any deceptive intention, deemed wholly or partly inoperative or invalid . . . by reason of the patentee claiming more or less than he had a right to claim in the patent,' the Commissioner shall grant him the reissue of the patent with the faults corrected. The plain meaning of this section would seem to cover this situation. The patent issued was partly inoperative (insofar as it did not include the priority right), and the patentee (by failing to file the certified copy, although it did inform the Patent Office of its intention to claim the priority right and the existence of the foreign patent appears on the face of its application) did claim less than he had a right to claim. In any event, the purpose of this section is to allow patentees to correct inadvertent errors without penalty other than the payment of a small fee. This was such a case."

2. SAME—SAME—INTERESTS OF THIRD PARTIES.

"We need only assay the interests of such hypothetical third parties, however, to the extent that we are satisfied that granting the reissue would operate unfairly to deprive them of the fruits of reasonable action taken in reliance on a faulty application. We think that it is altogether possible that section 252 can be read broadly enough to protect a deserving third party in this kind

of situation. In any event, a court sitting in equity, in a dispute between a patentee who had received a reissued patent with the priority right included and an infringer who had, with no warning of any kind, honestly relied on the original patent without the priority right, could justly accommodate these conflicting claims in the light of the particular circumstances."

AFFIRMED.

Sidney Neuman, with whom *Messrs. Thomas E. Smith* and *Ellsworth H. Mosher*, were on the brief for appellee.

Joseph Schimmel (*Jere W. Sears* of counsel), for appellant.

Before EDGERTON, *Senior Circuit Judge*, and WRIGHT and MCGOWAN, *Circuit Judges*

PER CURIAM:

This is an appeal from a judgment of the District Court in a proceeding under 35 U.S.C. § 145.[1] It involves the proper interpretation to be given to two sections of the Patent Act of 1952.[1] There are no facts at issue. It is stipulated that appellee *without deceptive intention* neglected to file in the Patent Office the "certified copy of the original foreign application" for a patent which section 119 requires to be filed "before the patent is granted," if the applicant wishes to avail himself of the benefits of the prior application. Less than three weeks after the U.S. patent was issued by the Patent Office, appellee discovered that, due to a clerical error, it had failed to file the required certified copy. It acted immediately to repair its mistake by sending the Patent Office the necessary copy, and by applying for a reissue of its patent with the priority rights included.

The Board of Patent Appeals considered appellee's reissue application, but concluded that it could not be granted, because of the language in 35 U.S.C. § 119 [2] which makes the filing of a certified copy a specific prerequisite for the obtaining of a right of priority. The District Court, on cross-motions for summary judgment, granted appellee the relief requested. If found that 35 U.S.C. § 251,[3] which provides for the reissue of defective patents, was sufficiently broad in application to overcome the literal language of 35 U.S.C. § 119, and to entitle appellee to a reissued patent to include the priority rights which section 119 gives to applicants who have previously obtained certain foreign patents.[4]

We affirm the District Court's decision. There is force in appellant's contention that section 119 is a mandatory provision which specifically and without equivocation prohibits the granting of a priority right unless its procedural requirements are fulfilled. We also understand the purpose which arguably underlies these stringent requirements,

[1] 35 U.S.C. §§ 119, 251.

[2] No application for patent shall be entitled to this right of priority unless a claim therefor and a certified copy of the original foreign application, specification and drawings upon which it is based are filed in the Patent Office before the patent is granted, or at such time during the pendency of the application as required by the Commissioner not earlier than six months after the filing of the application in this country. Such certification shall be made by the patent office of the foreign country in which filed and show the date of the application and of the filing of the specification and other papers. The Commissioner may require a translation of the papers filed if not in the English language and such other information as he deems necessary.

[3] Whenever any patent is, through error without any deceptive intention, deemed wholly or partly inoperative or invalid, by reason of a defective specification or drawing, or by reason of the patentee claiming more or less than he had a right to claim in the patent, the Commissioner shall, on the surrender of such patent and the payment of the fee required by law, reissue the patent for the invention disclosed in the original patent, and in accordance with a new amended application, for the unexpired part of the term of the original patent. No new matter shall be introduced into the application for reissue.

[4] An application for patent for any invention filed in this country by any person who has . . . previously regularly filed an application for a patent for the same invention in a foreign country . . . shall have the same effect as the same application would have if filed in this country on the date on which the application for patent for the same invention was first filed in such foreign country . . . .

Moreover, 35 U.S.C. § 104 prohibits the introduction of evidence of a date of invention in a foreign country other than by the use of section 119 in any proceedings before the Patent Office or in the courts.

i.e., all the information which a potential infringer or copier may need in order presently to ascertain his rights should be collected in one place where it can easily be found and evaluated. Nevertheless, to ascertain the will of Congress [5] in this very narrow context, care must be taken before concluding that it really intended that a trivial clerical error, such as the one which occurred here, should operate forever to deprive a patent applicant of a priority right to which he would otherwise be entitled.

We do not think it did. **[1]** In fact, Congress placed in the Patent Act another provision, section 251, which in our view controls the disposition of this case. This section provides that "[w]henever any patent is, through error without any deceptive intention, deemed wholly or partly inoperative or invalid . . . by reason of the patentee claiming more or less than he had a right to claim in the patent," the Commissioner shall grant him the reissue of the patent with the faults corrected. The plain meaning of this section would seem to cover this situation. The patent issued was partly inoperative (insofar as it did not include the priority right), and the patentee (by failing to file the certified copy, although it did inform the Patent Office of its intention to claim the priority right and the existence of the foreign patent appears on the face of its application) did claim less than he had a right to claim. In any event, the purpose of this section is to allow patentees to correct inadvertent errors without penalty other than the payment of a small fee. This was such a case.

Neither party to this appeal, although pressed by us to do so, came forward with a lucid explanation of the practical consequences which might ensue from this resolution of their dispute. Particularly in this litigation it is difficult to discern what substantial interest appellee is protecting. It has been over a year since it received the U.S. patent and, under 35 U.S.C. § 102(b), it is impossible for anyone to challenge the patent's validity in an interference proceeding. Hypothetically, however, it is perhaps still possible that appellee may wish (or need) to use the priority right in order to establish a prior art reference,[6] or that it seeks assurance that it will be able to use the priority right in the event it is called upon to assert the validity of the patent in a future infringement suit.[7]

The Patent Office, on the other hand, has not convinced us that granting appellee the priority right through reissue would inevitably operate unfairly to the detriment of third parties. First, it should be pointed out that hypothetical third parties might have been disadvantaged only during the short period between the granting of the patent and its reissue. Second, a potential infringer or copier interested in appellee's patent would, upon looking at the Patent Office records, have immediately been placed on notice that an identified foreign patent existed and that claim for priority founded upon it had been filed; he should not, with this knowledge, have been entitled to rely solely upon appellee's technical failure to file the certified copy of the foreign application.

[2] We need only assay the interests of such hypothetical third parties, however, to the extent that we are satisfied that granting the

[5] Legislative history is cogently cited to us by appellant. See H.R. Rep. No. 1923, 82d Cong., 2d Sess. (1952); S. Rep No. 1979, 82d Cong., 2d Sess. (1952); Hearings on H.R. 3760 Before Subcomm. No. 3 of the Comm. of the Judiciary, 82d Cong., 1st Sess. (1951). Nevertheless, we do not think it dispositive of this issue since it speaks only to the desirability of having the certified copy filed in the Patent Office.

[6] Compare *Eli Lilly & Co. v. Brenner*, 248 F. Supp. 402 (D.D.C. 1965), rev'd, 126 U.S.App.D.C. 171, 375 F.2d 599 (1967), with *Application of Hilmer*, 359 F.2d 859 (CCPA 1966).

[7] See note 4 *supra*.

reissue would operate unfairly to deprive them of the fruits of reasonable action taken in reliance on a faulty application. We think that it is altogether possible that section 252 [8] can be read broadly enough to protect a deserving third party in this kind of situation. In any event, a court sitting in equity, in a dispute between a patentee who had received a reissued patent with the priority right included and an infringer who had, with no warning of any kind, honestly relied on the original patent without the priority right, could justly accommodate these conflicting claims in the light of the particular circumstances.

AFFIRMED.

[8] No reissued patent shall abridge or affect the right of any person or his successors in business who made, purchased or used prior to the grant of a reissue anything patented by the reissued patent, to continue the use of, or to sell to others to be used or sold, the specific thing so made, purchased or used, unless the making, using or selling of such thing infringes a valid claim of the reissued patent which was in the original patent. The court before which such matter is in question may provide for the continued manufacture, use or sale of the thing made, purchased or used as specified, or for the manufacture, use or sale of which substantial preparation was made before the grant of the reissue, and it may also provide for the continued practice of any process patented by the reissue, practice, or for the practice of which substantial preparation was made, prior to the grant of the reissue, to the extent and under such terms as the court deems equitable for the protection of investments made or business commenced before the grant of the reissue.

In the United States Patent Office
Before the Board of Appeals

EX PARTE LEO RUBINOWITZ

Appeal No. 752—67. Decided January 16, 1968

1. DESIGN—PATENTABILITY—COMMON ASSIGNEE—35 U.S.C. 101 AND 171

"It is fundamental that regardless of the filing dates, the entities and the assignments of copending cases, be they the same or different, two patents cannot properly be granted on the basis of a single inventive concept. And this is equally applicable to mechanical and to design cases. 35 U.S.C. 101 and 171. An assignee does not acquire any better legal rights by a common assignment of cases than the individual inventor or inventors thereof would have in the absence of such assignment."

2. SAME—SAME—DOTTED LINES.

Having found that "appellant intends to claim the entire combination as in Gerber, i.e., not only the shroud which is shown in solid lines but also the parts shown therein in dotted lines which correspond to the shapes shown in Gerber," *Held* that "Consonant with the foregoing we have compared the overall appearance of the 'still' design encompassed by both full and dotted lines in this application drawings with that of the Gerber still and are of the opinion that the two designs present the same overall appearance and represent a single design inventive concept."

3. SAME—SAME—COMMON ASSIGNEE—COMMISSIONER'S NOTICE AT 834 O.G. 1615.

"If the present cases were not co-assigned, the only way to overcome the Gerber patent, in our opinion, would be by way of interference proceedings favorable to appellant. Here, as between co-assigned cases, while said parent application contained the present design disclosure and claim at the time the Gerber patent was granted, said application was for a mechanical patent and there was no evidence that a design application would be filed for the same design as Gerber. Accordingly, we are inclined to agree with the Examiner that the assignee is estopped to raise now any question as to the patentee Gerber not being the prior inventor of the design claimed therein and in the present case. Thus, the last paragraph of said notice, 834 O.G. 1615, does not appear to be applicable here."

4. SAME—SAME—SAME.

"Since the instant claim is not patentably distinct from the claim of the Gerber patent and appellant is estopped, by virtue of the common assignment of the two cases and the prior patenting of the Gerber application * * * rejection of the appealed claim is sustained."

APPEAL from the Examiner (B. Ansher) of Group 290. Serial No. 88,183.

AFFIRMED.

William Anthony Drucker and *George W. Price* for appellant.

Before DRACOPOULOS and BREWRINK, *Examiners-in-Chief*, and BENDETT, *Acting Examiner-in-Chief*

DRACOPOULOS, *Examiner-in-Chief*.

This is an appeal from the final rejection of the following claim:

The ornamental design for a still as shown and described.

The reference relied upon is:

Gerber, D. 196,108, Aug. 27, 1963.

The following facts appear pertinent to the consideration of this appeal:

It is admitted by appellant, at page 2 of the brief, that the Gerber patent is co-assigned with the present application.

The Gerber patent issued August 27, 1963, on an application filed January 28, 1963, with the following claim:

The ornamental design for a household still for drinking water and the like, as shown and described.

The instant application was filed October 1, 1965; however, its subject matter was fully disclosed and claimed as a design in an earlier mechanical application of the appellant along with claims to structure of a distilling apparatus, Serial No. 254,286, filed January 28, 1963, now Patent No. 3,278,395, granted October 11, 1966. In the earlier application the Examiner required restriction between the claim to the instant design and the apparatus claims and appellant traversed the requirement but provisionally elected the claims to the apparatus, to which said issued patent is directed.

The record in this case indicates that the Solicitor of Patents ruled, on the particular facts of this case, that it is entitled to the filing date of the earlier case, i.e., January 28, 1963 which, it will be observed, is the same filing date as that of the Gerber patent.

In the Final Rejection, Paper No. 5, the Examiner stated that in view of the Solicitor's said ruling, the previous "rejection of the claim as substantially met by the patent to Gerber under the rationale of 35 U.S.C. 103 is withdrawn" and substituted therefor the following:

"The claim is now rejected as unpatentable over the claim in the Gerber Patent Number D. 196,108, of record on the ground of double patenting. Attention is directed to the fact that a double patenting rejection exists when claims of an application are rejected over claims of another application or patent whose application was co-pending when both the instant application and the issued patent are commonly owned even though there may be no identity of inventorship. (*In re Dunn and Brodhag*, 146 USPQ 479.)"

In his answer, the Examiner revised the above rejection to read "estoppel" instead of "double patenting" in view of the change in the practice dealing with double patenting practice, citing the Commissioner's notice at 834 O.G. 1615 and M.P.E.P. 305.02. He further stated in his statement of the rejection, at page 3 of the answer:

"Therefore, it is the Examiner's position that the claim in the instant application is not considered to be patentably distinct from an appearance standpoint over patented design claim to Gerber (D. 196,108) of record.

"Accordingly, the claim is now rejected on the ground that the assignee, by taking out Patent Number D. 196,108, at a time when the instant application was not claiming the patented invention is now estopped to contend that the patentee is not the prior inventor.

"In view of the foregoing, the claim is finally rejected on the ground of estoppel."

Appellant argues in his appeal brief that the *Dunn and Brodhag* case, supra, is inapplicable here since it was "limited to the consideration of generic and specific claims, a situation which cannot arise in design cases," as held in *Ex parte Wooster*, 29 USPQ 149, but that *Ex parte Wooster*, 29 USPQ 149 and *Ex parte Slettevold*, 29 USPQ 183, holding in effect that separate patents may issue, one to a combinaton and the other to an element of the combination. The brief continues, at pages 4 and 5:

"It is quite clear from the Gerber Design Patent 196,108 that it is to a species contemplated in *Ex parte Wooster* and/or to a combination as contemplated in *Ex parte Slettevold*. In either case the design patented by Gerber is narrow and limited not only to a shroud but to a base, a water receptacle, a cover and electrical elements.

"On the other hand, it seems just as clear that the present application, showing only a shroud, is the generic embodiment and/or single element contemplated at the same time by the cases referred to."

We have given careful consideration to the above and all the other allegations presented in appellant's briefs, as well as to the authorities cited therein; however, we are not persuaded thereby as to reversible error in the Examiner's conclusion that the instant claim is directed to substantially the same design as the claim in the Gerber patent and, thus, cannot support a second patent.

[1] It is fundamental that regardless of the filing dates, the entities and the assignments of copending cases, be they the same or different, two patents cannot properly be granted on the basis of a single inventive concept. And this is equally applicable to mechanical and to design cases. 35 U.S.C. 101 and 171. An assignee does not acquire any better legal rights by a common assignment of cases than the individual inventor or inventors thereof would have in the absence of such assignment.

Turning to appellant's drawing and to the record of this case, particularly to the portions quoted on pages 4 and 5 of the Examiner's answer from appellant's arguments in Paper No. 4, in response to which the Examiner withdrew the rejection of the claim on Welsh, which discloses a cylindrical heat exchange tube having a plurality of longitudinally and radially projecting fins and presents a similar overall appearance as the shroud of the present design, it is clear that appellant intends to claim the entire combination as in Gerber, i.e., not only the shroud which is shown in solid lines and also the parts shown therein in dotted lines and which correspond to the shapes shown in Gerber. The omissions in the instant drawings of the electric cord and the back view of the still do not affect the general overall appearance thereof. We note also that there is nothing artistic or of design value in either the cord or the back of the patent design. Even more important, the claim is drawn to "a still" and not to a shroud, as correctly pointed out by the Examiner. Thus, appellant's arguments in his brief that the claim is limited to the shroud are not consistent with the facts of the case.

[2] Consonant with the foregoing we have compared the overall appearance of the "still" design encompassed by both full and dotted lines in this application drawings with that of the Gerber still and are of the opinion that the two design present the same overall appearance and represent a single design inventive concept.

[3] If the present cases were not co-assigned, the only way to overcome the Gerber patent, in our opinion, would be by way of interference proceedings favorable to appellant. Here, as between co-assigned cases, while said parent application contained the present design disclosure and claim at the time the Gerber patent was granted, said application was for a mechanical patent and there was no evidence that a design application would be filed for the same design as Gerber. Accordingly, we are inclined to agree with the Examiner that the assignee is estopped to raise now any question as to the patentee Gerber not being the prior inventor of the design claimed therein and in the present case. Thus, the last paragraph of said notice, 834 O.G. 1615, does not appear to be applicable here.

[4] Since the instant claim is not patentably distinct from the claim of the Gerber patent and appellant is estopped, by virtue of the common assignment of the two cases and the prior patenting of the Gerber application, for the reasons noted above, the rejection of the appealed claim is sustained.

The decision of the Examiner is affirmed.

AFFIRMED.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,614,916, Hoffmann and Schoene, AGRICULTURAL CHEMICAL COMPOSITIONS COMPRISING 1,2-DIHYDROPYRIDAZINE-3,6-DIONE AND ITS SALTS, filed June 13, 1968, D.C., E.D.N.C. (New Bern), Doc. 766, *Uniroyal, Inc.* v. *Daly-Herring Company*. Consent judgment dismissed without Prejudice, Jan. 27, 1969.

2,736,880, J.W. Forrester, MULTI-COORDINATE DIGITAL INFORMATION STORAGE DEVICE, filed Dec. 5, 1967, D.C. Mass. (Boston), Doc. 67–886–F, *Massachusetts Institute of Technology* v. *Scientific Data Systems*. Judgment, Massachusetts Institute of Technology is the owner; patent is valid; infringed by Scientific Data Systems, who having been granted license is not enjoined from further infringement during the pendency of said license, May 24, 1968. Same, filed Feb. 13, 1968, D.C. Mass. (Boston), Doc. 68–137–F, *Massachusetts Institute of Technology* v. *National Cash Register Co.*

2,775,274, A. E. Andersson, BARK-REMOVING MACHINE HAVING SELF-LIFTING BLUNT-EDGE TOOLS; **2,855,010**, N. G. Leffler, BARKING MACHINE HAVING CENTRIPETALLY BIASED SCRAPERS AUTOMATICALLY SWUNG TO BARK-REMOVING POSITIONS BY AN ONCOMING LOG, filed Jan. 23, 1969, D.C. Oreg. (Portland), Doc. C–69–42, *Kockum Industries, Inc.* v. *Brunette Machine Works, Ltd.*

2,817,195, L. P. Curtin, CLEANING METAL SURFACES; **2,846,342**, same, BONDING COATS FOR METAL; **2,901,385**, same, MICRO-CRYSTALLINE BONDING COATS FOR METAL, filed Feb. 4, 1969, D.C.N.J. (Newark), Doc. 125–69, *Robert E. Gaynor and Joseph Stevens* v. *Diamond Alkali Company and Diamond Shamrock Corp.*

2,846,342. (See 2,817,195.)

2,855,010. (See 2,775,274.)

2,857,867, M. N. Beasley, BACKING FABRIC FEED MEANS FOR TUFTING MACHINES; **2,876,441**, J. H. Boyles, METHOD AND MEANS FOR FEEDING THREAD IN TUFTING MACHINES; **2,906,866**, J. L. Card, METHOD OF AND APPARATUS FOR MAKING PATTERNED TUFTED PILE FABRIC; **3,064,645**, R. T. Card, METHOD AND APPARATUS FOR TUFTING CUT PILE AND LOOP PILE IN THE SAME ROW OF STITCHING, filed Jan. 29, 1969, D.C., E.D. Tenn. (Knoxville), Doc. 5504, *The Singer Company* v. *Lewis Card & Co., Inc. et al.*

2,858,551, B. C. Sidlinger, TRAMPOLINE, filed Jan. 28, 1969, D.C., N.D. Tex. (Dallas), Doc. CA–3–2984–A, *Sidlinger Products Company* v. *Ed Russel, doing business as Olympic Trampoline Company.*

2,859,684, A. C. Polizzi, COFFEE FILTERING RETAINERS, filed Mar. 22, 1963, D.C., W.D.N.Y. (Buffalo), Doc. 10,202, *King Coffee Filter Co., Inc. et al.* v. *Andex Corp. et al.* Stipulation of dismissal with prejudice, Feb. 3, 1969.

2,869,216, Overland, Hill and Seger, CASKET SEALING CONSTRUCTION, filed Apr. 26, 1968, D.C., N.D. Ohio (Cleveland), Doc. C68–301, *F. H. Hill Co., Inc.* v. *National Casket Co., Inc.* Consent decree, second cause of action enjoining defendant from use of words "Floating Bridge" or colorable imitation thereof, Jan. 23, 1969.

2,873,664, B. H. Bunn, BUNDLE TYING MACHINE; **2,898,847**, same, TYING MACHINE, filed Jan. 21, 1969, D.C., M.D. Fla (Tampa), Doc. 69–26–C–T, *B. H. Bunn Company, Inc.* v. *AAA Replacements Parts Company, Inc.*

2,876,441. (See 2,857,867.)

2,898,847. (See 2,873,664.)

2,901,385. (See 2,817,195.)

2,913,046, Sharp and Frymire, SLIDING CLOSURE CONSTRUCTION, filed Dec. 19, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68–2086–AAH, *Northrop Architectural Systems* v. *Marshall Aluminum Products, Inc.*

2,931,383, H. E. Handley, CURB BOX HAVING LOCATING MAGNET THEREIN, filed Dec. 16, 1968, D.C.N.J. (Newark), Doc. C–1336–68, *Handley Industries, Inc.* v. *Valveo, Inc.*

2,954,073, B. B. Junkunc, FOLDING TABLET ARM CHAIR, filed Oct. 13, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c1702, *Bela Seating Company, Inc.* v. *Poloron Products, Inc., and Sam E. Riggs.* Judgment, patent owned by plaintiff, defendant has infringed and is enjoined, Jan. 16, 1969.

2,966,866. (See 2,857,867.)

2,967,623, E. E. Schaefer, DISPLAY HANGER, filed Feb. 11, 1969, D.C., N.D. Ill. (Chicago), Doc. 69c293, *Central Specialties Company* v. *Robert G. Schaefer and Edward E. Schaefer.*

3,043,540, L. M. Greene, AIRPLANE INSTRUMENTS, filed Dec. 31, 1968, D.C., C.D. Calif (Los Angeles), Doc. 68–2129–WPG, *Safe Flight Instrument Corporation* v. *McDonnell-Douglas Corp. et al.* Same, filed Dec. 31, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68–2130–HP, *Safe Flight Instrument Corporation* v. *Lockheed Aircraft Corp. et al.*

3,045,723, R. Gainor, SANITARY CONTAINER CLOSURE WITH DISPENSER, filed Mar. 19, 1968, D.C.N.J. (Newark), Doc. 261–68, *Roselyn Gainor* v. *Warner-Lambert Pharmaceutical Co.* Stipulation and order of dismissal, Jan. 31, 1969.

3,061,812, A. Z. Rachwalski, PULSE-TYPE DEPTH SOUNDER, filed Feb. 4, 1969, D.C., N.D. Okla (Tulsa), Doc. 69–C–14, *Jetronic Industries, Inc.* v. *Lowrance Electronics Manufacturing Corporation.*

3,075,781, Atkinson, Cline and Cunningham, BEARING SEAL, filed Feb. 14, 1969, D.C., S.D. Tex. (Houston), Doc. CA–69–H–153, *Hughes Tool Company* v. *Reed Roller Bit Company.*

3,084,645. (See 2,857,867.)

3,106,321, W. G. Gorman, MINIATURE AEROSOL UNIT, filed Sept. 14, 1965, D.C.N.J. (Newark), Doc. 997–65, *Sterling Drug, Inc.* v. *Oil Equipment Laboratories, Inc. et al.* Order of dismissal, without costs, Jan. 9, 1969.

3,111,584, R. H. Appeldorn, COPY-SHEET AND METHOD FOR PRODUCING COPIES OF GRAPHIC ORIGINALS IN THE FORM OF POSITIVE PROJECTION TRANSPARENCIES, filed Feb. 7, 1969, D.C., E.D. Ill. (Chicago), Doc. 69c264, *Minnesota Mining and Manufacturing Company* v. *Columbia Ribbon and Carbon Manufacturing Co. Inc.*

3,114,349, S. Schuman, STERILIZATION INDICATORS, filed Dec. 27, 1968, D.C., E.D. Mich. (Detroit), Doc. 32147, *Propper Mfg. Co., Inc.* v. *Wil-Sher Associates, Inc.*

3,132,742, Shapiro and Levy MERCHANDISE BAG AND HANGER COMBINATION, filed Aug. 24, 1966, D.C., S.D.N.Y., Doc. 66–C–2690, *Service Poly-Pak Inc.* v. *Cohen Bros. Specialties, Inc. et al.* Order Dismissing action for lack of prosecution with prejudice, Dec. 18, 1968.

3,135,269, E. E. Pauldine, CURLING IRON HAVING DETACHABLE CURLING TUBE, filed June 7, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c956, *Eugene E. Pauldine* v. *Marshall Field & Company.* Judgment for the plaintiff, Jan. 14, 1969. Same, filed Jan. 13, 1969, D.C., N.D. Ill. (Chicago), Doc. 69c61, *Eugene E. Pauldine* v. *J. G. Meshes & Associates, and J. G. Meshes.*

3,138,875, F. L. Christensen, DIAMOND SCRIBER, filed Dec. 31, 1968, D.C. Conn. (New Haven), Doc. 12902, *Tempress Research Co.* v. *Parsons Diamond Products, Inc.* Same, filed Jan. 2, 1969, D.C.N.J. (Newark), Doc. C.5–69, *Tempress Research Co.* v. *Accurate Diamond Tool Corp.*

3,144,665, M. N. Hasha, POWER SPINNER UNIT FOR WELL SWIVELS, filed Dec. 17, 1968, D.C., W.D. La. (Shreveport), Doc. 14302–L, *International Tool Company, Inc.* v. *Hub City Iron Works, Inc. et al.*

3,148,686, H. S. Cournoyer, HAIR STYLING IMPLEMENT WITH RESILIENT PRONG TEETH, filed Nov. 14, 1966, D.C., N.D. Ill (Chicago), Doc. 66c2066, *Grooming Developers Inc.* v. *Arrow Beauty Inc.* Consent decree, defendant permanently enjoined, action dismissed, Mar. 6, 1967.

3,152,594, R. T. Brown, APPARATUS FOR RECOVERING LEAD FROM STORAGE BATTERIES, filed Nov. 28, 1966, D.C., E.D. Mich. (Detroit), Doc. 29291, *Robert T. Brown* v. *Midland Metal Sales Co., Inc. et al.* Stipulation and order of dismissal with prejudice, Dec. 4, 1968.

3,158,362, J. H. Seifarth, METHOD OF BLENDING GRANULAR MATERIALS, filed Jan. 7, 1969, D.C., M.D. Pa. (Scranton), Doc. 69–6, *Flo-tronics* v. *The Young Machinery Co., Inc.*

3,159,525, J. S. Finger, DECORATING SYNTHETIC RESIN PANEL, filed Nov. 27, 1968, D. C. Del. (Wilmington), Doc. 3635, *Johns-Manville Corporation* v. *Reichhold Chemicals Inc.*

3,162,323, W. R. Kromer, METHOD OF AND APPARATUS FOR CARBONATING, COOLING, STORING, DISTRIBUTING AND DISPENSING BEVERAGES, filed June 29, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c1126, *The Dole Valve Company* v. *Perfection Bar Equipment, Inc.* Plaintiff is owner of patent which is invalid; not infringed by defendant. Plaintiff permanently enjoined, Dec. 24, 1968.

3,400,245. (See 3,415,703.)

3,408,093, S. Epstein, TUBULAR CONNECTOR UNION, filed Jan. 13, 1969, D.C., C.D. Calif. (Los Angeles), Doc. 69–83–AAH, *American Metal Products Corp.* v. *Great American Mfg. & Sales.*

3,410,330, J. Matyas, FOLDING DOOR CONSTRUCTION, filed Feb. 4, 1969, D.C., E.D. Mich. (Detroit), Doc. 32306, *John Matyas, doing business as Alliance Metal Products* v. *Great Lakes Hardware.*

3,414,769, R. R. Hoffman, POWER SUPPLY WITH SIMULTANEOUSLY PEAKING POSITIVE AND NEGATIVE OUTPUT VOLTAGES, filed Feb. 5, 1969, D.C., N.D. Ind. (Fort Wayne), Doc. 69–F–16, *Warbash Magnetics, Inc.* v. *Ferromagnetics, Inc., and Robert Brennan.*

3,415,703, C. D. Burgess, PROCESS FOR FACE-SEAMING CARPETING; **3,400,245**, same, SADIRON, filed Dec. 16, 1968, D.C. Del. (Wilmington), Doc. C–3644, *Montgomery Mills Inc. and Consolidated Foods Corp.* v. *Giffen-Burgess Corp., Prentice Hall Corp. Systems.*

Erratum

In the OFFICIAL GAZETTE, vol. 859, page 694, the paragraph beginning with 2,450,462, in the Patent Suits should read as follows:

2,450,462, H. W. Washburn, MASS SPECTROMETRY; **2,-560,032**, same, CONSTANT PRESSURE INLET FOR MASS SPECTROMETERS; **2,587,575**, same, MASS SPECTROMETRY; **2,587,647**, G. W. Pallette, ION SOURCE; **Re. 23,464**, H. W. Washburn, MASS SPECTROMETRY; **2,784,318**, Washburn and Berry, same; **2,775,707**, J. R. Benapfl, HEAT COMPENSATING DEVICE; **2,806,956**, Hall and Robinson, MASS SPECTROMETRY, filed Sept. 13, 1966, D.C.N.J. (Newark), Doc. C–924–66, *Picker X-Ray Corp., Associated Electrical Industries, Ltd.* v. *Consolidated Electrodynamics Corp.* Consent judgment and dismissal with prejudice, Nov. 12, 1968.

PLANT PATENTS

GRANTED MAY 20, 1969

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,887
BLUEGRASS PLANT
Axel Gustaf Jonatan Julen, Karl XI gatan 3, Svalof, Sweden
Filed Oct. 12, 1967, Ser. No. 675,004
Int. Cl. A01h *5/00*
U.S. Cl. Plt.—88 **1 Claim**

A Kentucky bluegrass plant having decumbent and uniform turf characteristics, with a short straw and an angle of repose for the linear leaf blade which approximates ninety degrees. The plant has good resistance to common grass diseases and is a vigorous rhizome producer.

2,888
PEACH TREE
Tom Huston, Miami, Fla., assignor to Peaches of Florida, Inc., Balm, Fla., a corporation of Florida
Filed Oct. 31, 1967, Ser. No. 679,581
Int. Cl. A01h *5/08*
U.S. Cl. Plt.—43 **1 Claim**

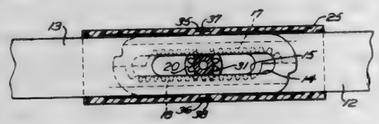
1. A new and distinct variety of peach tree of the yellow-fleshed, freestone fruit-bearing type, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of large, showy, pink colored flowers, good production of firm, yellow-fleshed fruit of the freestone type and of relatively large size and which developes a superior red blush on the skin, a relatively early fruit ripening habit corresponding to the very earliest of freestone varieties, while filling a void in the usual chain of ripening of established commercial varieties, a relatively low chilling requirement of about 400 to 450 hours at or below 45° F. for breaking dormancy and making the new variety adaptable to geographical areas where few peaches are grown commercially, and a superior fruit quality with respect to eating, keeping and shipping qualities.

PATENTS

GRANTED MAY 20, 1969

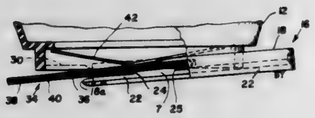
GENERAL AND MECHANICAL

3,444,560
ADJUSTABLE HEADBAND
Joseph A. Northup, Jr., Riverside, R.I., assignor to Welsh Manufacturing Company, a corporation of Rhode Island
Filed July 14, 1967, Ser. No. 653,391
Int. Cl. A42b *1/00, 1/02*
U.S. Cl. 2—8 **3 Claims**



A continuously adjustable headband with overlapping end portions having rack teeth for shifting the ends of the band relative to each other and thereby vary the size of the entire headband. The headband is slotted at both ends. The rack teeth are formed adjacent an edge of each slot so that the rack teeth face each other. A spur gear which is larger in diameter than the width of the slots is used to adjust the headband. A channel receives the overlapping ends of the headband. A cover having angularly extending lugs prevents the channel from spreading.

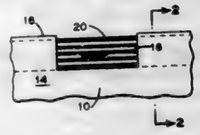
3,444,561
WELDING GOGGLE
Charles J. Boyer, Reading, Pa., assignor to ESB Incorporated, a corporation of Delaware
Filed June 23, 1966, Ser. No. 559,843
Int. Cl. A61f *9/02, 9/06*
U.S. Cl. 2—8 **5 Claims**



A goggle face piece having a window opening provided with track means together with a lens retainer frame having slotted flanges engageable with the track means and arranged so that the retainer may be detachably slid onto the track means by very little sliding movement. Additional lenses may also be mounted on a flip-front, pivotally mounted, supplemental frame.

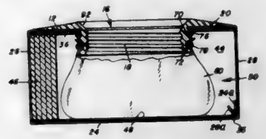
3,444,562
ELASTIC CONSTRUCTION
William L. Chalfin, 1435 E. 101st St., Brooklyn, N.Y. 11236, and Edward Christopher Garvey, Massapequa, N.Y.; said Garvey assignor to said Chalfin
Filed June 18, 1965, Ser. No. 464,951
Int. Cl. A41f *1/00, 1/04, 1/08*
U.S. Cl. 2—338 **4 Claims**

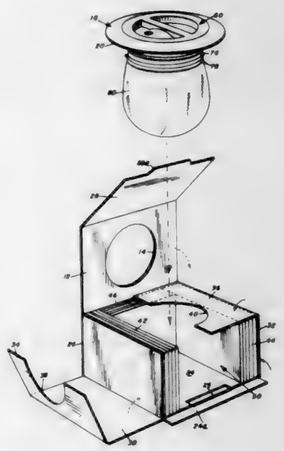
An elastic construction having a body portion formed of a top and bottom ply including a longitudinal edge with a window cut in from and including said edge and a a band of material having a greater degree of elasticity than the body portion secured so it lies over both the



body portion and the window. Preferably, the materials have thermoplastic surface characteristics and are secured by heat and pressure.

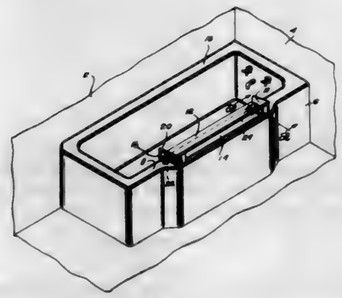
3,444,563
SEALABLE COMMODE
Glenn A. Gordon, Jr., Rte. 1, Thurmont, Md. 21788
Filed May 16, 1967, Ser. No. 638,786
Int. Cl. A47k *11/02*
U.S. Cl. 4—142 **11 Claims**





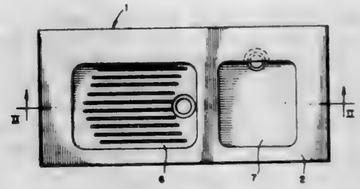
A portable and sealable commode having sidewalls of a lightweight material such as corrugated cardboard of sufficient laminations to support a human body. The side walls and a covering thereabout form a chamber through which there is a top opening. A neck member is insertable through said opening and carries a specimen bag at its lower end. The neck member is supported by a flange extending out over said sidewalls. A handled lid is threadably received in the neck and seals the specimen bag.

3,444,564
TRAY ACCESSORY FOR BATHTUBS
Joseph E. Lavacchia, 984 Main St., Woburn, Mass. 01801
Filed May 24, 1967, Ser. No. 640,906
Int. Cl. A47k *3/12*
U.S. Cl. 4—185 **5 Claims**



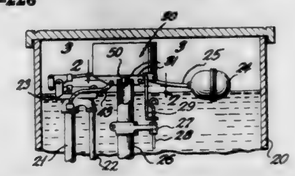
1. An improved tray construction comprising an elongated body portion formed with right angularly disposed edges extending in opposite directions away from the body portion and fastening means transversely attached to the elongated body portion and to the right angularly disposed edges, said fastening means including spaced bracket elements having a plurality of holding members adjustably located therethrough.

3,444,565
SANITARY FITTING
Paul Ankin, Zwingen, Switzerland, assignor to AG fur Keramische Industrie Laufen, Laufen, Switzerland, a corporation of Switzerland
Filed July 13, 1966, Ser. No. 564,820
Int. Cl. A45c *11/00*
U.S. Cl. 4—187 **7 Claims**



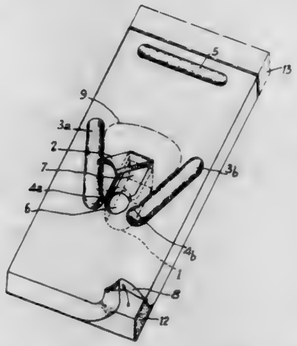
A built-in sanitary fitting having a frame with a horizontal supporting plate. The plate has an opening to receive a sanitary appliance. The upper part of the sanitary appliance projects through the opening so that the upper edge of the sanitary appliance is substantially flush with the upper surface of the supporting plate. A moisture repellant coating is installed on the supporting plate, at least in the vicinity of the opening, which covers the upper edge of the sanitary appliance whereby prior to installing the coating the upper surface of the appliance and the frame may be ground level and any deposits of liquid upon said coating may be easily wiped off into the appliance.

3,444,566
DEVICE FOR INTRODUCING SUBSTANCES INTO A TOILET BOWL TRAP
Clifton T. Spear, % The Diamond Spear Co., Texarkana, Tex. 75501
Continuation-in-part of application Ser. No. 556,374, June 9, 1966. This application June 8, 1967, Ser. No. 644,603
Int. Cl. E03d *9/02;* **E03b** *11/00;* **E03c** *1/046;* **F17d** *1/00*
U.S. Cl. 4—228 **7 Claims**



A container for chemicals and the like mounted upon the overflow pipe of a toilet flush tank and having a connection with the trap refill tube and being chambered so that solutions are supplied in full strength to the bowl trap after completion of the flushing cycle through a unique siphoning action and without any diluting water.

3,444,567
BEDDING DEVICE PROVIDED WITH INSULATING AND EXCREMENT COLLECTING ACCESSORIES
Colette Marie Chassé, Mouez Ar Mor, Le Pontigou, Roscoff 29N, France, and Jean François Hery, 5 Square St.-Pasquier, Nantes 44, France
Filed June 9, 1967, Ser. No. 644,868
Claims priority, application France, July 2, 1966, 2,234
Int. Cl. A61g *7/02, 7/04*
U.S. Cl. 5—90 **3 Claims**



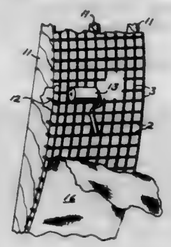
This invention broadly relates to mattress adapted for insulating an infant from excrements and for collecting the latter, while placing the infant in a position which is appropriate for this purpose.

More particularly, the instant invention provides a mattress which has projecting pads adapted to maintain the adequate part of the body above the orifice of a detachable collector which is embedded within the mattress.

3,444,568
LATTICE CORE/FOUNDATION FOR BOAT HULLS
Roger G. Vogelsang, 105 Honeycreek Road, Ada, Mich. 49301
Filed May 11, 1966, Ser. No. 549,361
Int. Cl. B63b *5/00, 43/10*
U.S. Cl. 9—6 **3 Claims**

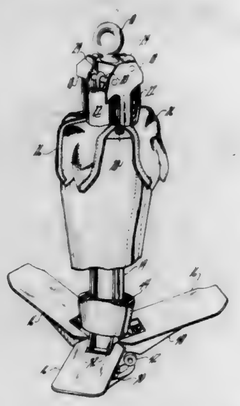
A wall construction for a boat hull formed of flexible sheet material cemented in place on each side of a pri-

mary lattice unit formed of a plurality of mutually intersecting straight strips fitted together by notches in their respective edges, with certain of such notches being tapered to permit curving and contouring of the wall into



the form of a boat hull; also, certain of the strips define apertures between their respective edges permitting the passage by gravity through the lattice unit of water or fluids collecting between the sheet material cemented to the sides of the lattice.

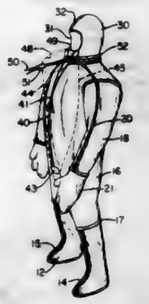
3,444,569
AIR-SEA RESCUE DEVICE WITH FLOTATION COLLAR
Avrom Greenberg, Granby, William H. Brown, Jr., Suffield, Clifford B. Packard, South Glastonbury, and George I. Hackenberger, Jr., Suffield, Conn., assignors to Kaman Corporation, Bloomfield, Conn., a corporation of Connecticut
Filed June 21, 1967, Ser. No. 647,647
Int. Cl. B63c *9/08*; E04g *3/10*
U.S. Cl. 9—14 **4 Claims**



A rescue device having three seats pivotally mounted at the lower end of a shank portion and an eye at the upper end thereof for receiving the hook normally provided on a conventional helicopter hoist cable. A safety strap for each seat is stowed in a fabric cover at the upper end of the shank portion and an annular flotation collar is provided between the fabric cover and the pivoted seats. The collar is split and has a zipper which can be opened to remove the collar from the shank portion.

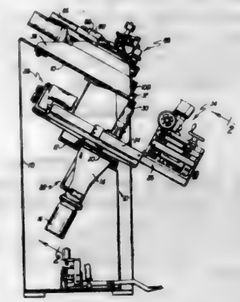
3,444,570
WET-DRY SURVIVAL SUIT
James W. Smith, 946 S. Joliet, Aurora, Colo. 80010
Filed Apr. 18, 1966, Ser. No. 543,100
Int. Cl. B63c *9/08*
U.S. Cl. 9—331 **1 Claim**

A coverall-type survival suit having a connected hood and provided with integral hand and foot covers, is provided with a single front opening, partially closable by a slide fastener, to leave the face of an occupant exposed. A large triangular shaped flap is sealed around the slide



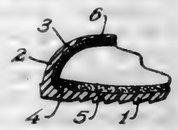
fastener opening and forms with the face opening an entrance for a user. When the slide fastener is closed the flap covers the chin of the occupant and a draw string around the neck and over the flap keeps the occupant's body dry.

3,444,571
APPARATUS FOR APPLYING ADHESIVE TO A SHOE ASSEMBLY
Allen C. Harriman, Brockton, and Robert F. Donahue, Waltham, Mass., assignors to Jacob S. Kamborian, West Newton, Mass.
Filed July 1, 1966, Ser. No. 562,136
Int. Cl. A43d *21/00, 23/00*
U.S. Cl. 12—12.5 **25 Claims**



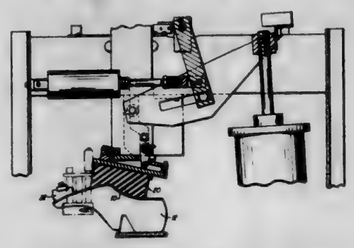
A shoe lasting machine having a shoe support, adhesive applicator, wipers, a shoe end clamping member, and a stop member mounted for movement with the end clamping member to properly locate the adhesive applicator with respect to the bottom of a shoe. The support engages guide mechanism which causes the support and adhesive applicator to follow a predetermined path of movement.

3,444,572
SAFETY FOOTWEAR
Geoffrey Broughton, Sutton-in-Ashfield, England, assignor to Betts and Broughton Limited
Filed Jan. 19, 1966, Ser. No. 521, 584
Int. Cl. A43d *11/12*
U.S. Cl. 12—142 **3 Claims**



The invention relates to safety footwear having a metal toe cap which is covered to provide added reinforcement and to eliminate the danger of sparks. The footwear includes a sole of synthetic resin, and a seamless molded outer cap integral with the sole and covering the metal toe cap. The resin outer cap is bonded to the metal toe cap. The upper, or a liner, extends inwardly of the metal toe cap.

3,444,573
METHOD OF EFFECTING A TEMPORARY SECUREMENT
Thomas J. Sargent, Milford, N.H., assignor to Jacob S. Kamborian, West Newton, Mass.
Filed July 18, 1967, Ser. No. 654,106
Int. Cl. A43d *9/00, 11/00, 21/00*
U.S. Cl. 12—142 **4 Claims**



There is disclosed herein the temporary attachment of a porous insole to the impervious bottom of a last by means of a cement plug that has a surface adhesion with the last bottom that is released with the passage of time and a mechanical interlock with the insole.

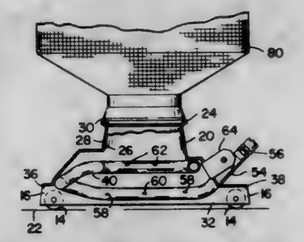
3,444,574
DOCKBOARD CONSTRUCTION
Robert L. Le Clear, Albion, Mich., assignor to F&S Equipment Co., Albion, Mich., a corporation of Michigan
Continuation-in-part of application Ser. No. 576,039, Aug. 30, 1966. This application Oct. 6, 1966, Ser. No. 598,547
Int. Cl. B65g *11/00*
U.S. Cl. 14—71 **9 Claims**



A dockboard having a relatively movable lip member affixed thereto is disclosed. Linkage means couples the lip member with the main platform of the dockboard and coacts with biasing means to position the lip member such that engagement of a truck bed with the same will move it in the proper direction to position it for use.

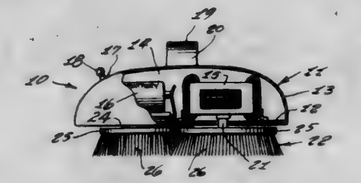
3,444,575
POOL CLEANER
Harry C. Martin, Martinez, Calif., assignor to Louis A. Dore, Jr., Danville, Calif.
Filed May 2, 1967, Ser. No. 635,578
Int. Cl. E04h *3/20*
U.S. Cl. 15—1.7 **7 Claims**

A pool cleaner of the type having a water-pervious debris collection bag mounted on an open-bottomed housing, which can be guided along the bottom of a swimming pool, is equipped with water jets supplied with water from a hose. The arrangement of the jets is such that a vortex similar to an inverted tornado is created which sucks up debris dislodged from the pool bottom by washing jets and, due to its centrifugal momentum, con-



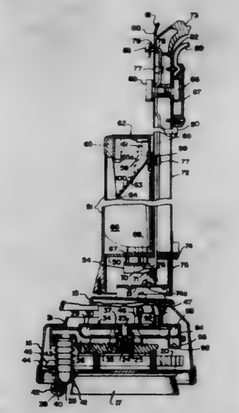
veys even relatively heavy objects into the bag while preventing dispersion of light debris dislodged by the washing jets.

3,444,576
CERAMIC TILE SCRUBBER
Rose R. Daane, 5 Campus Drive, Setauket, N.Y. 11785
Filed Feb. 27, 1967, Ser. No. 618,775
Int. Cl. A47l *11/283, 23/02*; A46b *13/02*
U.S. Cl. 15—28 **1 Claim**



A scrubbing brush, including a hollow handle containing a battery operated motor for rotating several circular brushes on the underside of the handle.

3,444,577
FLUID DISPENSING MEANS FOR A FLOOR SCRUBBER AND POLISHER
David G. Koland, St. Paul, Minn., assignor to Whirlpool Corporation, a corporation of Delaware
Filed May 9, 1967, Ser. No. 637,177
Int. Cl. A47l *11/03*
U.S. Cl. 15—50 **8 Claims**

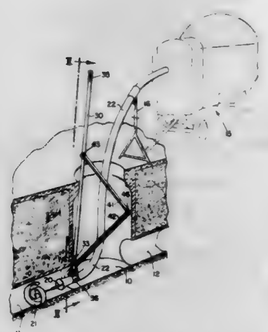


Flow control valve means for selectively supplying cleaning liquid and polish liquid from a combination floor scrubber and polisher apparatus to the floor surface with means for preventing supplying of both liquids simultaneously.

3,444,578
MANHOLE BRACE FOR SEWER ROD GUIDE TUBE

Charles B. Caperton, Montgomery Court Apts., Narberth, Pa. 19072

Filed Dec. 12, 1967, Ser. No. 689,920
Int. Cl. F28g 3/14; B08b 9/02
U.S. Cl. 15—104.3 6 Claims

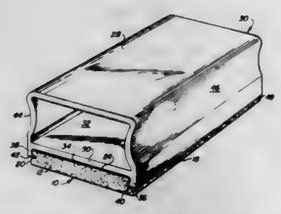


A clamp and brace assembly is provided for use in manholes for holding the sewer rod flexible guide tube stationary against the reaction forces which are set up when the forwardly driven sewer rod encounters an obstruction. The assembly comprises an elongated pole having a clamp at the bottom adapted to be tightened about the guide tube by rotation of the pole. Paralleling the pole and adjacent thereto are upper and lower brace members the adjacent ends of which are connected together at a hinge. The lower end of the lower brace member is secured to the clamp. The upper end of the upper brace member is slidingly engaged with the pole. When the upper end of the upper brace member is pushed slidingly downwardly on the pole, the hinge moves away from the pole toward the rear wall of the manhole and when the hinge abuts against the manhole wall the clamp and brace assembly is wedged against dislodgement.

3,444,579
REVERSIBLE, DISPOSABLE CHALKBOARD ERASER PAD AND HOLDER THEREFOR

William F. Thomford, White Bear Lake, Minn., assignor to Conwed Corporation, a corporation of Delaware

Filed May 17, 1967, Ser. No. 639,240
Int. Cl. A47l 17/00; B43l 21/04
U.S. Cl. 15—118 2 Claims

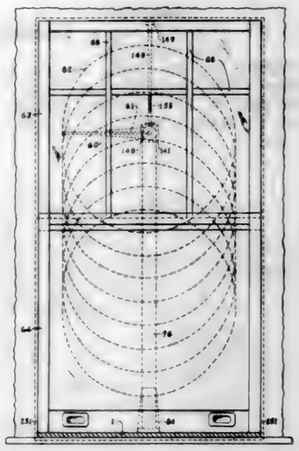


A relatively thin, felted, fibrous pad is used as a chalkboard eraser either alone or held in a holder. One surface of the pad has adhered thereto an extruded thermoplastic net to serve as a stiffener for the pad and, additionally, as a means of removing heavy or soft chalk marks that are difficult to remove, such as marks caused by heavy application of chalk or by use of colored chalk.

3,444,580
AUTOMATIC WINDOW CLEANING DEVICE

Leon Paul Black, 215 E. Chestnut St., Asheville, N.C. 28801

Filed Oct. 19, 1965, Ser. No. 497,803
Int. Cl. A47l 1/02
U.S. Cl. 15—302 6 Claims

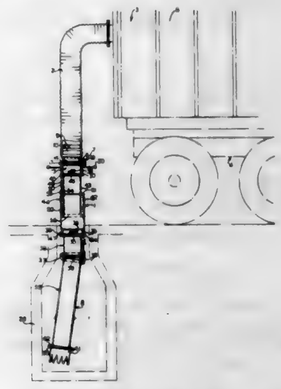


Windows having mullions are cleaned by directing liquid angularly toward the window by way of a nozzle mounted for rotation through a circle whose diameter approximates the width of the window. The arm supporting the nozzle is pivoted on a carriage which moves the length of the window in one cleaning cycle, first in one direction and then in the opposite direction. Thus, the nozzle moving in a helical path covers the whole of the window to be cleaned. After a programmed number of cleaning cycles, compressed air is supplied to the rotating nozzle to dry the window.

3,444,581
DEBRIS COLLECTOR SUCTION PIPE

Ben Daneman, Milwaukee, Wis., assignor to Central Engineering Company, Inc., Milwaukee, Wis., a corporation of Wisconsin

Filed Dec. 6, 1967, Ser. No. 688,499
Int. Cl. A47l 5/38, 9/02; E01h 1/08
U.S. Cl. 15—314 7 Claims

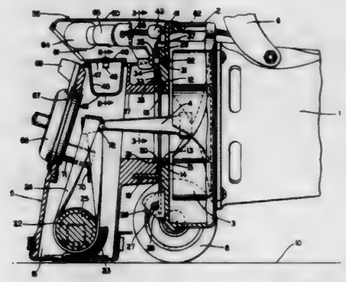


A suction pipe for attachment to the flexible nozzle of a vacuum-type debris collector and for vacuuming debris from a catch basin or the like, including an angulation section having a substantially airtight joint whereby the pipe may be angled so that the suction end thereof can reach the walls of the catch basin; a rotation section whereby the angled pipe may be rotated so that the suction end may be directed to all portions of the outer edges of the catch basin to vacuum debris therefrom; and an extension section whereby the length of the pipe may be extended so that the suction end may reach the bottom of the catch basin.

3,444,582
SUCTION CLEANER NOZZLE CONSTRUCTION

Stanley E. Erbor, Cleveland Heights, Ohio, assignor to Royal Appliance Manufacturing Co., Inc., Cleveland, Ohio, a corporation of Ohio

Original application Nov. 26, 1965, Ser. No. 509,867. Divided and this application Aug. 29, 1967, Ser. No. 664,008
Int. Cl. A47l 5/10, 9/00, 11/20
U.S. Cl. 15—324 4 Claims



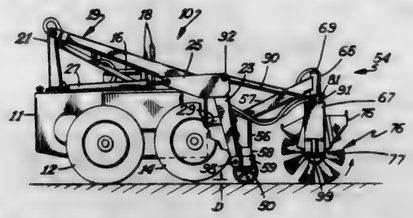
A suction cleaner having a fan housing with a flat vertical front wall having an inlet opening therein, an annular groove in the vertical front wall surrounding the inlet opening, an O-ring in the groove, a suction nozzle detachably connected to the fan housing, the suction nozzle having a rearwardly disposed tubular neck, a flat plate connected to the rear end of the tubular neck, an opening in the flat plate communicating with the interior of the tubular neck, the flat plate clamped to the vertical front wall compressing the O-ring with the suction nozzle communicating with the inlet opening.

A crystal container is located in the upper portion of the nozzle having perforations therein communicating with the interior of the nozzle and means providing communication with the room atmosphere. A pivotally mounted lamp is located above the crystal container to heat the crystals. Latch means is provided for clamping the nozzle to the fan housing.

3,444,583
VEHICLE WITH LIFT-OFF MEANS FOR EASE OF STEERING

Ralph V. Laurel, Minneapolis, Minn., assignor, by mesne assignments, to Melroe Manufacturing Company, Gwinner, N. Dak., a corporation of North Dakota

Filed Apr. 20, 1967, Ser. No. 632,313
Int. Cl. E01h 1/08, 1/05
U.S. Cl. 15—340 11 Claims

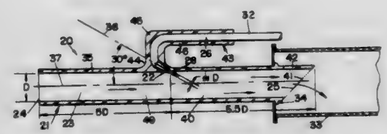


This invention relates to a lift-off means used in steering a vehicle of the type having a front and rear pair of support-surface-engaging driven wheels, and means for varying the relative speed of rotation of the wheels on the right side of the vehicle with respect to those on the left side, to thereby steer or skid the vehicle through a change of direction. The invention is operative when the vehicle is being used to propel or move an implemental attachment such as a sweeper broom and consists of a castered support-surface-engaging means mounted to the vehicle for lifting one pair of the driven wheels off of the support surface, to thereby facilitate steering of the vehicle through the differential rate of rotation of the pair of driven wheels remaining in engagement with the support surface.

3,444,584
AIR EJECTOR TYPE DEVICE

Philip J. Cote, 1643 Mammoth Road, Dracut, Mass. 01826

Filed July 11, 1966, Ser. No. 564,252
Int. Cl. A47l 5/16
U.S. Cl. 15—344 2 Claims

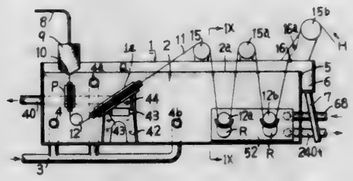


An air ejector device of the type using compressed air to create suction in an elongated tube has a single air injector nozzle inclined rearwardly toward the discharge outlet at an angle of about 30° to the axis of the tube. The air ejector nozzle tapers to a small diameter orifice and is inclined at about 5° laterally to create a helical, or cyclonic, flow path toward the outlet.

3,444,585
APPARATUS FOR HYDRAULICALLY STRETCHING FLEXIBLE WEBS WHILE PASSING THROUGH A LIQUID BATH

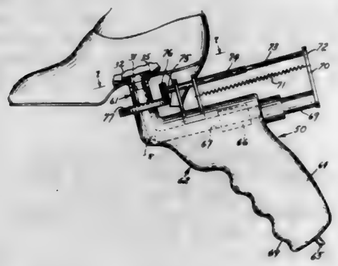
Morio Watanabe, 12/12, 2-chome, Shinden, Adachi-ku, Tokyo-to, Japan

Filed July 7, 1965, Ser. No. 470,133
Claims priority, application Japan, Aug. 31, 1964, 39/4,964; Mar. 1, 1965, 40/11,707, 40/11,708, 40/11,709
Int. Cl. B29c 17/02
U.S. Cl. 18—1 20 Claims



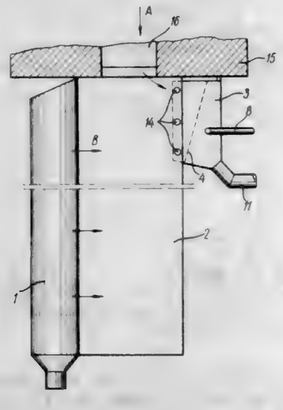
Lateral contraction of a flexible web passing through a liquid treating bath is compensated by a pair of hydraulic lateral stretching units each comprising a pair of parallel guide plates disposed within said bath enclosing predetermined opposed edge zones of the web passing therebetween, and a liquid circulating system operably associated with said bath, to maintain a pair of outwardly directed liquid streams between each pair of guide plates. Lateral stretching of the web is effected thereby by liquid friction with the web surface and adjusted, such as by a control of the extent of said zones, to substantially cancel the lateral contraction resulting from the elongation of the web during its passage through said bath.

3,444,586
MEANS FOR MOLDING SHOE SOLES
Benjamin B. Dubner, 229—02 Merrick Road, Laurelton, N.Y.
Filed Dec. 21, 1966, Ser. No. 603,465
Int. Cl. B29d *31/00*
U.S. Cl. 18—5.1 3 Claims



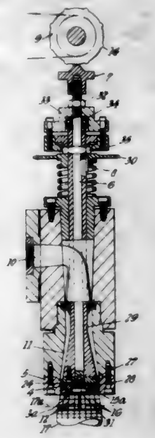
1. An apparatus for molding a shoe sole comprising a sole element having a plurality of recesses corresponding in location with respect to the foot of a wearer to the toe crest immediately forward of the Metatarsal heads, the Metatarsal area, the area forward of the heel, and the periphery of the heel; means for maintaining a molding material in each of said recesses, and means for injecting a molding material in selective manner into each of said recess.

3,444,587
SHAFT FOR THE AIR FLOW COOLING OF FIBERS SPUN FROM A POLYMERIC MELT
Lidia Mikhailovna Polovets, ul. Aviatsii 26, kv. 3; Valentina Ilinichna Beltchenko, ul. Popudrenko 66, kv. 10; and Ljudmila Vasilievna Legut, ul. Shevchenko 47, kv. 7, all of Chernigov, U.S.S.R.
Filed Mar. 1, 1967, Ser. No. 619,817
Int. Cl. D01f *7/06*
U.S. Cl. 18—8 4 Claims



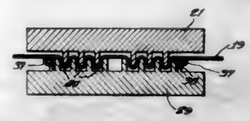
A device to remove volatile matter evolved as synthetic fibers are spun and the fibers are cooled by a flow of air. A source of air under pressure introduces air to flow generally horizontally into a cooling shaft for the fibers, and a vapor collecting means is positioned at the top of the shaft opposite the source of air. The collecting means including a suction connection and a water connection, and having at least one elongated slot-shaped opening extending parallel to the movement of the fiber as it is formed.

3,444,588
APPARATUS FOR MANUFACTURING PLASTIC NETS
Keith F. Martin, Darwen, and Frank Brian Mercer, Blackburn, England, assignors to Plastic Textile Accessories Limited, Blackburn, England, a British company
Filed Jan. 22, 1964, Ser. No. 339,476
Claims priority, application Great Britain, Jan. 25, 1963, 3,296/63
Int. Cl. B29d *23/04*
U.S. Cl. 18—12 4 Claims



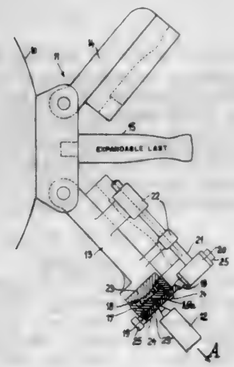
1. Apparatus for producing an extruded tubular product in the form of netting composed of plastic material, which comprises, in combination a circular series of die orifice means for continuously extruding a tubular component in the form of spaced parallel strands disposed in a nominal tubular surface, an annular mould groove offset with respect to the series of die orifices and in co-axial juxtaposition to and in communication with said circular series of die orifice means for moulding closed ring strands integrally with the tubular component, means for cyclically displacing the mould groove axially of said circular series of die orifice means to a position whereat each moulded closed ring strand may be stripped from the mould groove as an integral part of the product by the continued axial movement of the product, and means including a plastic supply chamber for feeding plastic under pressure to said series of die orifice means and said mould groove.

3,444,589
APPARATUS FOR FORMING SHEET MATERIAL TO PROVIDE THREE-DIMENSIONAL SHAPES
Richard E. Bowin, 6933 N. Kedzie Ave., Chicago, Ill. 60645
Filed Nov. 29, 1965, Ser. No. 522,003
Int. Cl. B29c *1/00*; A41c *3/00*
U.S. Cl. 18—19 11 Claims



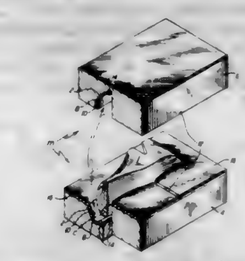
An apparatus for providing an embossment or preform in a flat sheet, which embossment or preform is subsequently re-formed to form a three-dimensional shape having a configuration different from but as a result of the embossment. The apparatus comprises a pair of die members, with each having a plurality of spaced ribs providing spaced grooves between the spaced ribs and the ribs having surfaces to permit sliding or shifting of the sheet thereon, with the ribs of each die member interfitting and entering the grooves of the other die member. The flat sheet is adapted to be positioned between the two die members. The grooves have a width greater than the width of the cooperating rib and the portion of the sheet entering the groove so as not to impede stretching of the sheet, so that when the die members are forced together under pressure the ribs of each die member will enter the grooves of the other, with the portions of the sheet engaging the surfaces of the ribs shifting or sliding over the surfaces of the ribs to stretch that portion over the surfaces of the ribs, as well as the portions within the grooves, to form respective segments between cooperating grooves and ribs, with uniform stresses within the segments to form a plurality of radially tangent stretched segments, the stretched segments becoming the segments of the reformed three-dimensional shape.

3,444,590
APPARATUS FOR THE MANUFACTURE OF SHOES
Herbert P. Ludwig, Desmastr. 112, Usen, near Bremen, Germany
Filed Nov. 4, 1966, Ser. No. 592,218
Claims priority, application Germany, Apr. 9, 1966, D 49,835
Int. Cl. B29f *1/00*
U.S. Cl. 18—30 4 Claims

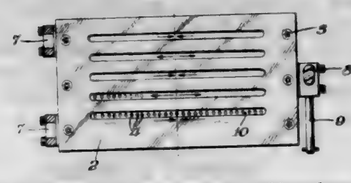


An injection molding apparatus having a last supported within a mold that includes a pair of movable side mold parts so as to form a cavity about the last, an auxiliary bottom-forming member which is secured to one of the side mold parts, and a cover member mounted on the same side mold part for linear and lateral movement relative thereto and being provided with a further cavity having an injection opening. The cover member has two operative positions, one being adjacent the auxiliary bottom-forming member when the side mold parts are open and a second position when it is adjacent the bottom of the last when the side mold parts are closed about the last.

3,444,591
APPARATUS FOR CASTING AN ARTICLE ONTO A WORKPIECE
Michael M. Becka, Cambridge, and Gordon S. Anderson, Framingham, Mass., assignors to Jacob S. Kamborian, Boston, Mass.
Filed Oct. 8, 1965, Ser. No. 494,133
Int. Cl. B29c *1/00*
U.S. Cl. 18—42 6 Claims
An apparatus for casting an article onto a workpiece that comprises a mold having a cavity that supports the workpiece. The workpiece does not occupy the entire cavity and fluent molding material may be caused to fill that portion of the cavity unoccupied by the workpiece.

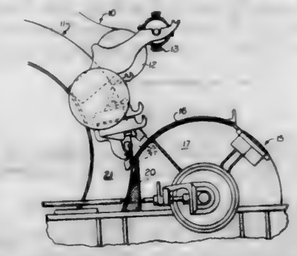


3,444,592
APPARATUS FOR WIDENING AND LOOSENING CONTINUOUS ARTIFICIAL FIBER
Hans Weigand, Freiburg, Breisgau, Germany, assignor to Deutsche Rhodiaceta AG., Freiburg, Germany, a corporation of Germany
Filed Mar. 1, 1967, Ser. No. 619,774
Claims priority, application Germany, Mar. 2, 1966, D 49,482
Int. Cl. D01b *3/10*
U.S. Cl. 19—66 2 Claims

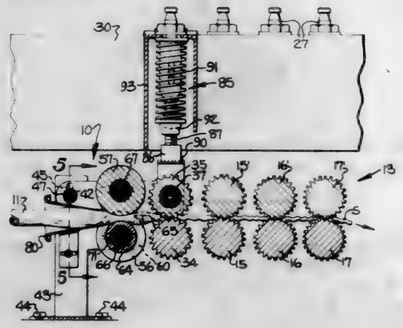


Continuous artificial fiber strands are widened and loosened by means of a single or multiple passes through an apparatus having a plurality of rows of nozzles. Gas is blown through one row of nozzles away from the center, and is blown through the adjacent row of nozzles toward the center of the apparatus.

3,444,593
CHOKE ELIMINATION IN TEXTILE CARDS
Otis L. Landers, Charlotte, N.C., assignor to Pneumafil Corporation, Charlotte, N.C., a corporation of Delaware
Filed Aug. 17, 1966, Ser. No. 573,045
Int. Cl. D01g *15/80*
U.S. Cl. 19—107 2 Claims
A method and arrangement for preventing fiber accumulations on the front of the main cylinder screen of a textile card in the area of transfer of fibers from the main cylinder of the card to the doffer of the card. This is accomplished by cutting the shroud to form an opening between the main cylinder and the doffer, and establishing an air stream in the vicinity of the cut shroud in which expelled fibers are entrained, and accumulation on the screen prevented.

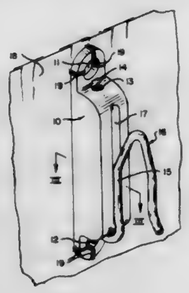


3,444,594
FEEDING APPARATUS FOR PLIABLE MATERIALS
Joe R. Whitehurst, Kings Mountain, N.C., assignor, by mesne assignments, to The Warner & Swasey Company, Cleveland, Ohio, a corporation of Ohio
Filed Apr. 3, 1967, Ser. No. 627,874
Int. Cl. D01h 5/32, 5/22
U.S. Cl. 19—239 13 Claims



An apparatus for feeding textile slivers or other pliable material to a drafting unit or other processing apparatus, in which the depth of intermeshing relationship of fluted feed rolls, and thus the rate of feed of the material by the fluted feed rolls, is controlled by a detecting device which detects variations in weight or thickness of the material in its course from a supply source to the feed rolls.

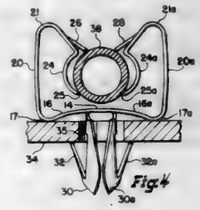
3,444,595
DRAPERY HANGERS
Andre Y. Wachenheimer, 62 Greenbrier Drive, Pittsburgh, Pa. 15220
Filed Apr. 5, 1967, Ser. No. 628,657
Int. Cl. A44b 21/00; A47h 13/16
U.S. Cl. 24—73 4 Claims



A drapery hanger is provided with a socket portion of plastic such as nylon having an elongated aperture to receive one end of a hook member in frictional engagement.

3,444,596
PIPE CLIP
Edmund John Soltysik, Chicago, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Jan. 31, 1968, Ser. No. 702,091
Int. Cl. F16b 2/24; F16l 3/12
U.S. Cl. 24—73 6 Claims

A resilient sheet material clip for mounting elongate workpieces, such as rods, tubes, cables and the like to an apertured work support and including a stud portion extending through the work support aperture and a head portion having opposed gripping formations to gripping-



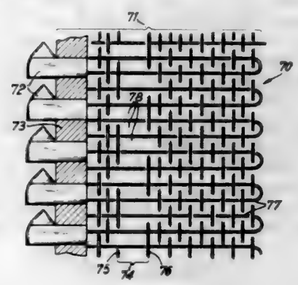
ly accommodate workpieces of varying cross-sectional dimensions within predetermined size ranges.

3,444,597
FILAMENT TYPE ATTACHMENT DEVICE AND MANUFACTURE OF SAME
Arnold R. Bone, Needham, Mass., assignor to Dennison Manufacturing Company, Framingham, Mass., a corporation of Nevada
Filed Dec 12, 1966, Ser. No. 601,002
Int. Cl. A44b 9/00; G09f 3/08
U.S. Cl. 24—150 8 Claims



An attachment device for securing tags and buttons to cloth comprising a unitary piece of thermoplastic material including a filament of tapering thickness, a head on one end of the filament and an enlargement on the other end, the filament being stretched to reduce its cross-sectional dimension and facilitate its passage through fabric and increase its strength by rearranging the molecules of the thermoplastic material.

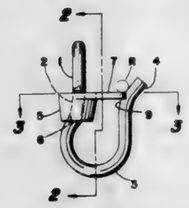
3,444,598
SLIDING CLASP FASTENERS
Friedrich Glindmeyer, Stolberg, Rhineland, and Fritz Darandik, Hamburg, Germany, assignors to William Prym-Werke K.G., Stolberg, Rhineland, Germany
Filed Apr. 11, 1966, Ser. No. 541,598
Claims priority, application Germany, Apr. 13, 1965, P 25128; Dec. 7, 1965, P 38,288
Int. Cl. A44b 19/04; A41h 37/06
U.S. Cl. 24—205.16 7 Claims



1. A slide fastener comprising, in combination, a pair of stringers each adapted to be connected by a thread to the loops at the edge portion of a knitted fabric and each including a woven tape and a row of locking elements fastened to one edge portion of the tape, said woven tape being provided with a plurality of apertures adjacent said locking elements and arranged spaced in longitudinal direction of said stringer at distances from each other ac-

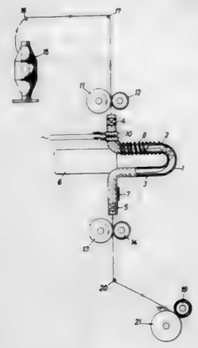
cording to the stitch spacing and yarn thickness of the knitted fabric to be connected thereto, said apertures being formed by a weave that is looser in the area of the apertures than in the remaining portion of said tape.

3,444,599
SNAP HOOK
Maurice E. Amon, 45 Hume Hill Drive, Amherst, Ohio 44001
Filed Feb. 21, 1968, Ser. No. 707,044
Int. Cl. A44b 13/00
U.S. Cl. 24—236 4 Claims



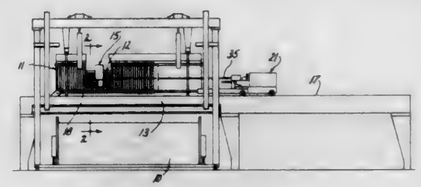
The invention is concerned with snap hooks for detachably supporting the ring of a saxophone or like instrument, and which hooks are characterized by the provision thereon of a flexible plastic arm on the hooks which is adapted to be flexed in one direction to permit the ring to be snappingly received in the bight of the hook, and to be flexed in the opposite direction to permit the ring to be removed from the hook.

3,444,600
APPARATUS FOR PROCESSING SYNTHETIC PLASTIC FILAMENTS
Frederick Scragg, Mobberley, and Alexander Albert Chubb, Macclesfield, England, assignors to Ernest Scragg & Sons (Holdings) Limited
Original application Oct. 7, 1963, Ser. No. 314,351. Divided and this application Nov. 15, 1967, Ser. No. 683,296
Claims priority, application Great Britain, Oct. 15, 1962, 37,710/62
Int. Cl. D02g 3/00, 1/00; D04h 17/00
U.S. Cl. 28—1 10 Claims



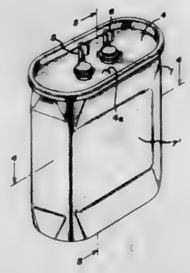
A tube having two mutually inclined branches is rotated about the axis perpendicular to one of these branches. A synthetic plastic filament is advanced first through the aforementiond one branch and thereupon through the other branch which is inclined with reference thereto. Heating means heats and thereby softens the filament. Rotation of the tube subjects the filament portions in the other of the branches to centrifugal force whereby the filament tends to move through the other branch and outwardly thereof. An abutment surface is provided against which the softened filament abuts whereby it is crimped.

3,444,601
MECHANISM AND METHOD FOR POSITIONING REEDS
Frederick L. Wieneke, Rockford, Ill., assignor to Barber-Colman Company, Rockford, Ill., a corporation of Illinois
Filed Sept. 19, 1967, Ser. No. 668,872
Int. Cl. D03j 1/14
U.S. Cl. 28—45 9 Claims



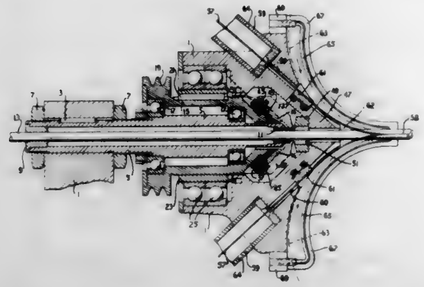
A conventional warp drawing-in machine having a carriage movable along a bed longitudinally of heddle frames and a double-dent reed supported on the bed above a warp beam, and having a needle adapted to be passed back and forth through successive passages in the reed to pull the warp threads through the reed during the return strokes of the needle. The reed is positioned relative to the needle by two rotary positioners on the carriage disposed on opposite sides of the reed and having spiral blades with holding portions disposed in a common plane for joint engagement with the two offset dents defining each reed passage. The positioners are rotated alternately to pass each blade around successive dents in the adjacent row, cooperating with a conventional reed-actuated switch mechanism to shift the carriage longitudinally of the reed.

3,444,602
ELECTRICAL CAPACITOR AND METHOD OF MAKING THE SAME
Glenn D. Rayno and Frederick W. Grahame, Glens Falls, N.Y., and Carl E. Paul, deceased, late of Glens Falls, N.Y., by Anne F. Paul, executrix, Glens Falls, N.Y., assignors to General Electric Company, a corporation of New York
Original application Apr. 29, 1964, Ser. No. 363,427, now Patent No. 3,299,333, dated Jan. 24, 1967. Divided and this application Nov. 7, 1966, Ser. No. 592,573
Int. Cl. H01g 13/00
U.S. Cl. 29—25.42 7 Claims



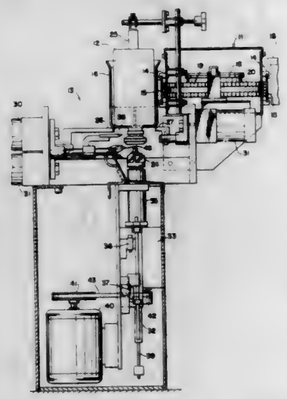
A capacitor casing of a predetermined size has a smaller capacitor section therein, and planar sectional parts of opposite side walls of the casing are suitably indented to engage and position the capacitor section in the casing.

3,444,603
MANUFACTURE OF CLAD WIRE AND THE LIKE
Paul A. Dion, North Attleboro, Mass., and Arthur James Thomson, Cranston, R.I., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Jan. 4, 1967, Ser. No. 607,254
Int. Cl. B21f 19/00; B23p 25/00
U.S. Cl. 29—33 10 Claims



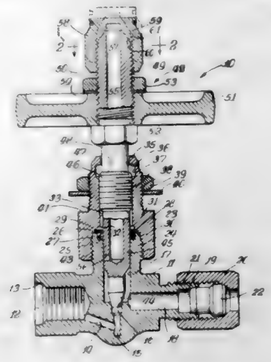
A wire is pulled by squeeze rolls through a drawing die, a guide bushing, a circumferential milling device, and an axially operative shaving die. The shaving die forms a virgin surface on the wire. The milling device is operative closely adjacent to the inlet of the shaving die so as to cut away its chips and prevent jamming thereby and wire breakage. Between the shaving die and the draw rolls clean cladding strips are brought into engagement with the virgin surface of the wire to effect solid-phase bonding thereto under roll squeezing action. They converge in a compartment leading to the rolls and containing a protective or reducing atmosphere. The cutting edge of the shaving die also forms a gas seal around the wire inlet to this compartment.

3,444,604
APPARATUS FOR TRIMMING AND REMOVING NECK FLASH FROM BLOWN ARTICLES
Charles J. Waechter, Piscataway, and Lloyd Kovacs, Somerset, N.J., assignors to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Feb. 1, 1967, Ser. No. 613,237
Int. Cl. B23p 25/00
U.S. Cl. 29—33 4 Claims



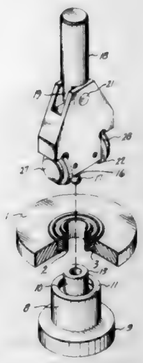
A plurality of bottles needing their necks trimmed are generally continuously fed into a circulating carrier, having buckets conforming in shape, over a neck trimming station then to a forwarding station for removal to either storage or for immediate filling.

3,444,605
METHOD OF RETAINING A VALVE STEM IN A VALVE BODY
Carl Bolling, Chicago, Ill., assignor to Imperial-Eastman Corporation, a corporation of Illinois
Original application Jan. 24, 1964, Ser. No. 339,956, now Patent No. 3,272,232, dated Sept. 13, 1966. Divided and this application July 5, 1966, Ser. No. 562,776
Int. Cl. F16k 15/00
U.S. Cl. 29—157.1 1 Claim



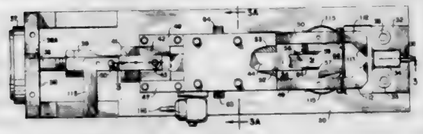
A gage valve having a body provided with an extension having an inturned annular stop at the distal end for effectively positively precluding removal of the valve stem upon assembly of the valve. The stop has a substantial axial extent for effectively precluding outward rolling thereof as by a forceful axial outward urging of the valve stem. The valve stop may be formed by crimping after the stem is mounted therein.

3,444,606
SELF-ALIGNING BEARING-STAKING TOOL
Cecil B. Jones, Kent, Wash.
(515 Lake St., Kirkland, Wash. 98033)
Filed Jan. 23, 1967, Ser. No. 610,933
Int. Cl. B23p 19/00; B21d 53/10, 3/06
U.S. Cl. 29—200 6 Claims



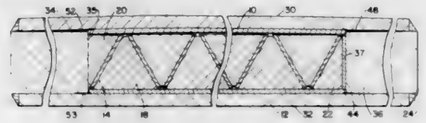
1. A self-aligning bearing-staking tool comprising a body, an elongated shank extending upward from said body for reception in a drill press chuck, means connecting said shank and said body for relative tilting about an axis extending transversely of the length of said shank, and a pair of bevel crimping rollers carried by the lower portion of said body for rotation about a common axis extending transversely of the length of said shank.

3,444,607
APPARATUS FOR ASSEMBLING ELECTRICAL CONNECTORS
John W. Peterson, Douglaston, and Henry Schick, Commack, N.Y., assignors to Gilbert Manufacturing Co., Inc.
Filed Nov. 15, 1966, Ser. No. 594,423
Int. Cl. H01r 43/00
U.S. Cl. 29—203 5 Claims



Apparatus for assembling electrical connectors wherein the apparatus includes a pair of channels for orienting the contacts relative to the body of a connector which contains a pair of electrically conductive wires, a pair of arms for separating and locating the electrically conductive wires and a pair of sharp edges which partially sever the insulation of the electrical wires prior to assembly.

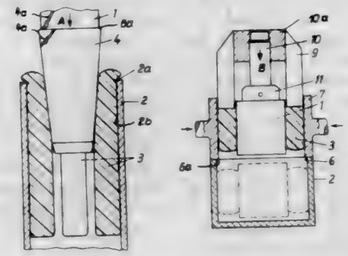
3,444,608
ROLL DIFFUSION BONDING METHOD
Charles E. Conn, Jr., Manhattan Beach, and Robert P. Neumann, Torrance, Calif., assignors to North American Rockwell Corporation
Filed Dec. 28, 1966, Ser. No. 605,419
Int. Cl. B23p 17/00; B23k 1/20, 31/02
U.S. Cl. 29—423 8 Claims



1. A method of forming a roll diffusion bonded article from a plurality of individual workpiece components and filler elements arranged within an envelope, comprising the steps of:
- placing said workpiece components and filler elements in a rigid metallic yoke having a cavity formed therein adapted to be substantially filled by said components and elements,
- determining the actual density of said components and filler elements within said cavity,
- determining the theoretical ideal density of said components and filler elements required to fill said cavity completely,
- placing at least one additional filler element in said cavity to increase said actual density by an amount sufficient to increase the ratio of said actual density to said ideal density to at least 99.5% before roll diffusion bonding said article, and
- closing said envelope with the contents of said yoke cavity completely isolated from surrounding atmosphere and subjecting said envelope and contents to heat and roller pressure to cause diffusion bonding of said workpiece components together.

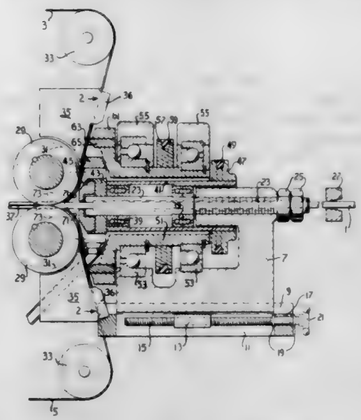
3,444,609
METHOD FOR THE ASSEMBLY OF TORSIONALLY ELASTIC CONNECTION ELEMENTS
Hermann J. Neidhart and Rico Neidhart, both of Rte. de Chancy, Genf-Bernex, Switzerland
Filed June 8, 1964, Ser. No. 373,341
Int. Cl. B23p 11/02; B23k 19/04
U.S. Cl. 29—451 3 Claims

A novel method for the assembly of torsionally elastic connection elements is disclosed in which, between a rigid inner component of polygonal cross-section and a rigid outer component of polygonal cross-section and enclosing said inner component, there are disposed a number of pre-stressed elastomer bodies at the same height and at a mutual spacing from one another, each elastomer body bearing at least at two inner surfaces of the polygonal outer component, said at least two inner surfaces abutting one another at an angle. The novel method comprises the steps of providing a rigid inner component of polygonal cross-section, a rigid outer component of



polygonal cross-section, and a plurality of elastomer bodies. The elastomer bodies are then applied, without precompression to one of the rigid components. The elastomer bodies are simultaneously radially compressed against said one of the rigid components in a manner so as to produce a rotational stress and deformation along a direction defined by a peripheral surface of said one of the rigid components. The other rigid component is telescopically applied into a position contacting the elastomer bodies while maintaining the radial compression against said one of the rigid components.

3,444,610
MANUFACTURE OF CLAD WIRE AND THE LIKE
Arthur J. Thomson, Cumberland, R.I., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Nov. 3, 1966, Ser. No. 591,752
Int. Cl. B23k 21/00, 31/00, 35/38
U.S. Cl. 29—470.1 9 Claims



1. Wire-cladding apparatus comprising squeeze rolls, core guide means and cladding guide means for drawing core material between the rolls in one direction while simultaneously drawing in cladding strip material substantially transversely to said direction to squeeze said materials together in the nip space between the rolls with a reduction in the sum of the cross sections of the core and strip materials for solid-phase bonding thereof, a hollow mill head located between the core guide means

and the space between rolls, first means for rotating said hollow mill head circularly to cut materials from the core material to produce a clean surface thereon in approach to said rolls, a face mill and second means for rotating said face mill to cut the cladding strip material across its direction of movement to clean it in its approach to said rolls.

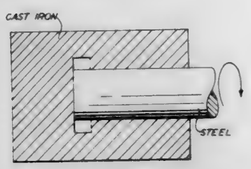
9. The method of manufacturing clad wire and the like comprising drawing wire core material along an axis into the nip space between squeeze rolls along with strips of cladding material which move transversely with respect to said axis and into said nip space around said core material, rotating milling head cutters around said core material, said cutters being closely adjacent the nip space between the rolls circularly to remove surface material from the core wire to present a clean surface thereon as the material moves into the nip space, and transversely rotatably milling the surfaces of said cladding strips adjacent to said rolls by means of face mill cutters to remove surface material therefrom and present clean surfaces to the clean surface of the core material upon entry of the core material and cladding strips into the nip space between the rolls.

3,444,611

FRICTION WELDING METHOD

Harold N. Bogart, Detroit, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Feb. 25, 1966, Ser. No. 530,125
Int. Cl. B23k 27/00
U.S. Cl. 29—470.3 1 Claim



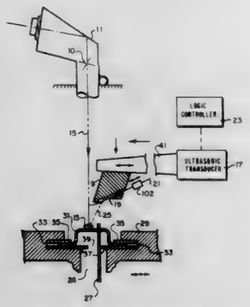
This disclosure relates to a process for securing a mild steel member to a cast iron member by friction welding and involves the flow of the steel member into an undercut in the cast iron member.

3,444,612

WIRE BONDING METHOD

Matheus D. Pennings, Palo Alto, Calif., assignor to Engineered Machine Builders Co., Inc., a corporation of California

Filed Apr. 10, 1967, Ser. No. 629,504
Int. Cl. B23k 31/02, 1/06
U.S. Cl. 29—471.1 2 Claims



Welding apparatus includes optical means for locating a weld target on a workpiece and includes a welder tip which is mounted to extend automatically into alignment over the weld target and then descend any random distance to contact the workpiece at the weld target.

3,444,613

METHOD OF JOINING CARBIDE TO STEEL

Charles V. Foerster, Little Ferry, N.J., assignor to Coast Metals, Inc., Little Ferry, N.J., a corporation of Delaware

No Drawing. Filed Nov. 24, 1965, Ser. No. 509,599
Int. Cl. B23k 31/02; B22f 7/00
U.S. Cl. 29—473.1 6 Claims

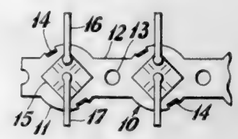
A method is provided for bonding a carbide element to a support member, in which a preformed compact consisting of a mixture of nickel powder and an alloy powder of the group consisting of copper-manganese and copper-manganese-nickel alloys is interposed between the element and the support member, and the assembly heated to a temperature below the melting point of the nickel powder to cause the compact to bond the element to the support member. A preformed and sintered compact consisting of such powders is also provided.

3,444,614

METHOD OF MANUFACTURING SEMICONDUCTOR DEVICES

Henry G. Scholer, Carteret, N.J., assignor to The Bendix Corporation, Eatontown, N.J., a corporation of Delaware

Filed Jan. 12, 1966, Ser. No. 520,251
Int. Cl. B01j 17/00; H01l 1/10
U.S. Cl. 29—588 5 Claims



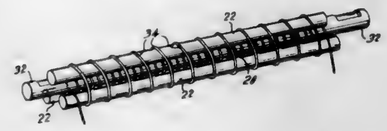
Means for mass production of semiconductors utilizing mounting the semiconductor wafers on a strip which serves as one of the contacts and also as a heat sink.

3,444,615

PROCESS OF MAKING A HELIX SUPPORT

Charles E. Anderson, San Carlos, and James Dudfield, East Palo Alto, Calif., assignors to Litton Precision Products Inc., San Carlos, Calif., a corporation of Delaware

Original application June 19, 1961, Ser. No. 118,143, now Patent No. 3,242,375. Divided and this application Dec. 28, 1965, Ser. No. 517,047
Int. Cl. H01p 11/00; H01q 13/00
U.S. Cl. 29—600 9 Claims



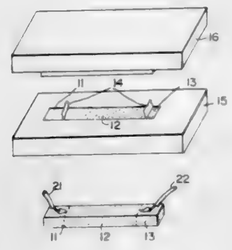
The process for making the helix and associated support structure which forms the slow wave structure within a traveling wave tube includes the steps of winding a wire on a mandrel to form a long slender helix coil. A plurality of rod like insulating supports is then placed about the circumference of the helix and mandrel and secured in such position. Subsequentially, the mandrel is dissolved in a hot caustic solution leaving the support rods secured to the helix. A temperature elevating electric current is passed through the helix wire to metallically bond the support rods to the helix in the points of contact therebetween. In one embodiment, the helix coil initially is an electroplated nickel layer on a titanium wire, which during heating results in an alloying between the nickel and titanium which wets any contacting portion of the support rods and forms a bond therewith.

3,444,616

ELECTRIC HEATING ELEMENT AND ITS FABRICATION

August Ferretti, Cambridge, and Richard W. Germann, Boston, Mass., assignors to Massachusetts Institute of Technology, Cambridge, Mass., a corporation of Massachusetts

Original application Jan. 2, 1964, Ser. No. 344,999, now Patent No. 3,309,643, dated Mar. 14, 1967. Divided and this application Apr. 22, 1966, Ser. No. 559,024
Int. Cl. H01c 1/14, 17/00
U.S. Cl. 29—621 4 Claims



The method of producing direct electrical resistance heating elements of any prearranged shape for use at high temperatures consisting of metal dispersed through refractory material.

3,444,617

SELF-POSITIONING AND COLLAPSING STAND-OFF FOR A PRINTED CIRCUIT CONNECTION AND METHOD OF ACHIEVING THE SAME

Alfred A. Stricker and William J. Walker, Wappingers Falls, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Nov. 5, 1965, Ser. No. 506,482
Int. Cl. H05k 3/30
U.S. Cl. 29—626 3 Claims



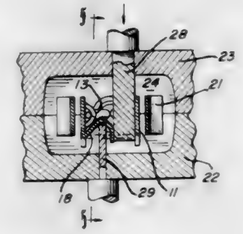
A standoff terminal connection process for a printed circuit board involving a portion of each terminal swaged into deformable sinusoidal cross-sectional configuration with the swaged portion being resiliently and frictionally received by the printed circuit through hole.

3,444,618

METHOD OF FORMING ELECTRICAL ELEMENTS

Norman L. Sorlie, Minneapolis, Minn., assignor to Whirlpool Corporation, a corporation of Delaware

Filed Sept. 23, 1965, Ser. No. 489,601
Int. Cl. H02g 15/00; H01r 3/00, 9/00
U.S. Cl. 29—629 10 Claims



A method of forming an electrical male plug whereby the terminals are spaced apart by an integral strip both before and after the terminals are placed in a mold and which is removed during the plug-molding process.

3,444,619

METHOD OF ASSEMBLING LEADS IN AN APERTURED SUPPORT

Robert B. Lomerson, 108 S. Saginaw Blvd., Saginaw, Tex. 76079

Filed May 16, 1966, Ser. No. 558,172
Int. Cl. H01r 9/04, 9/16
U.S. Cl. 29—630 6 Claims



A method of assembling multiple base elements having projecting electric leads wherein the base elements are initially supported in a flat matrix; glass or other meltable insulating material is received in holes in the bases, and wherein the leads are supported on a strip or strips and pressed through the glass while the latter is in a plastic stage. Subsequently the strip or strips are removed from the leads and the base elements from the matrix.

3,444,620

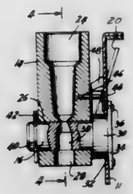
SHEARING DEVICE

Lincoln Lloyd Ciampa, Rutherford, N.J., assignor to Becton, Dickinson and Company, East Rutherford, N.J., a corporation of New Jersey

Filed May 23, 1967, Ser. No. 640,683
Int. Cl. B26b 13/00; B25f 3/00
U.S. Cl. 30—231 6 Claims

A stationary shear element and a movable shear element pivotally mounted on the former for relative angular displacement away from and back to a rest position. A bore in each element which, in the rest position of the movable shear, longitudinally communicate at a shearing plane defined by interacting shearing surfaces formed on

the elements within the bores. A hypodermic syringe is received within the longitudinal bore in a manner such that the hub portion is disposed above the shearing plane in the movable element and a substantial portion of the

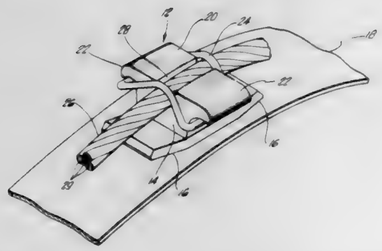


cannula projects below the shearing plane in the stationary element whereby relative angular displacement of the elements from the rest position causes the cannula to be sheared from the hub.

3,444,621
ORTHODONTIC APPLIANCE

Erwin C. Pletcher, La Jolla, Calif., assignor to Unitek Corporation, Monrovia, Calif., a corporation of California

Continuation-in-part of application Ser. No. 405,065, Oct. 20, 1964. This application May 19, 1967, Ser. No. 649,771
Int. Cl. A61c *7/00*
U.S. Cl. 32—14 **2 Claims**



An orthodontic arch wire composed of three strands of wire twisted together only sufficiently to form the strands into three interlocking helices which stay interlocked when the twisting moment is relaxed, the strands having diameters in the range of from about 0.007 inch to about 0.010 inch to form a cable-like arch wire having a diameter in the range of about 0.015 inch to about 0.022 inch which substantially fills the slot of an orthodontic tooth bracket.

3,444,622
AIR OPERATED VIBRATOR FOR DENTISTRY

Tonk Mills, Brown Bldg., Wichita, Kans. 67202, and William J. Lynn, Prairie Village, Kans.; said Tonk Mills assignor to Tonk Mills, as trustee

Filed June 7, 1965, Ser. No. 461,747
Int. Cl. A61c *3/08*
U.S. Cl. 32—56 **6 Claims**

An improved air operated vibrator for dentistry having a housing, a chuck for mounting a condensing tool on the housing and a motor with a relatively small race and a relatively large and heavy ball mounted in the race. Conduit communicates between the inlet of a valve, mounted in operative relation to a handle on the housing, and the motor delivering operating air under pressure to the motor. Another conduit exhausts the air through the

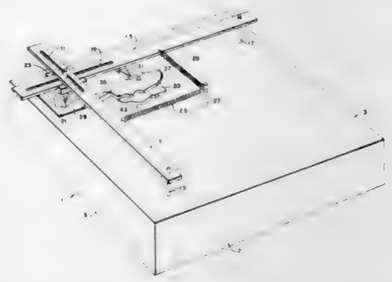


motor race between the housing and handle, through the handle to the atmosphere whereupon the ball is rotated around the race creating high frequency vibrations.

3,444,623
DRAWING TOY

Tobin Wolf, 447 Essex Ave., Bloomfield, N.J. 07003

Filed Dec. 7, 1967, Ser. No. 688,783
Int. Cl. B43l *13/10*
U.S. Cl. 33—27 **2 Claims**

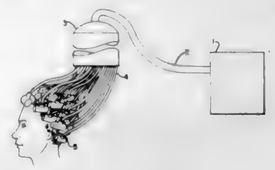


The disclosure relates to a drawing toy in the form of a pantograph-like device wherein a pair of cams of predetermined contour is provided and rotated by means of a motor or the like. Each of the *x* and *y* arms is associated with one of the cams and follows the contour thereof, the pantograph arms controlling a scribe in accordance with the vector sum of the arm movements.

3,444,624
PROCESS AND APPARATUS FOR DRYING HAIR

Wilfred E. Greenlee, 1304 Eastern Parkway, Louisville, Ky. 40204

Filed May 29, 1967, Ser. No. 641,906
Int. Cl. A45d *2/36, 20/00*
U.S. Cl. 34—3 **13 Claims**

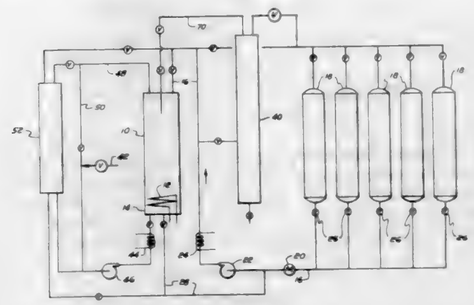


Disclose a method and apparatus for drying hair whereby a vacuum pump is used to draw ambient air through segments of wet hair in the form of rolls or pin curls. Discloses additionally, a specially designed roller, cover and a clip as well as a connecting mechanism for connection to low pressure tubular members and a housing whereby the tubular members are slidably adjustable.

3,444,625
LEATHER DEHYDRATION IN A FALLING FILM DEHYDRATOR

Mario Giella, Boston, Mass., and Raymond Rosario Petralia, Camillus, N.Y., assignors to Swift & Company, Chicago, Ill., a corporation of Illinois

Filed Feb. 2, 1966, Ser. No. 524,639
Int. Cl. F26b *3/00;* **C14c** *5/00, 11/00*
U.S. Cl. 34—9 **15 Claims**

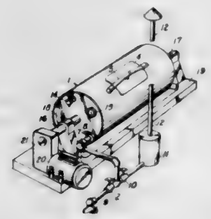


Sheet material is treated while suspended in a chamber containing a non-liquid environment by applying a liquid treating agent to descent along the surfaces of the material by gravity as a thin film. Treatment with solvent compositions may be utilized to extract water from the material and to apply conditioning material and the like. For instance leather may be dehydrated and also tanned.

3,444,626
SOIL CONDITIONING METHOD AND APPARATUS

Robert F. Burton, 3141 Wynn Drive, Avondale Estates, Ga. 30002

Filed Sept. 7, 1967, Ser. No. 666,077
Int. Cl. F26b *5/04, 11/12, 13/30*
U.S. Cl. 34—15 **10 Claims**



What is disclosed herein is a soil conditioning method and a soil conditioning apparatus which embody an invention that provides conditioned soil for golf course and other special agricultural uses which is substantially free of fungi, plant seeds, insects, and other undesirable living matter. The soil conditioning method disclosed includes the steps of cascading soil from which substantially all air has been removed through a concentrated insecticide, herbicide, fungicide or similar soil conditioning chemical having the property of killing living matter in the soil or of otherwise conditioning the soil, removing substantially all of the soil conditioning chemical from the soil by applying a vacuum to the soil, and rinsing the residual soil conditioning chemical from the soil by cascading the soil through air. The apparatus disclosed includes a cascading means for cascading soil, an environment means for providing an environment of air or soil conditioning chemical to cascading soil, and vacuum means for applying a vacuum to soil. The cascading means disclosed is a sealable and rotatable drum having deflecting plates within and rotatable with the drum. The deflecting plates are shaped and positioned to cause cascading of soil dropping downwardly after being carried upwardly by rotation of the drum and to provide a blending device well suited to the invention and other uses.

3,444,627
METHOD AND APPARATUS FOR DRYING GOODS IN LAYERS

Olli Heikinheimo, Helsinki, Finland, assignor to Plan-Sell Oy., Helsinki, Finland, a corporation of Finland

Filed Oct. 24, 1967, Ser. No. 677,577
Claims priority, application Finland, Oct. 24, 1966, 2,805/66
Int. Cl. F26b *3/06*
U.S. Cl. 34—23 **16 Claims**



The method according to the invention is principally characterized by the steps comprising feeding piece goods or weblike goods and a first elongated carrier into the entrance end of a drying chamber to form a goods layer supported on said carrier, at the terminal longitudinal position of the carrier and layer transferring them a distance at least equal to the thickness of the layer in a direction normal to the broad extent of the first carrier, forming another layer of goods on a second, similar carrier and feeding them in a corresponding manner into said terminal position in the drying chamber and transferring it a direction normal thereto to bring it into stacked relationship with the first carrier and layer while transferring said first carrier and layer correspondingly in the said normal direction, repeating the said operations to form a pile of layers of goods and carriers therefor in the chamber comprising the desired number of goods layers, circulating drying gas through the thus stacked carriers and layers of goods, and removing the first stacked carrier and layer in a dried state from said pile at the opposite, discharge end of the drying chamber. Two embodiments of apparatus for carrying out the method of the invention are disclosed and claimed herein.

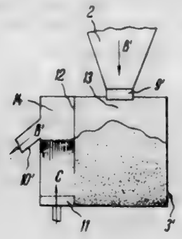
3,444,628
HEAT EXCHANGER FOR POWDERED MATERIALS SUSPENDED IN GASES

Garry Vladimirovich Telyatnikov, Gavanskaya ul. 10, kv. 3, and Evgeny Iosifovich Khodorov, Pl. Chernyshevskogo 7, kv. 5, both of Leningrad, U.S.S.R.; Anatoly Akindinovich Evtjutov, Oktyabrskaya ul. 24/1, kv. 5; Denis Denisovich Skopa, Aljuminievaya ul. 17, kv. 29; Anatoly Alexeevich Chervinsky, Kamenskaya ul. 23, kv. 35; Alexandr Vladimirovich Shilov, Aljuminievaya ul. 8, kv. 39; and Nina Mikhailovna Kazantseva, Ul. Gagarina 32, kv. 8, all of Kamensk-Uralsky, U.S.S.R.

Filed Mar. 6, 1967, Ser. No. 620,948
Int. Cl. F26b *17/10*
U.S. Cl. 34—57 **2 Claims**

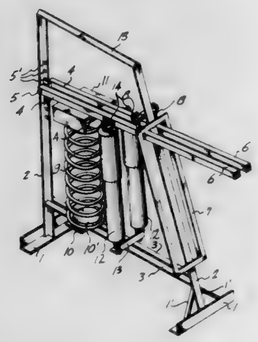
A powdered material heat exchanger having a heat exchanging column, a cyclone connected to the column in the direction of flow of the suspended powdered material, and a discharging chamber underneath the cyclone. The discharging chamber has two compartments divided by a partition which does not reach the bottom of the cham-

ber. The first compartment is connected to the cyclone and contains a dense layer of powdered material discharged from the cyclone and which powdered material forms a seal at the bottom of the cyclone. The second



compartment has means for fluidizing the powdered material introduced from the first compartment, and as the powdered material is fluidized it exits through an outlet means.

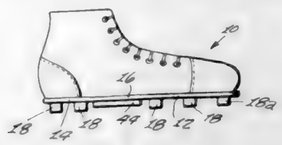
3,444,629
COMPARATIVE SHOCK-ABSORBER DEMONSTRATION STAND
John G. Ward, Portland, Oreg., assignor, by mesne assignments, to Monroe Auto Equipment Company, Monroe, Mich.
Filed Jan. 5, 1967, Ser. No. 607,514
Int. Cl. G09b *25/00;* **G01m** *17/04*
U.S. Cl. 35—50 **11 Claims**



This invention relates to a demonstration stand on which an effective automotive shock absorber and a comparatively ineffective automotive shock absorber can be mounted, preferably in side-by-side relationship, and arranged so that each shock absorber can be contracted manually at will and, when released, will be extended by spring action, the effective shock absorber being extended comparatively gradually, and the relatively ineffective shock absorber being extended comparatively abruptly.

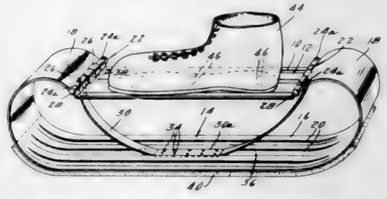
3,444,630
FOOTBALL SHOE CLEAT AND ARCH CONSTRUCTION
Dominick J. Morelli, 23 Catherwood Crescent, Melville, N.Y. 11746
Filed Oct. 13, 1967, Ser. No. 675,094
Int. Cl. A43c *13/04, 15/00, 15/16*
U.S. Cl. 36—2.5 **3 Claims**

A cleat construction for a football shoe embodying four cleats for the heel and five cleats for the sole in which each cleat is of cube formation presenting a flat square ground engaging surface and having a metallic threaded insert for threaded engagement with a bolt securely fixed to the shoe. A metal heel plate and a separate flexible metal sole plate is disposed between an inner sole and the shoe heel and sole, both being provided with openings through which the bolts extend, the heads of the bolts seating on each plate with each head having lugs



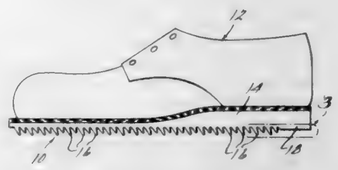
on its under face engaging slots in the associated metal plates to prevent rotation of the bolts. Nuts on the bolts serve to fixedly secure the bolts to the plates. Disposed exteriorly of the shoe at the arch portion thereof is a rubber arch support between the sole and heel cleats.

3,444,631
APPARATUS FOR RESILIENT LOCOMOTION
Norman A. MacLeod, 1330 N. Fullerton Road, La Habra, Calif. 90631
Filed Mar. 24, 1966, Ser. No. 543,481
Int. Cl. A43b *3/12, 3/10*
U.S. Cl. 36—7.8 **10 Claims**



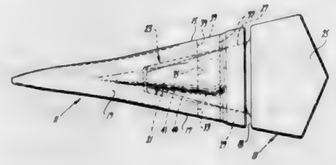
A resilient reacting exercise device for use in walking, running, jumping and the like having a pair of oppositely preloaded arranged, resilient springs operably connected together, and a resilient restraining member retaining the springs preloaded but permitting movement of the springs under a force further loading same against their resistance, the restraining member then participating in resistance to the force.

3,444,632
RESILIENT SHOE SOLE
Nathan Hack, Santa Monica, Calif., and Morton Hack, Detroit, Mich., assignors to Ripple Sole Corporation, Detroit, Mich., a corporation of Michigan
Filed Feb. 3, 1967, Ser. No. 613,893
Int. Cl. A43b *13/04, 23/28*
U.S. Cl. 36—32 **7 Claims**



A ground contacting element for shoes, boots and the like comprising a plurality of corrugated, undulating projections or ribs arranged along the lower or ground contacting side thereof, the ribs being provided to impart a cushioning and forward glide-imparting motion to the wearer's feet during normal walking or running. The ribs have a downward heelward inclination and are of alternate height in two planes.

3,444,633
TWO-PART EXCAVATING TOOTH
Ruston C. Hensley, Dallas, Tex., assignor to Hensley Equipment Company, Inc., Dallas, Tex., a corporation of Texas
Filed Sept. 6, 1966, Ser. No. 577,404
Int. Cl. E02f; E21c *13/00*
U.S. Cl. 37—142 **9 Claims**



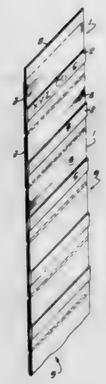
An excavating tooth including an adapter and a wear point having generally wedge shaped mating surfaces the faces of which include a cooperating depression and raised portion which decrease both in height and width from the vertex of the wedge to the rear of the adapter and point.

3,444,634
COVER FOR PRESSING PLATEN
Claude E. Terry, Senoia, Ga., assignor to Southern Mills, Inc., Atlanta, Ga., a corporation of Georgia
Filed Jan. 19, 1966, Ser. No. 535,266
Int. Cl. D06f *71/36, 83/00*
U.S. Cl. 38—66 **12 Claims**

What is disclosed herein is a cover for a pressing platen which when placed on a pressing platen defines a pressing surface portion bounded by peripheral edge portions and to which a thermoplastic resin has been selectively applied so that only one or more of the peripheral edge portions are impregnated with the thermoplastic resin. Each peripheral edge portion which is impregnated with the thermoplastic resin is a portion of a cover which is subjected to excessive wear during use of the cover on a pressing platen. However, the restricting of the thermoplastic resin to one or more peripheral edge portions of the cover provides a cover which has a substantially long useful life while at the same time providing a cover which has substantially the same flexibility and other desirable characteristics of a cover that has not been impregnated with resin.

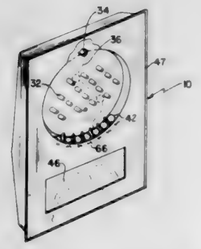
3,444,635
SELF-ADHERING INDEX TAG ASSEMBLY, MULTIPLE UNIT THEREOF, AND METHOD OF MANUFACTURE
Emil E. Setzler, 2114 E. Jackson Blvd., Medford, Oreg. 97501
Filed Oct. 24, 1965, Ser. No. 504,296
Int. Cl. G09f *3/04*
U.S. Cl. 40—2 **11 Claims**

A self-adhering index tag assembly characterized by a component member thereof having a pressure sensitive adhesive surface which serves first to afford an adhesively releasable connection with an adjacent tag in a strip of such tag assemblies and second, as at least part of the means for securing the tag assembly to an article to be



identified, as well as the strip comprising a plurality of such tags and the method of manufacture thereof.

3,444,636
ANIMATED ADVERTISING DEVICE
Paul Belokin, Jr., Berwyn, Ill., assignor to Schenley Industries, Incorporated, New York, N.Y., a corporation of Delaware
Filed Apr. 26, 1966, Ser. No. 545,392
Int. Cl. G09f *19/02, 7/00*
U.S. Cl. 40—106.25 **11 Claims**

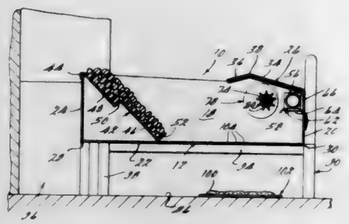


An animated advertising device having two nesting elements, one of which is rotated behind the other by means of a motor supported on a third or backing element. The rotating element is formed with pockets adapted to invisibly carry balls to an elevated position from which they fall, by gravity, through an aperture in the peripheral wall of the stationary front element through a maze of obstacles on the front of said element. The balls collect at the bottom of said stationary element, falling through an aperture in the peripheral wall thereof when one of said pockets is positioned to receive a ball.

3,444,637
ARTIFICIAL FIREPLACE
William M. Joy, 1615 N. River Road, St. Clair, Mich. 48079
Filed Oct. 15, 1965, Ser. No. 496,554
Int. Cl. G09f *13/34*
U.S. Cl. 40—106.53 **24 Claims**

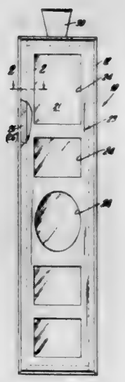
An artificial fireplace construction comprising a support structure in the form of a firebox or the like; means giving the visual appearance of fireplace fuel; a luminescent material at least partially covering the fuel appearing

means and adapted to be activated by an ultraviolet light to provide the visual sensation that fuel is combusting, an ultraviolet light directed toward the luminous mate-



rial, and means in the form of a rotatable baffle or the like for interrupting the transmission of light toward the luminous material whereby to give a flickering sensation.

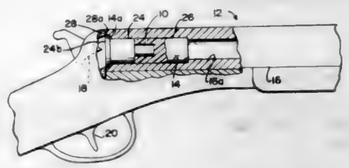
3,444,638
DISPLAY FOR PICTURES, ADVERTISING INFORMATION OR ANY PRINTED MATERIAL
Fred L. Jahn, Pittsfield, Mass., assignor, by mesne assignments, to Textron Inc., Providence, R.I., a corporation of Delaware
Filed Feb. 28, 1967, Ser. No. 619,463
Int. Cl. G09f *1/12, 7/04*
U.S. Cl. 40—158 **9 Claims**



A display comprising a framed backboard bordered by magnetic ribbons or strips with a removable transparent cover overlying the matter to be displayed, and with a mat formed with an opening through which the displayed matter may be seen, with iron or steel strips attached at its underside, in registry with the magnetic ribbons or strips so that it immediately forms contact with the magnetic ribbons or strips so that the mat may be removed if desired and display material may be removed from or inserted beneath the transparent cover.

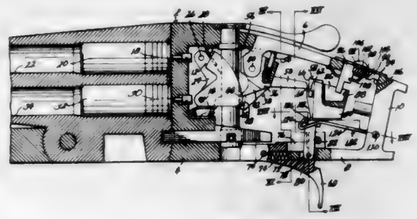
3,444,639
SAFETY PLUG FOR FIREARM CHAMBER
Clyde R. Rockwood, 4361 Woodhall Road, Columbus, Ohio 43221
Continuation of application Ser. No. 589,940, Oct. 27, 1966. This application Apr. 19, 1968, Ser. No. 722,718
Int. Cl. F41c *17/08*
U.S. Cl. 42—1 **4 Claims**

A safety plug adapted to be installed in the firing chamber of a firearm to prevent unauthorized use of the firearm. The plug has the general external configuration of a conventional shell to be used with the firearm. The plug is bipartite with a rear portion thereof being adapted to be extracted or ejected by the ejection mechanism of the



firearm when opened. The plug further defines a rear surface adapted to be struck by the firing pin of the firearm for improved safe dry firing of the firearm when desired.

3,444,640
FIRING MECHANISM FOR DOUBLE-BARRELLED SHOTGUNS
Ernest P. Simmons, 1000 Sheridan Place, Olathe, Kans. 66061
Filed July 19, 1967, Ser. No. 654,431
Int. Cl. F41c *7/00, 11/10*
U.S. Cl. 42—42 **2 Claims**

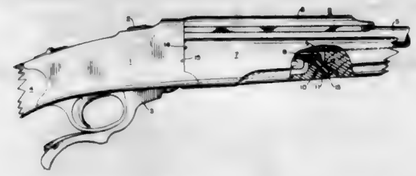


This application discloses a mechanism whereby both barrels of a double-barrelled shotgun may be fired by successive pulls of a single trigger. It includes a connector extending from the trigger selectively to either of the two sears, said connector being operable on the first pull of the trigger to release one of said sears, and upon release thereof from said first sear to automatically engage the second sear, and means for effecting release of the connector from the first sear when that sear releases the hammer associated therewith. The releasing means constitutes a member operable to apply a yieldable spring pressure biasing the connector to its disconnected position, but insufficient to effect said disconnection as long as the associated sear is engaged, and its movement resisted, by the hammer engaged thereby. However, when said hammer is released and its sear relieved of its pressure to ease the disconnecting movement of the connector, the spring pressure of the releasing means effects instantaneous disconnection.

3,444,641
GUN RECEIVER-BARREL-STOCK COMBINATION
William B. Ruger, Southport, Conn., assignor to Sturm, Ruger & Co., Inc., Southport, Conn., a corporation of Connecticut
Filed Aug. 2, 1967, Ser. No. 657,805
Int. Cl. F41c *23/00*
U.S. Cl. 42—75 **5 Claims**

This invention relates to guns including rifles and shotguns, and especially to the attachment of the stock to

the receiver and barrel. The invention is particularly concerned with sloping screw means for securing the forward



portion of the stock whether it be a Mauser-type one-piece rifle stock or the fore-end of a two-piece stock such as used on single shot rifles or shotguns.

3,444,642
HARPOON
Sal Mastropolo, 1010 NW. 108th Terrace, Miami, Fla. 33168
Filed Aug. 28, 1967, Ser. No. 663,675
Int. Cl. A01k *81/00, 81/04*
U.S. Cl. 43—6 **2 Claims**



A harpoon device consisting of a harpoon and a body member including a biasing means therein to propel the harpoon, and a trigger mechanism connected thereto for releasing the harpoon. The body member is connected to a fishing line, and the trigger mechanism is connected to a baitline having a bait-attaching device at the distal end thereof for actuating the harpoon device. The harpoon includes a guide member for guiding the harpoon along the baitline to insure that the harpoon travels toward the bait-attaching device when the harpoon is propelled from the body member.

3,444,643
CONTROLLING AND SENSING DEVICE FOR PLURAL TROLLING RODS
Ronald Merrill Dobbs, 415 E. Line St., Calhoun, Ga. 30701
Filed Sept. 20, 1967, Ser. No. 669,064
Int. Cl. A01k *97/12, 97/10*
U.S. Cl. 43—17 **4 Claims**



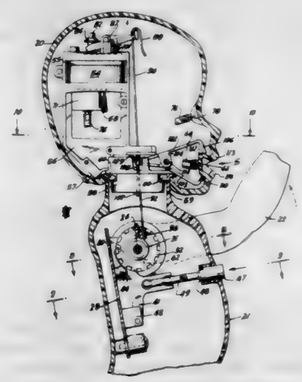
A bracket supporting a vertical post is mounted on a trolling vessel gunnel, transom, or the like. A generally horizontal arm is pivotally received on the post, cantilever fashion, so that it is free to pivot about the vertical post axis and a first indicator is adjustably mounted on the post below the arm. Two angularly adjustable sockets for receiving trolling rods are mounted along the arm and are adjusted, when in use, at approximately opposite 45 degree angles from the long axis of the vessel. Trolling rods mounted in the holders tend to rotate the arm in opposite directions with equal torque and the arm remains in a datum position transverse to the long axis of the vessel. A second indicator is mounted on the arm and when the arm is in its datum position, the first and second indicators are in vertical alignment. Uneven stress on one of the trolling lines causes rotation of the arm and misalignment of the indicators.

3,444,644
TETHERED AERIAL TOP
Lawrence Joseph Sayegh, One Sunset Ave., Cumberland, R.I. 02864
Filed July 26, 1966, Ser. No. 567,909
Int. Cl. A63h *1/30*
U.S. Cl. 46—61 **4 Claims**



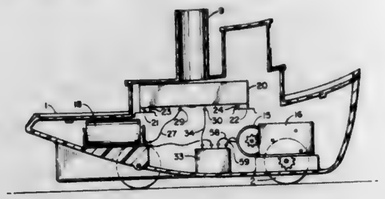
A return top construction comprising two similar disc members, each disc member having a hub with a tapered axial opening, and an axial member having oppositely located truncated cones and a central circumferential slot, whereby, said two disc members are fastened, respectively, upon said oppositely located truncated cones in spaced relation about said central circumferential slot.

3,444,645
TEARING AND POUTING DOLL
Sidney Tepper, Millburn, and Hyman P. Boydman, Springfield, N.J., assignors to De Luxe Topper Corporation, a corporation of Delaware
Filed Feb. 6, 1967, Ser. No. 614,373
Int. Cl. A63h *3/40, 3/24;* **F16k** *45/04*
U.S. Cl. 46—135 **14 Claims**



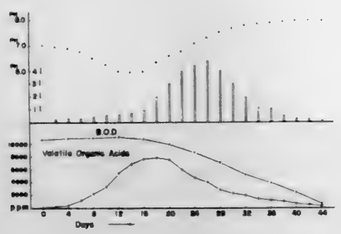
A reservoir in the doll's head communicates through a valve with openings near the doll's eyes. Relatively movable jaws are hidden within the doll's head adjacent to the mouth lips. A linkage interconnects the valve, jaws, and a movable arm or other appendage of the doll. When the arm is moved, the valve is opened allowing simulated tears to flow, and the jaws move together compressing the lips, giving the doll's face a sullen look. An air inlet hole in the reservoir is opened and closed simultaneously with opening and closing, respectively, of the valve.

3,444,646
TOYS CONTROLLED BY SOUND OF A PRE-DETERMINED FREQUENCY
Volodymyr Domashovetz, Newark, N.J., assignor to Remco Industries, Inc., Harrison, N.J., a corporation of New Jersey
Filed Sept. 8, 1966, Ser. No. 577,911
Int. Cl. A63h *33/26*; H01h *35/24*
U.S. Cl. 46—244 12 Claims



Motor-operated toys controlled by sound waves of predetermined frequency are provided. The sound waves enter an opening in a resonant box and, when of the resonant frequency, cause the air in the box to vibrate and to move an electrical contact inside the box and so actuate the toy. Positioning the contact within the box at an anti-node removed from the opening enhances the sensitivity of the unit over prior devices which had the contact across the opening.

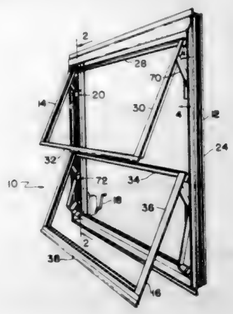
3,444,647
PROCESS OF CULTIVATING ALGAE
Masahito Takahashi, 44 Nakaocho, Fukiai-ku, Kobe-shi, Hyogo-ken, Japan
Continuation-in-part of application Ser. No. 518,615, Jan. 4, 1966, which is a continuation-in-part of application Ser. No. 312,610, July 31, 1962. This application Nov. 20, 1967, Ser. No. 689,221
Claims priority, application Japan, Aug. 8, 1961, 36/27,947
Int. Cl. A01h *13/00*; A01g *7/00*; C02c *1/02*
U.S. Cl. 47—1.4 12 Claims



Process of cultivating algae by photoassimilation under non-sterile conditions. The algae are grown in a culture medium containing lower fatty acid, preferably acetic acid, propionic acid or butyric acid, as the principal carbon source, under illumination of an intensity of at least 500 lux. The pH value of the medium should be between 5.8–9.0. The medium may be aerated, preferably with CO_2-containing air, whereby the CO_2 constitutes an auxiliary carbon source and mixotrophic photoassimilation takes place.

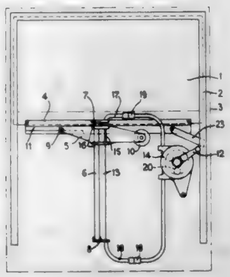
The culture medium may be obtained by anaerobically fermenting organic waste to form a ferment liquor containing lower fatty acid. The fermentation must be interrupted before methane fermentation sets in to avoid digestion.

3,444,648
BUILDING STRUCTURE
Richard N. Anderson, Rome, Ga., and Alfred C. Art, Holmes Beach, Fla., assignors to V. E. Anderson Mfg. Co., Owensboro, Ky., a corporation of Kentucky
Filed June 6, 1966, Ser. No. 555,475
Int. Cl. E05c *17/04*; E05d *15/46*
U.S. Cl. 49—248 3 Claims



Guiding and locking means for awning windows comprising an integral locking and guiding member secured to the frame of the awning window having a guiding slot therein and a camming surface thereon terminating in a locking abutment, a guiding stud secured to a vent link movable within the guiding slot and a cam follower and locking stud secured to the window vent engageable with the camming surface and the locking abutment. The combination guiding and locking member is a single piece and further includes means for pivotally mounting the vent link. The guiding slot includes an arcuate portion extending upwardly inwardly of the window structure terminating in a vertically extending portion. The camming surface extends upwardly inwardly of the window and terminates in the locking abutment extending vertically upwardly.

3,444,649
WINDOW RAISING DEVICE
Charles Rivolier, Paris, France, assignor to Societe Anonyme D.B.A.
Filed Jan. 16, 1968, Ser. No. 698,337
Claims priority, application France, Jan. 19, 1967, 91,749
Int. Cl. E05f *11/48*
U.S. Cl. 49—352 1 Claim



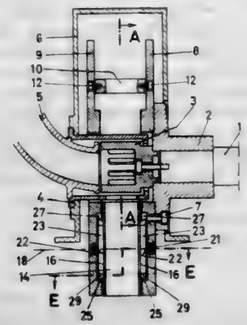
A window raising device employing a closed loop cable having at least two cable conduits connected by a device including a compression spring to maintain adequate cable tension with said window being mounted to ride upwardly and downwardly within grooves of a frame thereabout.

3,444,650
APPARATUS FOR OPERATING AN OVERHEAD VEHICLE DOOR
Henry K. Flinchbaugh, 930 Arlington Road, York, Pa. 17403
Filed May 5, 1967, Ser. No. 636,475
Int. Cl. E05f *11/00*
U.S. Cl. 49—360 1 Claim



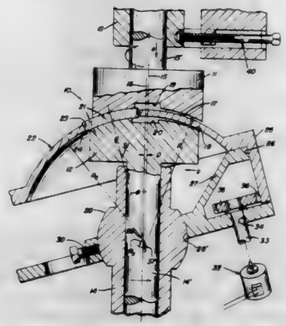
The totally enclosed body of a motor freight vehicle is provided with an overhead door and a power drive for operating the door including a reversible electric motor for shifting a carriage fore and aft of the vehicle and thereby raising and lowering the door. As the carriage approaches the end of its traverse in either direction it trips a switch which sets up a circuit for reversing the direction of the motor. When the door is open, the operator manually actuates a start switch at the door end of the vehicle and thereby initiates the door closing operation. When the door is closed, the operator manually actuates another start switch from his seat in the cabin and thereby initiates the door opening operation. A friction clutch selectively operable from within or without the body of the vehicle for controlling power transmission is operatively interposed between the electric motor and the carriage. Normally, the clutch is engaged and the door cannot be opened manually. When the clutch is disengaged, the door may be opened manually.

3,444,651
CENTRIFUGING WHEEL
Max Geisseler, 14 Gemsgasse, 8200 Schaffhausen, Switzerland
Filed Nov. 30, 1966, Ser. No. 604,520
Int. Cl. B24c *3/00, 3/02*
U.S. Cl. 51—9 8 Claims



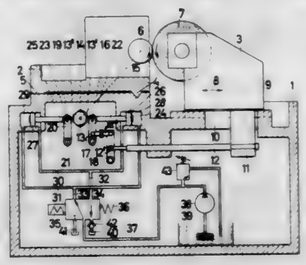
Centrifuging wheel comprising a preliminary accelerator, throwing blades which are symmetric with respect to a transverse axis about which they may be turned about a 180° angle and reinstalled to utilize a different surface of the blades, anchoring means having wedge shaped surfaces for retaining the blades while the wheel is rotating and applies centrifugal force and holding means which apply elastic pressure to the blades and retain them when the wheel is at rest and permit removal of the blades without releasing other fastening means.

3,444,652
LENS SURFACING MACHINE FOR FORMING BOTH SURFACES OF A LENS SIMULTANEOUSLY
Raymond T. Blum, Pittsford, and Theodore J. Zak, Irondequoit, N.Y., assignors to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Mar. 24, 1967, Ser. No. 625,651
Int. Cl. B24b *13/02*
U.S. Cl. 51—89 8 Claims



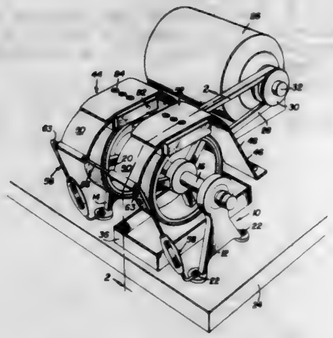
A lens forming machine for meniscus lenses which operates on both refractive surfaces simultaneously by lapping with diamond faced tools and/or polishing with polish impregnated pads.

3,444,653
CAM CONTROL MEANS FOR RELIEF GRINDING APPARATUS
Gerhard Stade, Berlin, Germany, assignor to Herbert Lindner G.m.b.H., Berlin, Germany
Filed May 16, 1967, Ser. No. 638,836
Claims priority, application Germany, May 18, 1966, L 53,629
Int. Cl. B24b *5/04, 49/00*
U.S. Cl. 51—165 8 Claims



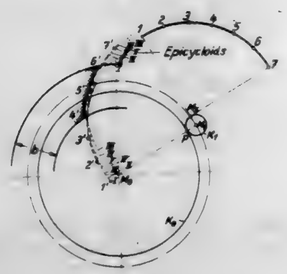
The disclosure relates to relief grinding apparatus in which relative movement of a grinding disk and the workpiece toward and away from each other is effected under the control of cam follower means engaged with cam means rotatable with a control shaft. The cam follower means are engaged with the cam means during a working stroke of the grinding disk, and are disengaged from the cam means during a faster return stroke.

3,444,654
ROTARY ABRASIVE WHEEL WETTING ATTACHMENT AND ABRASIVE PICKUP
Robert E. Tippa, 1504 Austin St., Levelland, Tex. 79336
Filed Jan. 24, 1966, Ser. No. 522,731
Int. Cl. B24b *55/02*
U.S. Cl. 51—267 10 Claims



A generally U-shaped frame for support from a suitable supporting structure with the frame embracing a rotary abrasive wheel and disposed in a plane generally coinciding with the medial plane of the wheel. The frame includes opposite leg portions interconnected at one set of corresponding ends by means of a bight portion and supported from the support structure at the other set of corresponding ends thereof. In addition, the bight portion of the frame includes a wetting and abrasive pickup element including surface portions facing and disposed for engagement with the periphery of the abrasive wheel and one leg portion of the frame is adjustable in effective length whereby the bight portion and wetting and abrasive pickup element supported there from may be shifted toward and away from engagement with the periphery of the abrasive wheel.

3,444,655
METHOD OF FORMING BEVEL GEARS
Gerhard Apitz, Hamburg, Germany, assignor to Heidenreich & Harbeck, Hamburg, Germany
Filed Jan. 14, 1965, Ser. No. 425,561
Claims priority, application Germany, Jan. 15, 1964, H 51,380
Int. Cl. B24b *1/00*; B23f *9/10*
U.S. Cl. 51—287 1 Claim

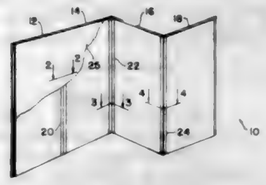


A method of forming bevel gears having arcuate teeth, wherein the gears are formed by either a milling or grinding operation, or both. The cutting edges of the machining edges being arranged in a circular configuration having a center eccentrically related to a first axis of rotation which orbits about a second axis of rotation such that the cutting edges are moved through an epicycloidal path, and a pair of machining edges being mounted upon the tool head wherein both flanks of a gear tooth are formed with one or fewer rotations of the tool head.

3,444,656
SELECTIVE CUTTING OF A BODY BY AIR ABRASION
Cyril Francis Drake, Harlow, Essex, Walter Eric Simpson, Great Amswell, Ware, and John Sydney Robinson, Harlow, Essex, England, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed July 27, 1966, Ser. No. 568,116
Claims priority, application Great Britain, Aug. 6, 1965, 33,808/65
Int. Cl. B24c *1/04*
U.S. Cl. 51—312 8 Claims

This is a method of selectively cutting a body consisting of a natural rubber and/or vulcanisable elastomer by air abrasion. The hardness of portions of the body is changed by exposure to radiation and/or heat, so that different portions of the body have different degrees of hardness. The body is then air abraded whereby the harder portions of the body are preferentially removed.

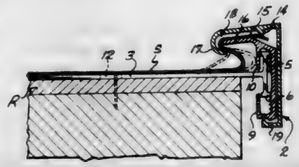
3,444,657
JOINT STRUCTURE FOR DRY WALL BUILDING PANELS
Clifford D. Swanson, 2101 Wellesley Drive, Lansing, Mich. 48910
Filed Oct. 31, 1966, Ser. No. 590,584
Int. Cl. E04b *1/00, 5/00, 7/00*
U.S. Cl. 52—288 3 Claims



Joint structure for dry wall building panels is disclosed. The structure includes recesses in the exposed surface of the adjacent panel edges having vertical transverse abutment surfaces extending substantially perpendicularly of the exposed panel surfaces and a plastic joint strip positioned within the recesses at the edges of the adjacent building panels having a width slightly larger than the total dimension of the recesses in the adjacent building panel edges and vertically extending abutment surfaces at the edges thereof engageable with the abutment surfaces in the recesses in the building panels, whereby the building panels may be moved toward each other to insure abutment of the edge surfaces of the joint strip with the abutment surfaces of the recesses.

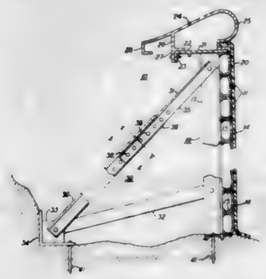
3,444,658
ROOFING SHEET-ANCHORING APPARATUS
Klaus Göbel, Zeughaus Str. 41, Trier, Germany
Filed Dec. 15, 1966, Ser. No. 602,067
Claims priority, application Germany, Jan. 11, 1966, G 45,678
Int. Cl. E04d *13/14, 5/14, 3/36*
U.S. Cl. 52—94 5 Claims

A holder attached to roof sheathing includes an inner tongue section and a complemental outer channel section embracing the tongue. The tongue and channel sections are spaced apart for receiving between them the upper fold of a roofing sheet edge portion formed into a reverse bend. The lower fold of the reverse bend is unrestrained, to be varied in size correasponding to the expansion or contraction of the sheet in response to temperature changes. The upwardly projecting reverse bend of the roofing sheet edge and the portions of the complemental



sections enclosing the roofing edge prevent entry of water and wind between the roofing sheet edge and the roof sheathing. The inner tongue section includes a portion sloping downwardly away from the tongue edge over which water can flow to drain from the space between the cooperating sections.

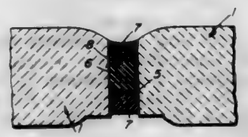
3,444,659
BELOW-GROUND SWIMMING POOL ASSEMBLY
Vincent Shanni, Scotch Plains, N.J., assignor, by mesne assignments, to Anthony Pools, Inc., South Gate, Calif., a corporation of Delaware
Filed Dec. 4, 1967, Ser. No. 687,579
Int. Cl. E04h *12/20*; E02d *5/74*
U.S. Cl. 52—149 10 Claims



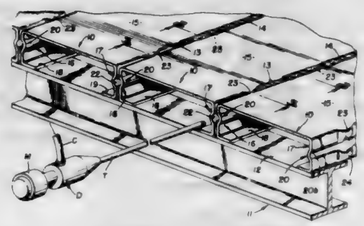
A swimming pool assembly comprises a plurality of abutting wall panels having externally convex surfaces. A telescoping brace member permits the wall section to be supported by an angle member anchored to the ground at any of various elevations. A coping for holding a swimming pool liner has an L-shaped portion which is screwed to a corner of a coping support member affixed to the top of the wall section. Abutting wall sections are bolted together by means of a corner member including a cylindrical surface for rounding the corner of the swimming pool enclosure.

3,444,660
PRE-GROUTED CERAMIC TILE ASSEMBLIES
Harold R. Feichter, Canton, Ira A. Abernethy, North Canton, Charles F. Fishley, Mineral City, Stephen J. Cable, Canton, and Olin M. Hoffman, Massillon, Ohio, assignors to United States Ceramic Tile Company, Canton, Ohio, a corporation of Delaware
Continuation-in-part of application Ser. No. 224,817, Sept. 19, 1962. This application Sept. 1, 1966, Ser. No. 589,148
Int. Cl. E04c *1/24*; E04f *13/08*; E04h *14/00*
U.S. Cl. 52—309 15 Claims

The disclosure is directed to ceramic tiles and tile assemblies provided with an improved grout structure. The grouting material is prefabricated in conjunction with the tile and is provided with a configuration to permit mechanical interlocking between the tiles. The grouting material is provided in the rear face thereof with elongated grooves which increases the flexibility of the grout joint while reducing the tensile stress on the grout to tile bond during flexure.



3,444,661
NAIL-RECEIVING METAL WALL-FORMING MEMBER FOR FREIGHT-TRANSPORTING VEHICLES
Albert Santho, 1920 Brandywine Drive, Columbus, Ohio 43221
Filed Oct. 6, 1967, Ser. No. 673,325
Int. Cl. E04b *1/56*
U.S. Cl. 52—376 2 Claims



A metal wall-forming member in the form of a relatively shallow, inverted channel defining an elongated, outer, load-bearing panel formed along each side thereof with integral, generally perpendicular and coextensive side webs terminating in inturned anchoring flanges, and wherein each of the side webs is formed in its intermediate region with a longitudinally extending, concave corrugation. The side webs, upon assembly of a plurality of such members in parallel, side by side relation, providing between them a frictional nail-receiving and holding slot having an intermediate, relatively enlarged chamber or passage portion into which may be axially inserted an elongated injection tube or nozzle for filling the nailing slot with a mastic or plastic filler material.

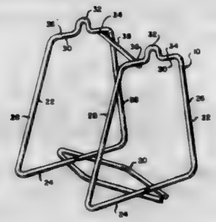
3,444,662
REDUCING EDGE MOMENTS IN A BONDED LAMINATED LOAD-CARRYING GLASS AND ATTACHMENT ASSEMBLY
Gerald K. Partain, Hawthorne, Calif., assignor to Whittaker Corporation, Los Angeles, Calif., a corporation of California
Filed Jan. 27, 1966, Ser. No. 523,385
Int. Cl. E06b *3/02*; E04c *2/54*; B64c *1/14*
U.S. Cl. 52—623 6 Claims



A glass assembly having glass layers separated by a plastic interlayer, disposed around the edge of said assem-

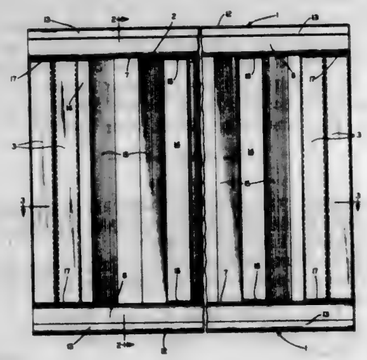
bly a pair of adherends for gripping and retaining each individual glass layer, the improvement wherein one of said pair of adherends grips it glass layer only at spaced intervals.

3,444,663
SUPPORT MEANS FOR EXPANDED METAL MESH
Bruce Helm, St. Clairsville, Ohio, assignor to Wheeling Steel Corporation, a corporation of Delaware
Filed Dec. 26, 1967, Ser. No. 693,453
Int. Cl. E04c *5/16, 3/22, 2/32*
U.S. Cl. 52—650 10 Claims



A support means for supporting and positioning expanded metal mesh, which means includes a diamond shaped base member adapted to be snugly received in a mesh opening, a pair of spaced upright trapezoidal shaped members each of which is fixed at one end to the base member and transversely extending therebeyond to bear on portions of at least four legs of mesh material and with the upper end of each upright member engaging two legs of mesh material.

3,444,664
RIBBED WEB GIRDER
Homer Russell Fink, Jr., and Victor P. Scott, Canton, Ohio, assignors to Macomber, Incorporated, Canton, Ohio, a corporation of Ohio
Filed Jan. 16, 1967, Ser. No. 609,568
Int. Cl. E04c *3/07*; E04b *5/10*
U.S. Cl. 52—732 3 Claims



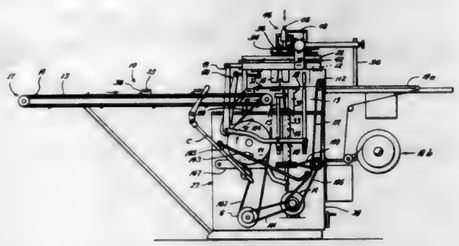
A fabricated girder having a ribbed web formed of a continuous sheet or strip of transversely corrugated or ribbed sheet metal formed of a roof deck sheet or the like. Top and bottom chords of the girder comprise sheet metal structural members each having a longitudinal groove within which the adjacent edge of the ribbed web sheet is welded. Tubular sheet metal posts reinforce the ends of the girder.

3,444,665
VACUUM PACKAGING APPARATUS
William F. Prena, Norridge, Ill., assignor, by mesne assignments, to John Morrell & Co., Chicago, Ill., a corporation of Delaware
Filed Oct. 21, 1966, Ser. No. 588,423
Int. Cl. B65b *31/02, 63/00*
U.S. Cl. 53—112 6 Claims



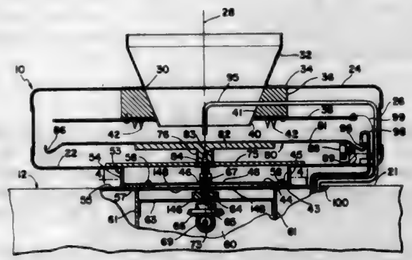
This invention relates in general to packaging apparatus, and more particularly to apparatus for packaging articles in a substantially evacuated receptacle.

3,444,666
AUTOMATIC WRAPPING APPARATUS
George A. Sarandos, 6906 Ashcroft, Houston, Tex. 77036
Filed Oct. 5, 1966, Ser. No. 584,387
Int. Cl. B65b *17/00, 55/00, 61/00, 65/08, 13/00, 27/00, 11/06, 49/00*
U.S. Cl. 53—167 8 Claims



An automatic wrapping apparatus for automatically wrapping a product having a handle or other projection extending from its body.

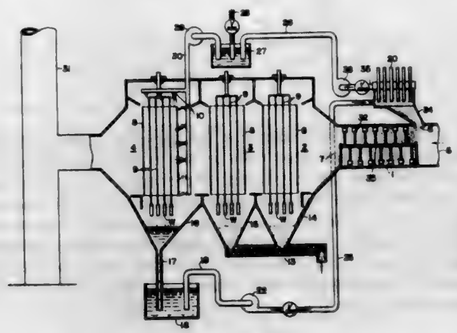
3,444,667
ELECTROSTATIC PRECIPITATOR
Doyle D. Mullin, Minneapolis, Minn., assignor to Litton Systems, Inc., Beverly Hills, Calif., a corporation of Maryland
Filed Mar. 1, 1968, Ser. No. 709,562
Int. Cl. B03c *3/53, 3/40*
U.S. Cl. 55—113 18 Claims



An electrostatic precipitator of the well known type in which particle ladened air is first passed through an electric field where the particles receive an electric charge of one polarity and then passed through another electric field where the charged particles are attracted

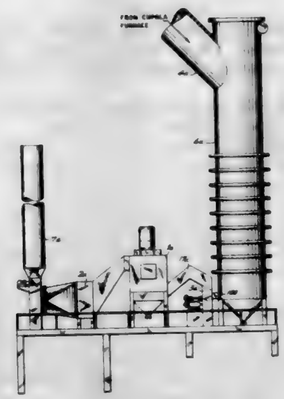
to an electrode having the opposite polarity. The attracting or collector electrode is of the type which comprises a rotatable disk over which a film of liquid is caused to flow outwardly from the center thereof. The charged particles are electrically precipitated into the moving film of collector liquid and are thereby collected. The electrostatic precipitator has upper and lower casing sections with the upper casing section housing an air inlet nozzle and a rotatable collector disk and the lower casing section housing a variety of parts, including an exhaust chamber and an exhaust blower. Valve means for controlling the flow of air from the upper casing section to the exhaust chamber in the lower casing section is provided between the casing sections. The upper casing section is angularly moveable relative to the lower casing section and the valve means is controlled by this angular movement to vary the flow rate of the air which is drawn in through the inlet nozzle and passes over the rotatable collector disk.

3,444,668
APPARATUS FOR ELECTROSTATIC PRECIPITATION OF DUST
Senichi Masuda, Tokyo, Japan, assignor to Onoda Cement Company, Limited, Onoda, Yamaguchi, Japan
Filed Mar. 6, 1964, Ser. No. 349,997
Int. Cl. B03c *3/78, 3/01*
U.S. Cl. 55—118 3 Claims



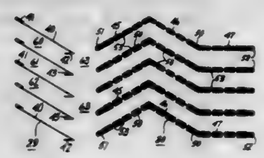
1. Apparatus for separating and precipitating dust particles from a gas flow containing dust particles comprising, means defining a first chamber in which said gas flow is received, means for collecting and removing dust particles from said gas flow in said first chamber, means for mixing with said gas flow solid particles comprising a slurry of water and dust particles to remove dust from said gas flow in said first chamber, means defining a dry second chamber in communication with said first chamber, electrically energized electrodes in said second chamber for precipitating dust from said gas flow received from said first chamber, means collecting and removing dust precipitated in said second chamber, means defining a third chamber in communication with said second chamber, receiving said gas flow from said second chamber, electrically energized electrodes in said third chamber for precipitating dust particles from said gas flow in said third chamber, means for spraying water into said third chamber into contact with said gas and including spraying said electrodes for washing dust thereoff, collecting means collecting water and dust from said third chamber as a slurry, means connected to the last mentioned collecting means to apply said slurry to said gas flow in said first chamber, and means to remove water from said slurry before applying said slurry to said gas flow comprising a disc filter connected to said collecting means receiving a slurry from said collecting means to produce filter cakes and removing the water from said slurry for spraying into said third chamber, means for discharging the filter cakes and water as a slurry into said first chamber, and an agitator in said first chamber agitating the charged cakes in said first chamber for contacting the slurry with the gas flow containing dust particles.

3,444,669
HIGH CAPACITY GAS WASHER
Nicholas J. Panzica and Robert M. Jamison, Detroit, and Emil Umbricht, Northville, Mich., assignors to Ajem Laboratories, Inc., Livonia, Mich.
Continuation of application Ser. No. 377,190, June 23, 1964. This application Feb. 3, 1967, Ser. No. 613,970
Int. Cl. B01d *47/08*
U.S. Cl. 55—230 5 Claims



Air pollution control gas washing apparatus for removing significantly greater percentages of pollutant than previously possible by comparable prior devices, said apparatus having separately contained washing, moisture elimination, and blower sections joined by elongated ducts and with said washing section incorporating a rotary spray means which hurls liquid droplets in a dense, high-velocity, spray pattern across the gaseous flow therethrough.

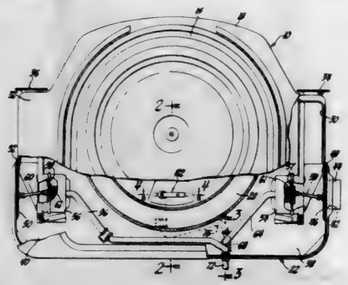
3,444,670
APPARATUS FOR TREATING GAS
Ernest C. Hungate, Rte. 5, P.O. Box 88, Greensboro, N.C. 27402
Filed June 21, 1965, Ser. No. 465,579
Int. Cl. B01d *47/06*
U.S. Cl. 55—257 3 Claims



1. In an apparatus for treating a gas stream with a liquid the combination of means for propelling the gas stream at a high velocity, means for placing substantial quantities of liquid into intimate contact with the gas stream to condition the gas stream and an eliminator for removing liquid particles from the gas stream, said eliminator comprising impingement means including vertically extending wall portions angularly disposed with

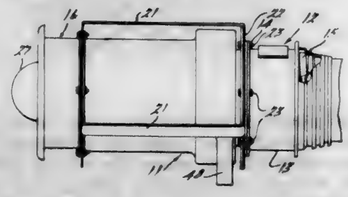
respect to the gas stream which partially remove liquid particles from the gas stream, a plurality of substantially vertical wall members being located downstream from the impingement means, said wall members including a first planar member and a second planar member angularly disposed with respect to the first planar member, and both being angularly disposed to the direction of flow of the gas stream, said planar members defining a plurality of substantially parallel optically dense paths having a general zig-zag configuration so that liquid particles in the gas stream passing through the zig-zag paths impinge on the planar members, said planar members having a coating of resilient and porous foam material and a plurality of vertically disposed, spaced, recessed grooves being formed in the coating said grooves extending substantially the entire height of said planar members.

3,444,671
ENGINE INDUCTION AIR FLOW CONTROL
Robert T. Florine, Flint, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Feb. 20, 1967, Ser. No. 617,178
Int. Cl. F02m *35/14, 31/06*
U.S. Cl. 55—267 **5 Claims**



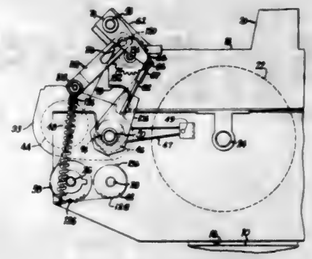
An internal combustion engine air cleaner and silencer assembly having a pair of inlets for air at ambient temperature is connected to a source of heated air. A primary valve controls the flow of heated air into the air cleaner and the flow of ambient air through one inlet. The primary valve is positioned by an induction vacuum operated motor; the vacuum sensed by this motor is varied by a thermostatically operated air bleed. A secondary valve, operated by a motor responsive solely to induction vacuum, controls the flow of ambient air through the other inlet.

3,444,672
AIR CLEANER FOR TURBINE ENGINES
Darriel L. Alsobrooks, Grosse Ile, Mich., assignor to Michigan Dynamics, Inc., a corporation of Michigan
Filed May 8, 1967, Ser. No. 636,985
Int. Cl. B01d *45/16, 45/14*
U.S. Cl. 55—306 **3 Claims**



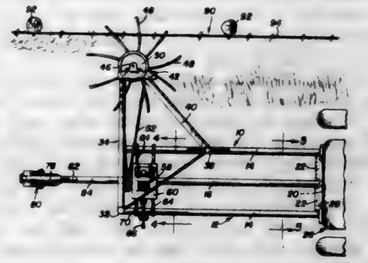
This application discloses a dynamic air cleaner for removing foreign particles from the intake air of a gas turbine engine. The air cleaner embodies a centrifugal impeller for imparting a swirling motion to the intake air to drive the contaminants from the air. The contaminants are discharged through a scroll casing that surrounds the air cleaner. Static vanes are disposed upstream of the impeller to impart an initial swirl to the intake air for reducing the horsepower requirements necessary to drive the impeller. In addition, straightening vanes are positioned in the downstream end of the cleaner so that the discharged air will flow in an axial direction into the associated air inlet of the gas turbine engine.

3,444,673
FEEDER DRIVE MECHANISM
Thomas Evans, Bettendorf, Iowa, assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Continuation-in-part of application Ser. No. 551,720, May 20, 1966. This application Dec. 9, 1966, Ser. No. 600,489
Int. Cl. A01d *17/00*
U.S. Cl. 56—1 **6 Claims**



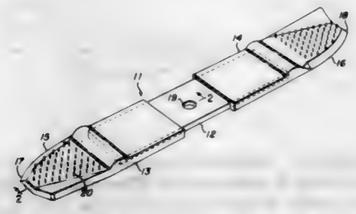
A feeder drive mechanism for harvesters, and having a frame with lower feed rolls on the frame and upper feed rolls movable up and down. These lower and upper feed rolls are driven together, but the drive is at only one end of the rolls. A torsion mechanism is operatively connected relative to the upper rolls so that there will be uniform pressure exerted across upper rolls and of course at both ends of the upper rolls, relative to the crop material passing between the lower and upper rolls.

3,444,674
FENCE CLEANER
Clark L. Huff, P.O. Box 819, Kimball, Nebr. 69145, and Bruce E. Huff, N. Rte., Box 84A, Dix, Nebr. 69133
Filed Aug. 4, 1966, Ser. No. 570,190
Int. Cl. A01d *35/26, 55/18, 49/00*
U.S. Cl. 56—25.4 **6 Claims**



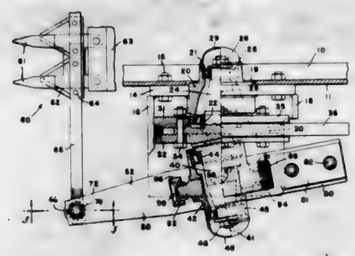
An upstanding rotary shaft journaled from one side of a support therefor adapted to move along one side of a fence of the type including spaced posts interconnected by a vertically spaced generally horizontal members extending between adjacent posts and disposed generally in the same vertical plane. At least one elongated and generally radially outwardly projecting flexible arm member is carried by the shaft for rotation therewith and includes an outer end portion swingable through a circular path including a fully exposed unshrouded segment thereof disposed outwardly of the side of the support from which the shaft is journaled and which may be disposed on the side of the vertical plane of the fence remote from the side of the fence along which the support is moving.

3,444,675
BLADE FOR MOWING
Abraham L. Freedlander, Dayton, Ohio, and Robert E. Matthews and Wayne C. Garrett, Waynesville, N.C., assignors to Dayco Corporation, Dayton, Ohio, a corporation of Delaware
Filed Feb. 19, 1968, Ser. No. 706,376
Int. Cl. A01d *55/18*
U.S. Cl. 56—295 **3 Claims**



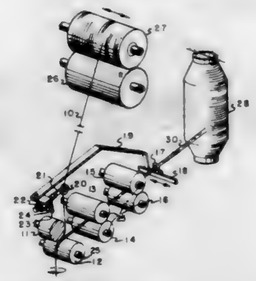
A flexible blade for mowing primarily formed of an elastomeric material and having a rigid metal or plastic central mounting plate within the blade for mounting to the lawn mower shaft. Flexible bristles are located on the upper surface of the blade near the cutting edges to assist in absorbing the impact of stones.

3,444,676
DRIVE
John K. Hale, New Holland, Emmett F. Glass, Akron, and Richard P. Bernhardt, Leola, Pa., assignors to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed Mar. 23, 1965, Ser. No. 442,021
Int. Cl. A01d *55/02*
U.S. Cl. 56—296 **10 Claims**



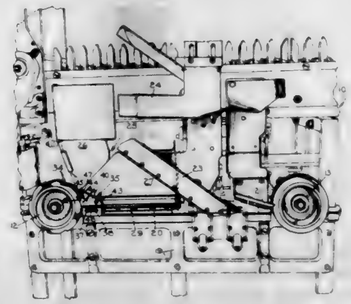
A sickle drive mechanism having an elongated horizontally extending drive arm supported for pivotal movement about a vertically extending axis, one end of the drive arm being pivotally connected to the sickle, a pair of legs affixed to the drive arm on opposite sides respectively of said vertical axis and extending in the same direction upwardly thereof, a wobble drive projecting between said legs, and means pivotally connecting diametrically opposite sides of the wobble section to said legs whereby when said shaft is rotated said legs and drive arm are oscillated and the sickle is reciprocated.

3,444,677
APPARATUS FOR PRODUCTION OF STRETCH CORE YARNS
William J. Henry, Greenville, S.C., assignor to Deering Millikan Research Corporation, Spartanburg, S.C., a corporation of Delaware
Filed June 19, 1963, Ser. No. 288,999
Int. Cl. D02g *3/32*
U.S. Cl. 57—12 **3 Claims**



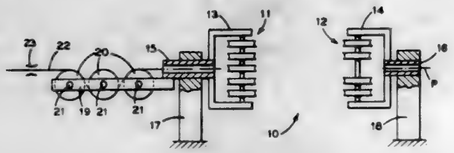
Apparatus for covering an elastic core yarn by drafting an inextensible textured fibrous roving and twisting the same about the core yarn, comprising a plurality of pairs of drafting rollers, traverse means for directing a strand of roving into the nip portion of the rollers while laterally moving the roving therebetween, and yarn guiding means operatively connected to the traverse means for movement therewith and adjustably positioned with respect thereto for guiding and continuously maintaining a running length of tensioned elastic core yarn on an edge of the ribbon-like strand passing into the nip portion of the front pair of drafting rollers, whereby the roving can be wrapped about the elastic core yarn so that the core yarn lies substantially uniformly at the axis of the composite yarn formed thereby.

3,444,678
YARN SEVERING MECHANISM
Joseph W. Dubois, North Smithfield, R.I., assignor, by mesne assignments, to John Donald Marshall and Horace L. Bomar as Trustee of the Carolina Patent Development Trust
Filed Mar. 25, 1968, Ser. No. 715,749
Int. Cl. D01h *9/10;* **B65h** *75/32*
U.S. Cl. 57—53 **8 Claims**



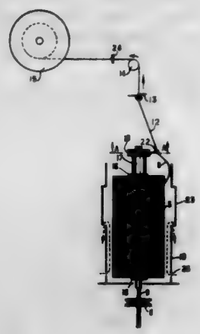
A yarn severing mechanism for a doffing mechanism adapted to remove bobbins from a row of spindles carried on a spinning frame with means for guiding a length of yarn extending between a doffed bobbin and its respective spindle to a position where it is then guided into contact with a cutting element.

3,444,679
ACCUMULATOR STRANDING MACHINE
Herbert Kubiak, Misburg, Friedrich Schatz, Hannover, and Harry Staschewski, Langenhagen, Germany, assignors to Kabel- und Metalwerke Gutehoffnungshutte Aktiengesellschaft, Hannover, Germany, a corporation of Germany
Filed June 26, 1967, Ser. No. 648,618
Claims priority, application Germany, June 30, 1966, H 59,832
Int. Cl. D01h 7/02
U.S. Cl. 57—59 5 Claims



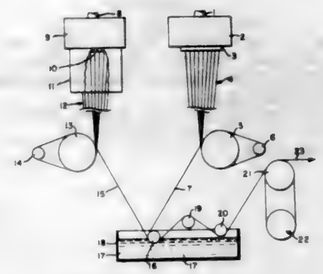
A machine of the accumulator type for stranding wires, cables and other elongated elements; and having means for setting the position of the elements being stranded relative to each other to provide a definite lay of the stranded elements as they pass into the accumulator.

3,444,680
APPARATUS FOR YARN COMBINING OR DOUBLING
Gerard Derudder, Halluin, and Rodolphe Derudder, Tourcoing, France, assignors to Société Anonyme dite Société Textile Saint-Antoine et Textile Halluinois S.A., Halluin, France, a corporation of France
Filed Oct. 6, 1967, Ser. No. 673,371
Claims priority, application France, Oct. 7, 1966, 18,767
Int. Cl. D01h 7/02, 7/24; D07b 3/02
U.S. Cl. 57—59 6 Claims



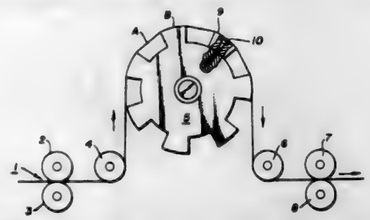
Multifold yarns are produced by combining two or more yarns and winding them without twist on a bobbin to relatively large dimensions, and twisting is thereafter effected on a continuous frame by providing a freely rotating traveller and guide eyelet through which the yarn is drawn from the rotating package to twist the yarn which is then wound in suitable way. This arrangement permits assembly at a speed greater than 250 m./min. to form packages having a weight greater than 1.5 kg. The bobbin used may be wound to a diameter greater than 100 mm. and a length greater than 200 mm.

3,444,681
BULKABLE COMPOSITE POLYESTER YARN OF CONTINUOUS FILAMENTS HAVING DIFFERENT RESIDUAL SHRINKAGE AFTER BOILOFF
Cecil E. Reese, Kinston, N.C., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Mar. 8, 1966, Ser. No. 532,666
Int. Cl. B02g 3/02
U.S. Cl. 57—140 2 Claims



Composite, continuous-filament polyester yarn is disclosed which is composed of differentially shrinkable filaments capable of developing bulkiness subsequent to conversion to fabric, and after the fabric is scoured and dyed, when heated at temperatures above 100° C. during dry textile finishing operations. The yarn is preferably prepared by melt spinning filament species of the same chemical composition but substantially different relative viscosities, annealing the higher relative viscosity species during spinning to have approximately the same natural draw ratio as the other species, combining and drawing the two species to at least the natural draw ratio, and heat-setting the drawn yarn.

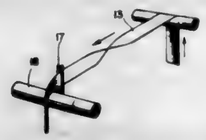
3,444,682
TOW TREATMENT FOR PREPARATION OF HIGH-BULK YARNS
Ezio Polacco and Francesco Denti, Mestre, Italy, assignors to ACSA—Applicazioni Chimiche S.p.A., Milan, Italy
Filed Aug. 9, 1966, Ser. No. 571,299
Claims priority, application Italy, Aug. 10, 1965, 18,198/65
Int. Cl. D02g 3/02; D01d 5/20
U.S. Cl. 57—140 10 Claims



A wholly oriented staple fiber of a polymer of acrylonitrile comprised of sharply defined alternate segments B and A along its longitudinal axis, said segment B being of reduced denier with respect to segment A by reason of its having been stretched to a length of about 1.1 to 2 times as great as that of the said segment A. Also, staple fibers of the aforesaid type after having been shrunk in tensionless condition and yarns and fabrics comprised

of such staple. Further, processes for the preparation of such staple predicated upon heat plasticizing a tow of oriented and relaxed filaments in repeating spaced segments, then stretching said tow, cutting the same into staple and, where appropriate, shrinking the same.

3,444,683
MANUFACTURE OF ENDLESS THREADLIKE PRODUCTS OF THERMOPLASTIC MATERIALS
Rolf Hessenbruch, Remscheid, Germany, assignor to Barmag Barmer Maschinenfabrik Aktiengesellschaft, Wuppertal, Germany
Filed July 17, 1967, Ser. No. 653,694
Claims priority, application Germany, July 23, 1966, B 88,153
Int. Cl. D02g 3/06; D01h 13/04; B29f 3/08
U.S. Cl. 57—157 5 Claims



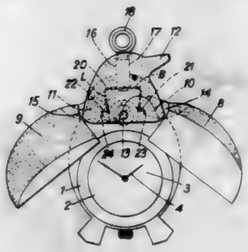
A method of winding or spooling unsplit or partly split strips of thermoplastic materials. In the method thin, wide strips of thermoplastic materials which have been stretched and are suitable for splitting or cutting into threadlike products are compressed across their width in an open guide to form threadlike products of compact cross-section having nearly elliptical or round shape. The compacted strips can be fixed by heat treatment if such is desired. The process makes it possible to wind the unsplit or partly split strips with good thread deposit and withdrawal characteristics.

3,444,684
METHOD OF FORMING A MULTI-STRAND CABLE
Roger J. Schoerner and Bobby A. Rowland, Carrollton, Ga., assignors to Southwire Company, Carrollton, Ga., a corporation of Georgia
Original application Jan. 1, 1967, Ser. No. 608,306, now Patent No. 3,383,704, dated May 14, 1968. Divided and this application Apr. 10, 1968, Ser. No. 720,308
Int. Cl. D07b 1/06; D02g 3/36
U.S. Cl. 57—161 10 Claims



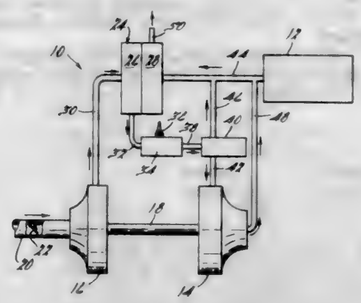
What is disclosed herein is a method of forming of a multi-strand cable involving winding a plurality of layer strands about at least one inner strand, and subsequently or simultaneously deforming each of the layer strands by an amount which is sufficient to form a flattened region along the length of the layer strand while leaving the layer strand substantially circular in cross-section. The resulting multi-strand cable has the advantages without the disadvantages of a conventional compact cable and a conventional uncompacted cable.

3,444,685
DEVICE FOR ACTUATING OPENABLE COVER MEMBERS FOR WATCH FACE
Georges Juillerat, Plein Soleil, Malleray, Bern, Switzerland
Filed Nov. 20, 1967, Ser. No. 684,302
Claims priority, application Switzerland, Jan. 31, 1967, 1,394/67
Int. Cl. G04b 37/00
U.S. Cl. 58—95 9 Claims



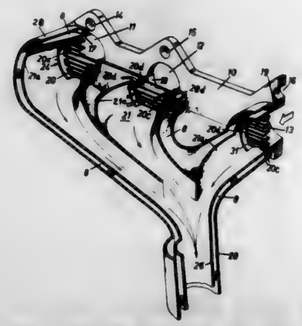
A watch having openable door members for exposing the watch dial face which is normally covered by said door members, said members being arranged to pivot in opposite directions relative to each other and being urged in either of opposite pivotal directions by a snap-over type spring means which is elastically deformed therebetween and which performs its snap-over action by virtue of being guided to move only in a direction which is transverse to the plane in which lie the door member pivot axes, said spring means being so movable consequent to rotation of either door member.

3,444,686
GAS TURBINE SMOG CONTROL FOR INTERNAL COMBUSTION ENGINE
James Knowles, Bloomfield Hills, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Nov. 22, 1967, Ser. No. 685,203
Int. Cl. F02b 41/10; F02c 7/10
U.S. Cl. 60—11 8 Claims



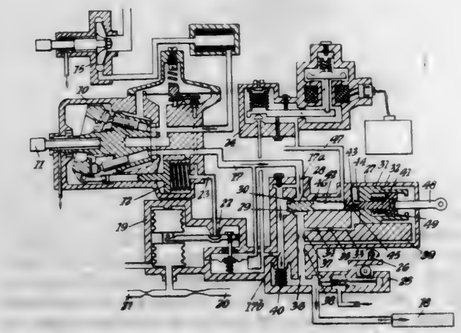
A power plant including the combination of a reciprocating engine with a gas turbine engine and designed particularly to decrease engine emissions contributing to smog. A portion of the turbine nozzle gas is combined with the exhaust gases of the reciprocating engine to serve as the hot fluid for a turbine regenerator. Also, a turbine compressor throttle valve is utilized to maintain constant turbine speed during periods of light turbine loads.

3,444,687
METHOD AND APPARATUS FOR AFTER-BURNING EXHAUST GASES
Louis Andersson, Gotgatan 73, Stockholm, Sweden
Filed Apr. 11, 1966, Ser. No. 541,619
Claims priority, application Switzerland, Mar. 14, 1966, 3,647/66
Int. Cl. F01n *1/14, 3/10*
U.S. Cl. 60—30 **19 Claims**



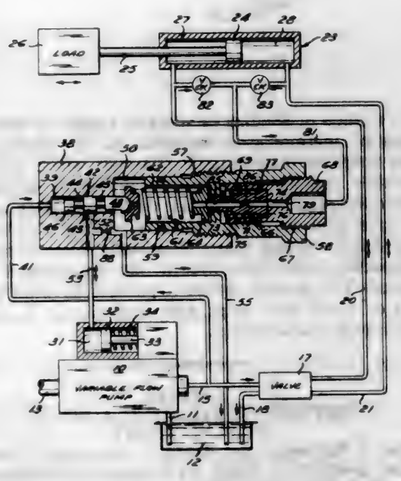
A method and apparatus for the afterburning of exhaust gases produced in a combustion process wherein exhaust gases flowing through at least one flow channel are delivered to an afterburner located in an afterburning zone which occupies at least almost the entire flow channel cross-section. Secondary air is delivered to the afterburning zone for admixture with the exhaust gases to form a gas mixture, the exhaust gases being delivered to the afterburning zone at a temperature sufficient for ignition of the carbon monoxide in the exhaust gases in the presence of the secondary air. The amount of delivered secondary air of the gas mixture is controlled so that the temperature prevailing in the afterburning zone is above 950° C.

3,444,688
FUEL FLOW CONTROL APPARATUS FOR GAS TURBINE ENGINES
Eugene Harold Warne, Shirley, Solihull, and Geoffrey Albert Long, Sutton Coldfield, England, assignors to Joseph Lucas (Industries) Limited, Birmingham, England
Filed Nov. 14, 1966, Ser. No. 594,210
Int. Cl. F01c *9/02;* **F02d** *9/08;* **F01d** *17/00*
U.S. Cl. 60—39.28 **3 Claims**



Apparatus for controlling the supply of fuel to a gas turbine engine comprises a throttle slidably mounted in a body to control flow of fuel through a passage in the body, a piston connected to the throttle and disposed in a cylinder in the body, a restricted passage between the upstream side of the throttle and one end of the cylinder, a plunger coaxially and slidably mounted within the piston, a manually operable control for the plunger, passage means in the plunger through which fuel can flow to drain, at a rate which is dependent upon the relative positions of the plunger and piston, and means providing a force on the piston to oppose the fuel pressure at said one end of the cylinder to enable equilibrium conditions to be obtained.

3,444,689
DIFFERENTIAL PRESSURE COMPENSATOR CONTROL
Tadeusz Budzich, Moreland Hills, Ohio, assignor to The Weatherhead Company, Cleveland, Ohio, a corporation of Ohio
Filed Feb. 2, 1967, Ser. No. 613,533
Int. Cl. F15b *11/02, 13/16*
U.S. Cl. 60—52 **27 Claims**

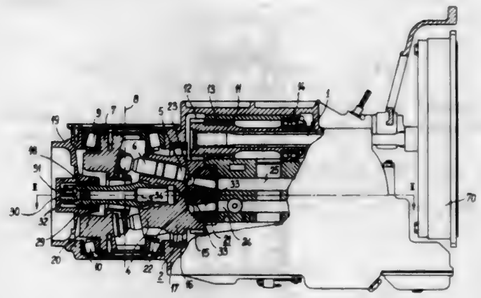


A fluid pressure system in which an expansible chamber motor is operated by a variable displacement pump. The pump displacement is regulated by a control valve which operates in response to the motor chamber pressure to vary the pump displacement to maintain the pump outlet pressure higher than the motor pressure over a varying range of motor pressures. The same control valve also operates as a pressure compensated control valve to limit the maximum pressure of the pump.

3,444,690
APPARATUS FOR THE HYDROSTATIC TRANSMISSION OF MECHANICAL TORQUE
Edmond Henry-Biabaud, Paris, France, assignor to Societe Anonyme Andre Citroen, Paris, France
Filed May 5, 1967, Ser. No. 636,316
Claims priority, application France, May 23, 1966, 62,513
Int. Cl. F16d *31/02, 33/00;* **F04b** *1/10*
U.S. Cl. 60—53 **7 Claims**

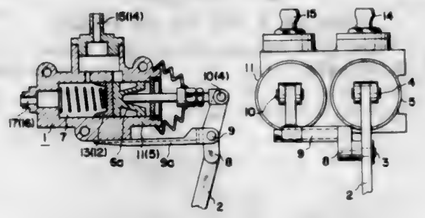
Apparatus for the hydrostatic transmission of a mechanical torque, which comprises a rotary barrel pump having a fixed spherical distributor face and an adjustable spherical face for regulating the cylinder displacement,

said pump supplying fluid under pressure to a plurality of hydraulic motors, characterised in that it is driven laterally through stepdown gears so disposed as to assist



in reducing the losses of efficiency in the transmission and balancing at least partially the efforts produced during the operation of the apparatus.

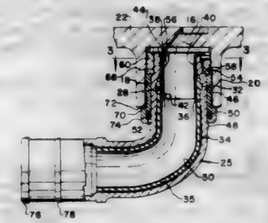
3,444,691
MULTIPLE MASTER CYLINDER CONTROL DEVICE
Karo Shimada, 774, Kugahara-machi, Ota-ku, Tokyo-to, Japan
Filed Nov. 21, 1967, Ser. No. 684,829
Claims priority, application Japan, Nov. 24, 1966, 41/77,124
Int. Cl. F15b *7/08, 11/22*
U.S. Cl. 60—54.6 **4 Claims**



Two master cylinders closely positioned and connected respectively in two separate hydraulic systems are actuated by a compact differential linkage mechanism consisting essentially of a main lever pedal operated at one end and coupled at the other end to a piston of one master cylinder and a second lever pivoted at an intermediate point on a stationary pivot and coupled at one end to the piston of the other cylinder and at the other end to an intermediate point of the main lever to provide a movable pivot for the main lever.

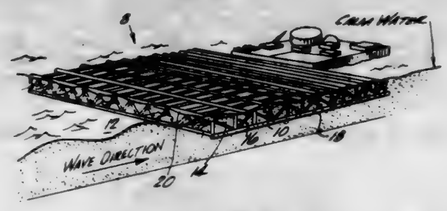
3,444,692
EXHAUST PIPE ASSEMBLY FOR PNEUMATIC TOOLS
Mervin C. Huffman, Denver, Colo., assignor to Gardner-Denver Company, a corporation of Delaware
Filed Aug. 31, 1967, Ser. No. 664,864
Int. Cl. F01b *31/02, 31/16*
U.S. Cl. 60—64 **2 Claims**

An exhaust pipe assembly for pneumatic tools, particularly applicable to percussion type tools, consisting of a swivelly mounted curved tubular conduit in combination with a flexible inner sleeve fixed at one end relative to the outer surrounding conduit. The inner sleeve is of a flexible material such as neoprene and is subject to flexing and vibrating movement in response to the kinetic energy transmitted to it from the exhaust fluid pulsations



emitting from the tool working chamber. The flexing inner sleeve serves to break up and prevent the lodging of ice in the tool exhaust system and also serves as a simple yet effective muffler of the exhaust noise generated by the tool working fluid.

3,444,693
WATER WAVE SUPPRESSION DEVICE
Harold M. Busey, Kennewick, Wash., assignor, by mesne assignments, to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland
Filed Feb. 27, 1967, Ser. No. 618,841
Int. Cl. E02b *3/04*
U.S. Cl. 61—5 **2 Claims**



A horizontal structure of floating elements are attached to each other whereby the mechanical energy of water waves is converted to turbulence. Waves are progressively dampened as they travel through the structure.

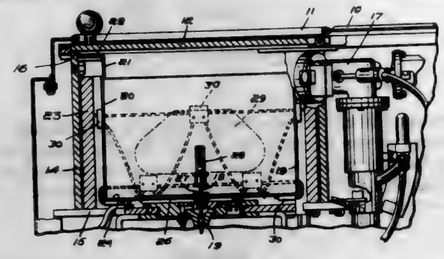
3,444,694
CURVILINEAR TERRACE CONSTRUCTION AND PLANTER BLOCKS AND METHODS THEREFOR
Leon Frehner, 2129 South 20th East, Salt Lake City, Utah 84106
Filed Oct. 25, 1967, Ser. No. 677,932
Int. Cl. E02d *17/20, 29/16;* **A01g** *9/02*
U.S. Cl. 61—35 **15 Claims**



Methods, planter blocks and terrace stacking arrangements for constructing decorative curvilinear portions of

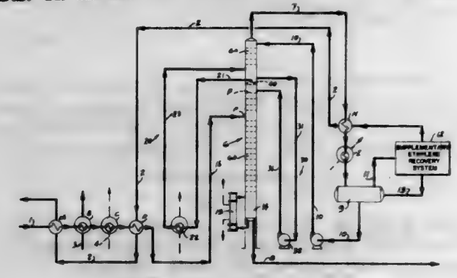
earth-retaining terrace walls adapted to provide spaces containing exposed soil where flowers and the like can be planted.

3,444,695
REFRIGERATED CENTRIFUGE
William E. Waye, Needham Heights, and Peter N. Kotsifas, Arlington, Mass., assignors to International Equipment Company, Needham Heights, Mass., a corporation of Massachusetts
Filed Mar. 20, 1967, Ser. No. 624,485
Int. Cl. F25b *21/02, 29/00*
U.S. Cl. 62—3 **14 Claims**



Refrigerated centrifuges, the refrigerating means comprising thermo-electric heat transfer units secured in spaced relation to each other on the outer surface of the shell housing the rotor.

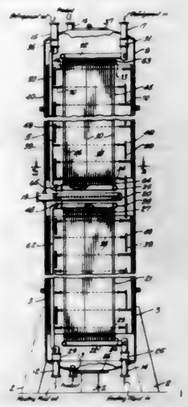
3,444,696
DEMETHANIZATION EMPLOYING DIFFERENT TEMPERATURE LEVEL REFRIGERANTS
Ray L. Geddes, Waban, and John K. Jacobs, Boston, Mass., assignors to Stone & Webster Engineering Corporation, Boston, Mass., a corporation of Massachusetts
Filed Feb. 10, 1967, Ser. No. 615,154
Int. Cl. F25j *3/02*
U.S. Cl. 62—28 **2 Claims**



Feed is introduced into a demethanizer at a temperature in the range of −50° F. to −10° F. Heat is removed from an intermediate section in the demethanizer at a point above the feed point by evaporating liquid ethylene or ethane refrigerant at a temperature level in the range of −60° F. to −100° F. while reflux at the top of the demethanizer is produced by indirect heat exchange with liquid ethylene evaporating at a temperature level in the range of −120° F. to −165° F.

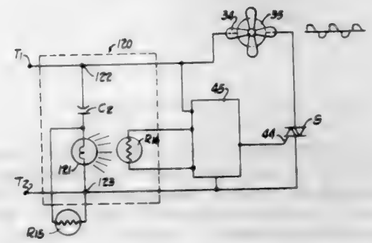
3,444,697
DISTRIBUTED HEAT EXCHANGE FRACTIONATING COLUMN
James R. Muenger, Beacon, N.Y., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware
Filed June 30, 1967, Ser. No. 650,472
Int. Cl. F25j *3/00;* **B01d** *3/00*
U.S. Cl. 62—42 **7 Claims**

A plate-type fractionating column for cryogenic service in which vertical heat exchange tube bundles, through which heat exchange fluid flows, are disposed within the upper and lower portions of the column. Vertically spaced horizontal bubble plates are pierced by the tube bundles



and each of the tube bundles is surrounded by a liner attached to the bubble plates and to the body of the column to support the plates and tube bundles therein.

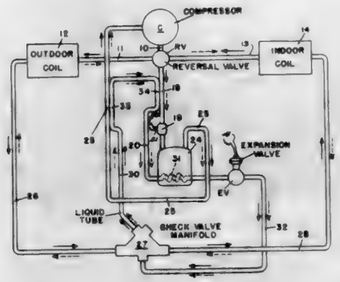
3,444,698
CONTROL APPARATUS FOR REFRIGERATED DISPLAY CASE
Jerome L. Lorenz, Columbus, Ohio, assignor to Ranco Incorporated
Filed Jan. 4, 1968, Ser. No. 695,638
Int. Cl. A47f *3/04;* **F25d** *17/04, 21/04*
U.S. Cl. 62—128 **11 Claims**



A refrigerated display case for receiving articles to be maintained at subfreezing temperatures and including a case structure defining a chamber for receiving articles to be displayed, air ducts, an air cooling heat exchanger supported by the case structure, an electrically energized blower for directing air in a circuit through the ducts and across an open side of the chamber in an air curtain, and control apparatus for maintaining a constant cooling capacity of the air in the curtain in response to sensed temperature and velocity of that air. In one disclosed embodiment the control apparatus includes a self-heated thermistor disposed in a metered flow of duct air having a variable resistance depending on the temperature and velocity of air passing thereacross, a light source connected in circuit with the thermistor for producing

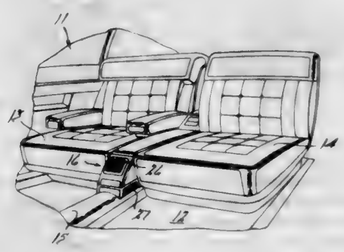
light having an intensity which varies in response to changes of temperature and velocity of the air, and a light responsive resistor adjacent the light source for producing a control signal in response to changing intensity of the light source to vary the speed of the blower accordingly.

3,444,699
REFRIGERATION SYSTEM WITH ACCUMULATOR MEANS
James R. Harnish, Staunton, Va., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 24, 1967, Ser. No. 655,417
Int. Cl. F25b *13/00, 41/04*
U.S. Cl. 62—225 **16 Claims**



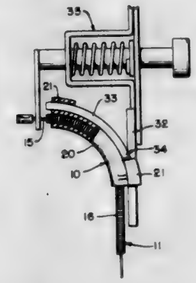
An expansion valve of a refrigeration system responds to the flow of refrigerant liquid from an evaporator towards an accumulator; opens wider on a decrease in the flow of refrigerant liquid, and closes further on an increase in the flow of refrigerant liquid. Heat exchange is provided between the high pressure liquid flowing to the expansion valve and the refrigerant flowing from the evaporator; between liquid within the accumulator and the high pressure liquid, and between the suction gas flowing from the accumlator to the compressor of the system, and the high pressure liquid.

3,444,700
AIR CONDITIONER CONSOLE
Gerald E. Beyer, Lathrup Village, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Aug. 30, 1967, Ser. No. 665,670
Int. Cl. B60h *3/04*
U.S. Cl. 62—244 **5 Claims**



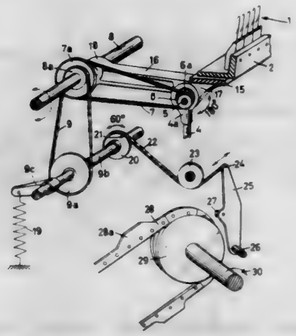
Console air conditioning unit located between laterally spaced seats of a vehicle body.

3,444,701
MOUNTING CLIP FOR FLEXIBLE SHAFTS
John E. Randolph, Palatine, Ill., assignor to Teletype Corporation, Skokie, Ill., a corporation of Delaware
Filed Mar. 14, 1967, Ser. No. 623,059
Int. Cl. F16c *1/26, 1/10;* **B05b** *15/06*
U.S. Cl. 64—3 **1 Claim**



A flexible plastic sleeve molded tightly around the guiding tube of a Bowden wire and flexible mounting members fitted around a bracket for supporting the sleeve and thereby supporting the Bowden wire.

3,444,702
STROKE CONTROL DEVICE FOR THE NEEDLE BAR MECHANISM OF A WARP KNITTING MACHINE
Karl Kohl, Offenbacher Landstr. 20, Hainstadt (Main), Germany
Filed Mar. 9, 1967, Ser. No. 621,872
Claims priority, application Germany, Mar. 10, 1966, M 68,707
Int. Cl. D04b *27/00, 23/00*
U.S. Cl. 66—86 **9 Claims**

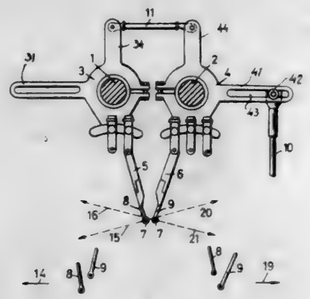


The needle bar of a warp knitting machine carries an eccentric to which the push rod of the needle bar mechanism is attached. A pattern mechanism is connected to the eccentric for turning the same in synchronization with the push rod movement, thereby permitting the effective stroke of the push rod to be shortened.

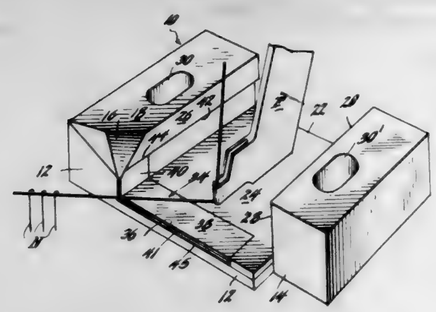
3,444,703
GUIDE BAR SWINGING MECHANISM FOR A DOUBLE NEEDLE BAR WARP KNITTING MACHINE
Karl Kohl, Offenbacher Landstr. 20, Hainstadt (Main), Germany
Filed Mar. 7, 1967, Ser. No. 621,220
Claims priority, application Germany, Apr. 10, 1966, M 68,709
Int. Cl. D04b *23/02*
U.S. Cl. 66—87 **2 Claims**

A Raschel warp knitting machine having two needle

bars and two groups of guide bars respectively mounted on two parallel guide bar rocking shafts connected for joint rocking movement.

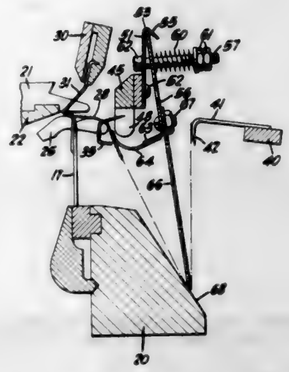


3,444,704
THROAT PLATE
Gus T. Smith, Paducah, Ky., assignor, by mesne assignments, to Marvel Specialty Company, Inc., Paducah, Ky., a corporation of Kentucky
Continuation of application Ser. No. 464,933, June 18, 1965. This application Jan. 29, 1968, Ser. No. 702,761
Int. Cl. D04b *15/54, 27/10, 35/00*
U.S. Cl. 66—125 **6 Claims**



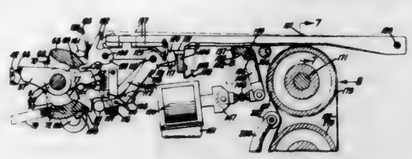
A throat plate for a circular knitting machine in which the side and base wall at one corner of the U-shaped channel in the top surface of the guide plate which receives the yarn in normal running position and thus bears substantially all of the wear of the yarn, are provided with shallow recesses and in such recesses is disposed a thin preformed inlay of wear-resistant ceramic material having a base leg and an upright leg of a configuration to fit in the recesses and to lie with their exposed surfaces extending generally continuously with the corresponding channel walls, the inlay being retained in position in such recesses to receive the wear of the year. Preferably, the insert inlay is provided with an adherent coating of a metal wettable by solder on the surfaces thereof facing the underlying recess surfaces and the insert is held in position by means of a soldered joint adhering between the metal coating and the metalic base member of the throat plate. In one embodiment, the recesses may be cut away from the wall surfaces of the throat with the ceramic inlay being configured to match substantially with the shape of such recesses. In another embodiment, the thickness of the base of the U-shaped channel in the throat plate is reduced an appropriate amount, the ceramic inlay is disposed of in the proper location, and the remainder of the channel base is built up to its normal thickness by means of a shim which is preferably held in place by spot-welding.

3,444,705
FABRIC POSITIONING MECHANISM FOR KNITTING MACHINES
Edward R. Ziemba, Reading, Mass., assignor, by mesne assignments, to North American Rockwell Corporation, Pittsburgh, Pa., a corporation of Delaware
Filed Dec. 8, 1967, Ser. No. 689,171
Int. Cl. D04b *15/04, 9/40, 27/34*
U.S. Cl. 66—148 **8 Claims**



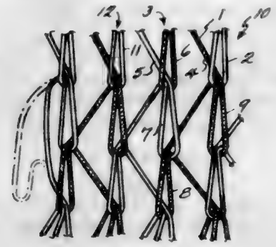
Means for positioning a preformed welt during transfer of the welt to the needles of a straight bar or full-fashioned knitting machine for attachment of the fabric draw-off means of the machine thereto.

3,444,706
PATTERN MECHANISM FOR KNITTING MACHINES
Le Roy D. Hill, West Reading, and Robert M. Sanders, Reading, Pa., assignors, by mesne assignments, to North American Rockwell Corporation, Pittsburgh, Pa., a corporation of Delaware
Filed Aug. 24, 1967, Ser. No. 663,050
Int. Cl. D04b *15/70*
U.S. Cl. 66—154 **16 Claims**



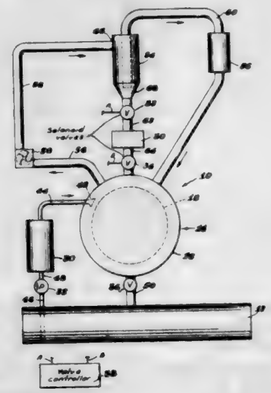
The invention disclosed herein relates to straight bar or full-fashioned knitting machines for knitting flat fabric blanks and more particularly to pattern mechanism for controlling the operation of the various operating mechanisms of the machine in knitting and fashioning cycles and for instituting predetermined counting cycles to inactivate the pattern mechanism between operations of the operating mechanisms.

3,444,707
WARP KNIT FABRIC CONTAINING LOOSE FILLING AND HAVING UNFRAYED SELVAGE
Ned K. Sharpe, Greensboro, N.C., assignor to Burlington Industries, Inc., Greensboro, N.C., a corporation of Delaware
Filed Sept. 7, 1967, Ser. No. 666,057
Int. Cl. D04b *23/10*
U.S. Cl. 66—190 **3 Claims**



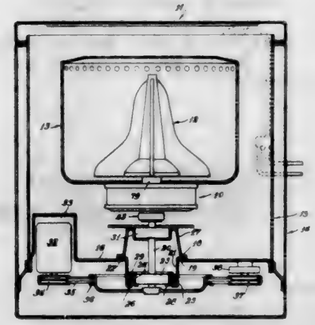
A warp knit fabric knitted through a base material forming chain stitches of two yarns, alternately forming stitches in adjacent wales. The end most chain having one yarn forming stitches alternately with the adjacent wale and another yarn forming stitches alternately in the same chain.

3,444,708
DRYCLEANING APPARATUS
Herman S. Gilbert, Angleton, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Original application Apr. 27, 1964, Ser. No. 362,899, now Patent No. 3,384,445, dated May 21, 1968. Divided and this application May 8, 1967, Ser. No. 647,581
Int. Cl. D06f *33/00, 35/00*
U.S. Cl. 68—12 **3 Claims**



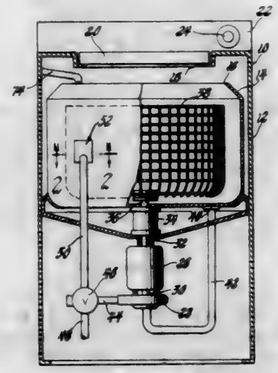
This invention relates to means for condensing the solvent vapors which are removed from a wash wheel assembly of drycleaning apparatus during the extraction part of the cleaning cycle, storing the condensed solvent vapor and then using it as a final rinse for the fabric being cleaned. Thus, the solvent used in the final rinse is free of non-volatile material when it is applied. It is essential, however, that the rinsing with distilled solvent be accomplished immediately before or during the final spin extraction and while the clothing is still saturated with solvent, but prior to the drying cycle in the machine. The rinse solvent therefore sharply reduces the amount of non-volatile material remaining in the fabric being cleaned, with the result that the cleaned fabric is both cleaner and has a better odor than if non-distilled solvent were used in the rinsing operation.

3,444,709
HYDRAULIC TRANSMISSION FOR FABRIC-TREATING MACHINES
Curtis E. Kurtz, Arlington Heights, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Aug. 21, 1967, Ser. No. 661,984
Int. Cl. D06f *37/40, 37/36*
U.S. Cl. 68—23 **22 Claims**



A transmission for operating an agitator and rotating a clothes container and having a pump comprising a pumping element and a housing therefor, the pumping element being rotatable to supply fluid to an agitator-operating hydraulic motor, and the housing being connected to the container; a brake for restraining rotation of the container by pump reaction and releasable to obtain container rotation; and valving centrifugally-operative by container rotation to control the fluid output of the pump to provide initial acceleration of the container and thereafter high speed.

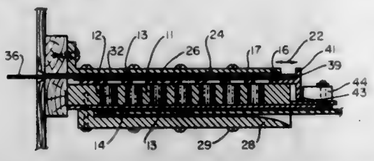
3,444,710
DOMESTIC CLOTHES WASHER WITH FLUID FLOW AGITATION
Richard S. Gaugler and Donald C. Siegla, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 9, 1967, Ser. No. 621,811
Int. Cl. D06f *17/02, 37/00, 29/00*
U.S. Cl. 68—184 **3 Claims**



In a preferred form, a domestic clothes washer including a clothes container into which fluid is surged by a cleaning fluid distributing system that includes a drain pump operative during a cleaning cycle of operation to circulate fluid from the container to a fluid amplifier that

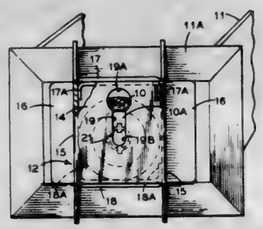
directs a pulsating jet flow into the container that serves to produce a high level of agitation within the container for removing soil from articles therein and to produce a fluid pattern within the container for continuously circulating articles through the cleaning fluid.

3,444,711
MAGNETICALLY OPERATED MECHANISM AND MAGNETIC CARD
Bruce S. Sedley, 7 Murray Ave., Larkspur, Calif. 94939
Filed Nov. 4, 1966, Ser. No. 592,006
Int. Cl. E05b *47/00, 19/26*
U.S. Cl. 70—276 **7 Claims**



A magnetically operated mechanism which includes a lock plate and magnet block mounted for relative movement with respect to one another. A plurality of locking pins in the form of magnets carried by the magnet block and in the locked position serving to lock the magnet block and lock plate so that they cannot move relative to one another. Said mechanism being unlocked by means of a card having magnetic spots at selected areas whereby to permit relative movement of the magnet block and lock plate to operate associated apparatus.

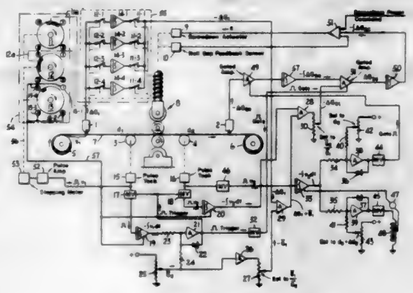
3,444,712
LOCK AND IMPROVED GUARD THEREFOR
Harry Greenwald, Whitestone, N.Y., assignor of one-third each to Louis Walf, and Harry Silberglait, Brooklyn, N.Y.
Filed Mar. 3, 1967, Ser. No. 620,333
Int. Cl. E05b *17/16*
U.S. Cl. 70—423 **1 Claim**



This invention is directed to a lock and guard therefor in which the front of the guard is spaced from the face of the lock. The front of the guard has formed therein a key-shaped opening for receiving the key to operate the lock. The shape of the opening is such as to permit only an authorized or properly shaped key to be fitted to the keyway of the lock.

3,444,713
VOLUME FLOW AUTOMATIC GAGE CONTROL
Peter J. Barnikel, New London, Conn., assignor to General Dynamics Corporation, New York, N.Y., a corporation of Delaware
Filed July 15, 1966, Ser. No. 565,526
Int. Cl. B21b *37/12*
U.S. Cl. 72—8 **15 Claims**

A control system for the output gage in a rolling mill operating in accordance with the constant volume flow principle uses the input and output speed of the material together with the actual input thickness of the material to calculate the output thickness of the material



and generate an error signal controlling the working means.

3,444,714
ADJUSTABLE PEENING TOOL
John E. Gustkey, Detroit, Mich., assignor to Cogsdill Tool Products, Inc., a corporation of Michigan
Filed Aug. 21, 1967, Ser. No. 662,023
Int. Cl. B21d *3/06, 31/00, 41/00*
U.S. Cl. 72—76 **6 Claims**

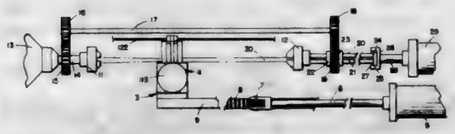


The disclosure pertains to a tool having a rotatable cage with tapered rollers supported therein and engaged by a central tapered end of a driving arbor. The tapered end has axially disposed flutes therein for moving the rollers radially outward. The arbor is longitudinally adjusted relative to the rollers so that the tapered end can change the overall diameter of the rollers.

3,444,715
TUBE TAPERING ARRANGEMENT
Leonard D. Sellars, Rolling Hills, Calif., assignor to Precision Sheet Metal, Inc., Los Angeles, Calif., a corporation of California
Continuation-in-part of application Ser. No. 332,473, Dec. 23, 1963. This application June 1, 1965, Ser. No. 465,824
Int. Cl. B21d *22/00, 7/00;* **B21c** *3/12*
U.S. Cl. 72—84 **22 Claims**

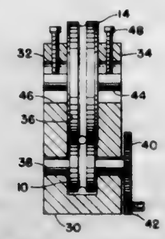
A tube tapering arrangement in which a tube is gripped at spaced locations and held under tension while being simultaneously rotated. The tube is extended through a

group of annular members which are displaced to constrict the tube and vary the contour thereof. The annular members are displaced both laterally and angularly, and



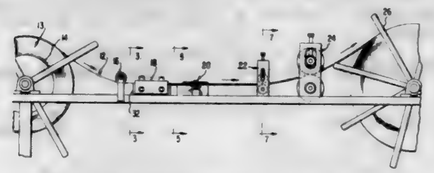
may be displaced in increasingly greater amounts from one end of the group of annular members to the other for progressively decreasing the size of the effective opening through which the tube extends.

3,444,716
DEVICE FOR BENDING, COILING, OR STRAIGHTENING TUBING
John R. Martin, Allen Park, Mich., assignor to Calumet & Hecla, Inc., Allen Park, Mich., a corporation of Michigan
Filed June 13, 1966, Ser. No. 557,002
Int. Cl. B21f *3/02*
U.S. Cl. 72—135 **9 Claims**



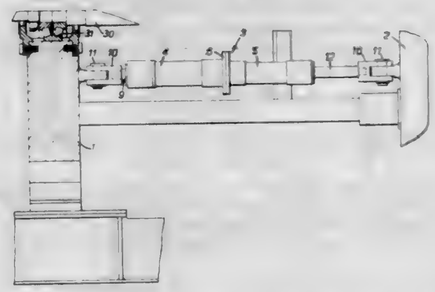
The device comprises a rigid grooved roll associated with a second roll at least the periphery of which is formed of yieldable resilient material. Preferably, the yieldable resilient material is a ring received in a peripheral channel formed in a rigid circular support body. The rolls are adjustable towards and away from each other to vary the amount of curvature imparted to or removed from tubing.

3,444,717
STRIP METAL DEFORMING APPARATUS
William T. Saunders, Weirton, W. Va., assignor to National Steel Corporation, a corporation of Delaware
Filed Apr. 18, 1967, Ser. No. 631,808
Int. Cl. B21d *19/04, 39/02*
U.S. Cl. 72—177 **7 Claims**



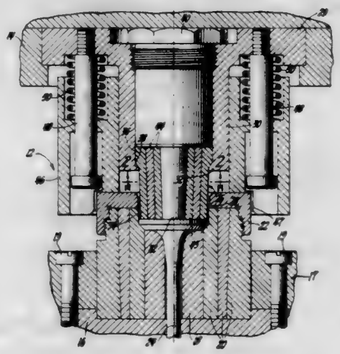
Strip metal deforming apparatus in which one edge portion of flat strip is progressively deformed over an edge, further deformed in a direction toward the remaining body of the strip, and pressed tightly against the remaining body of the strip, is particularly useful in prefolding container strip edging having coated surfaces and at least one uncoated slit edge, so that the uncoated edge is protected by a coated surface from attack by contents of the container.

3,444,718
MANIPULATORS
Dennis Stubbs, Yorkshire, England, assignor to Davy and United Engineering Company Limited, Yorkshire, England
Filed Jan. 3, 1967, Ser. No. 606,782
Claims priority, application Great Britain, Jan. 3, 1966, 124/66
Int. Cl. B21d *43/00;* **B21j** *9/18*
U.S. Cl. 72—419 **6 Claims**



A single acting piston and cylinder assembly is connected between the peel and manipulator carriage of a manipulator and has members, comprising two cylinders and a piston movable in each cylinder, two of which are adapted to move as a single unit and to float in relation to the remaining two members. One of these remaining two is connected to the peel and the other to the carriage for movement therewith. The assembly is arranged for returning the peel to a datum position relative to the carriage after relative movement, in either direction of forging, that is parallel to the axis of the piston and cylinder assembly. Preferably the cylinders are arranged in end-to-end relationship with a common inner wall.

3,444,719
PUNCH CONSTRUCTION
Guenter W. Roehrs, Rochester, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 19, 1966, Ser. No. 521,627
Int. Cl. B21j *13/00;* **B21c** *3/16;* **B21d** *22/00*
U.S. Cl. 72—462 **4 Claims**



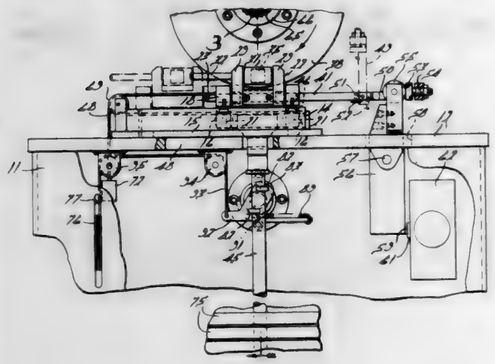
A punch for deforming metal in which the active portion of the punch is made up of a plurality of filler elements. The punch construction improves fatigue life and reduces maintenance.

3,444,720

BRAKE LINING TESTING DEVICE

Herbert W. Link, 8330 Sorrento, Detroit, Mich. 48228

Filed Dec. 6, 1966, Ser. No. 599,606
Int. Cl. G01n 3/56
U.S. Cl. 73—9 11 Claims



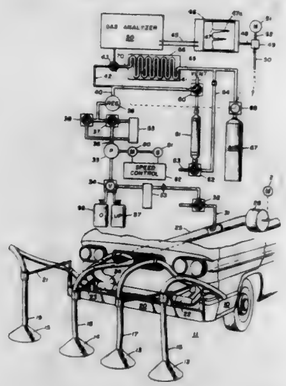
A brake lining testing device applies pressures to two oppositely disposed test specimens located on opposite sides of a rotatable brake-like disk for testing the friction and wear on the specimens. Weights urge the test specimens into contact with the rotatable disk. As the disk is rotated, the specimens tend to rotate. This movement exerts pressure on a pressure transducer, and the pressure is recorded. A heating system is provided which permits tests to be made at different temperatures.

3,444,721

MOBILE GAS LEAK DETECTION

Daniel P. Hearn and David D. Stedman, Tulsa, Okla., assignors to Century Geophysical Corporation, Tulsa, Okla., a corporation of Delaware

Filed May 2, 1963, Ser. No. 277,604
Int. Cl. G01n 31/00
U.S. Cl. 73—23 5 Claims



1. In a gas leak detector the combination which comprises:

(a) a vehicle for moving along a surface to be surveyed,

(b) a gas search array supported from said vehicle near the earth's surface including a plurality of funnels interconnected by a duct network,

(c) large duct means including a suction fan for directing gas from said network through said duct,

(d) a small conduit having one end opening into the stream in said duct for diverting a fraction of the flow from said duct to said conduit,

(e) a high impedance hydrogen flame detector cell,

(f) a pressurizing pump for receiving gas from said conduit,

(g) gas transmission means including a pressure regulator connecting said pump to said cell,

(h) a recorder having means for receiving and driving a recording chart past a recording point, and

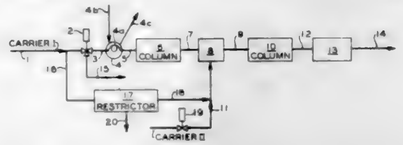
(i) humidity and temperature regulated means for connecting said cell to said recorder to record as a dependent variable variations in the character of gas in said conduit.

3,444,722

DEVICE FOR SUPPLYING CARRIER GAS TO TRANSPORT ELUTED PORTION OF SAMPLE AND TO BACKFLUSH CHROMATOGRAPHIC COLUMN

Lewis B. Roof, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Sept. 9, 1966, Ser. No. 578,387
Int. Cl. G01n 31/08
U.S. Cl. 73—23.1 7 Claims



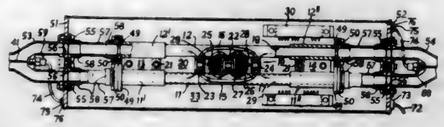
A fluid flow blending device is connected between the outlet of a first chromatographic column and a second column or a detector. The device comprises a chamber into which extends a first inner nozzle connected to the first column outlet, the exhaust end of the first nozzle having a smaller diameter than the first column outlet or the outlet of the device. A source of carrier gas is connected to the chamber. A second inner nozzle having an exhaust end diameter smaller than the first column outlet or the outlet of the device can be employed to introduce the carrier gas into the chamber. Upon the cessation of flow of eluting carrier gas forwardly through the first column, the carrier gas from said source flows through said device to continue the transporting of the eluted portion of the sample and to backflush the first column.

3,444,723

FLUID DENSITY METERS

Donald Keith Wakefield, Farnborough, England, assignor to The Solartron Electronic Group Ltd., Farnborough, Hampshire, England, a corporation of the United Kingdom

Filed Dec. 20, 1966, Ser. No. 603,329
Claims priority, application Great Britain, Dec. 29, 1965, 55,112/65
Int. Cl. G01n 9/00
U.S. Cl. 73—32 21 Claims



A continuous-flow liquid densitometer having two parallel tubes secured together at their ends. Natural transverse vibrations of respective matched central portions of

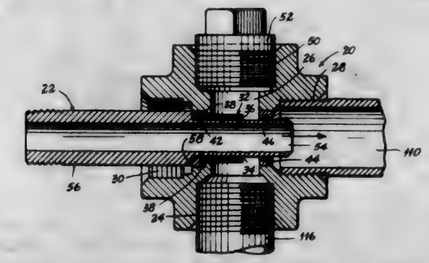
the tubes are electrically maintained in anti-phase and the density of a liquid flowing through the tubes is determined by the frequency of the signals in the electric maintaining means.

3,444,724

PROBE APPARATUS FOR CHANGING GAS METERS

William V. Gilpin, Albuquerque, N. Mex., assignor to Universal Controls Corporation, Dallas, Tex., a corporation of Texas

Continuation-in-part of application Ser. No. 498,357, Oct. 20, 1965. This application Jan. 18, 1967, Ser. No. 610,188
Int. Cl. G01m 3/08
U.S. Cl. 73—40.5 4 Claims



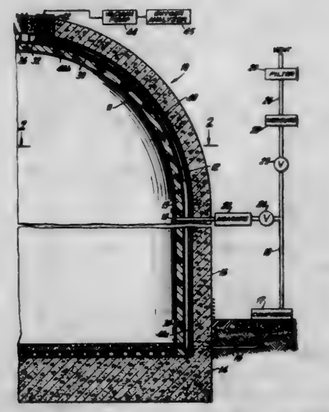
A fitting having a slitted normally closed resilient valve adapted to be used with a tube probe valve member inserted in the resilient valve means for use in bypassing gas meters that are to be tested or taken out of service. The tube probe may be used with various testing devices for testing the gas line for leaks or for interrupting the gas supply and providing auxiliary gas supplies to the domestic line as desired. The fitting may further be provided with a solid tube probe inserted in the resilient valve means to shut off the flow through the fitting with the provision of unique handle means for inserting the solid probe which cannot be readily counterfeited to avoid tampering.

3,444,725

LEAK DETECTING AND LOCATING SYSTEM FOR NUCLEAR REACTOR CONTAINMENT VESSELS

Charles T. Chave, Wellesley, Mass., assignor to Stone & Webster Engineering Corporation, Boston, Mass., a corporation of Massachusetts

Filed Apr. 6, 1967, Ser. No. 628,918
Int. Cl. G01m 3/04
U.S. Cl. 73—40.7 4 Claims



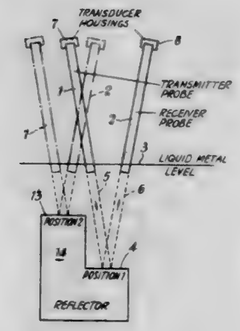
A system for detecting and locating the area of leakage in nuclear reactor dual containment structures which utilizes groups of conduits of varying lengths placed adjacent the inner surface of the outer containment shell and uniformly distributed over the entire area of the inner periphery of the shell. All of the conduits terminate at the apex of the containment structure so as to be accessible from outside the containment structure. The annular space between the containment shells is purged of air with an inert gas and the conduits are individually connected to a vacuum pump with the gas exhausted from each of the conduits passed through an oxygen analyzer. The detection of oxygen in any of the exhausted gas signals a leak in the outer containment shell and the conduit from which the oxygen is detected locates the area in which the leakage is occurring.

3,444,726

METHODS OF AND APPARATUS FOR TESTING MOLTEN METAL

Reginald S. Young, Denham, Uxbridge, and David Edward Pitcher, Lowton, near Warrington, England, assignors to The British Aluminium Company Limited, London, England, a company of Great Britain

Filed Jan. 5, 1966, Ser. No. 518,950
Claims priority, application Great Britain, Jan. 6, 1965, 579/65
Int. Cl. G01n 11/00
U.S. Cl. 73—61 31 Claims



An apparatus for determining the contamination of molten metal by solid particles. An acoustic reflector having two spaced reflecting surfaces is submerged in the molten metal and acoustic pulses are transmitted to and received from the reflecting surfaces and the received energy is compared.

3,444,727

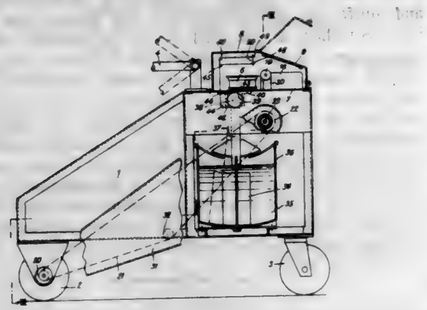
METHOD AND APPARATUS FOR DETERMINING THE COMPACTNESS OF THE SURFACE OVER WHICH A VEHICLE TRAVELS

Jean Sylvain Bourdin, Nantes, Loire (Atlantique), and Pierre Ernest Mayet, Orvault, Loire (Atlantique), France, assignors to Societe Anonyme: Entreprise Bourdin & Chausse, Nantes-Saint-Joseph, Loire (Atlantique), France

Filed June 1, 1966, Ser. No. 554,377
Claims priority, application France, June 4, 1965, 19,574
Int. Cl. G01n 3/00
U.S. Cl. 73—78 6 Claims

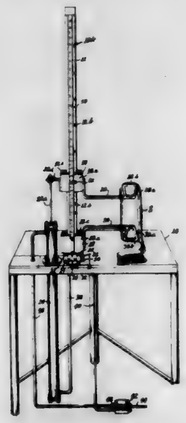
A vehicle such as an earth roller gives an indication

of the power torque which is required for propelling the vehicle over the surface on which it travels, as an inverse



indication of the compaction of this surface. A correction factor for the inclination of the surface is also provided.

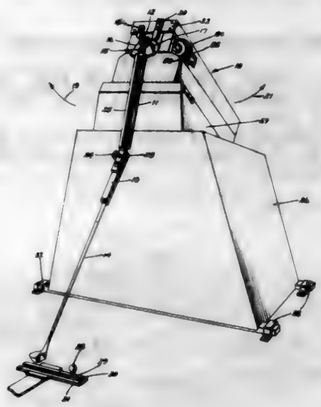
3,444,728
DEVICE FOR TESTING THE STRETCH OF FABRIC SAMPLES
Charles W. Burns, % Hickory Foundry & Machine Co., P.O. Box 724, Hickory, N.C. 28601
Filed Feb. 14, 1967, Ser. No. 616,120
Int. Cl. G01n *3/28*
U.S. Cl. 73—97 **14 Claims**



A device for testing the stretch of fabric samples with a pair of independently movable members, one of which is positively moved to stretch a sample between the members and through the connection of the stretched sample to move the other member, which other member imposes a known stretching load on the sample. Movement of the load imposing member initiates a response that automatically stops the members in their sample stretching positions to allow measurement of the stretched extent of the sample.

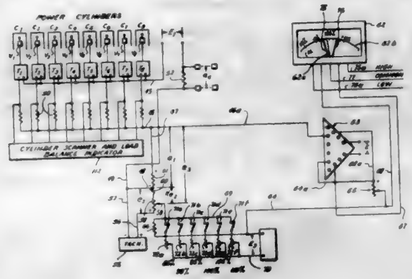
3,444,729
GOLF CLUB SWINGING APPARATUS
Samuel M. Shobert, 16050 Ireland Road, Mishawaka, Ind. 46544
Filed Oct. 21, 1966, Ser. No. 588,551
Int. Cl. G01n *3/20*
U.S. Cl. 73—100 **9 Claims**

A golf-club swinging apparatus comprising a frame, a shaft journaled in the frame, a helical spring coaxially coiled about the shaft, one end of the spring being connected to the shaft. A motor is connected to the spring in such a way as to turn it in a winding direction so as to store energy therein. Means are provided for releasably latching the shaft against rotation by the force of the spring when it is wound. An arm is connected to the shaft and is provided with means for securing the grip end of a



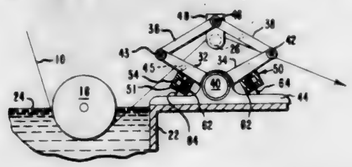
golf club. A braking device is attached to the shaft in such a way as to retard the movement thereof during the follow-through portion of the golf swing in a manner which simulates the retarding motion by a golfer through the same portion of his swing.

3,444,730
METHOD AND APPARATUS FOR INDICATING AND CONTROLLING THE TORQUE ON AN INTERNAL COMBUSTION ENGINE
Joseph C. Bysarovich, Houston, Tex., assignor to Dresser Industries, Inc., Dallas, Tex.
Continuation of application Ser. No. 415,536, Dec. 2, 1964. This application Oct. 12, 1967, Ser. No. 675,002
Int. Cl. G01m *15/00*
U.S. Cl. 73—115 **16 Claims**



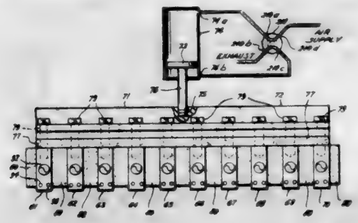
The apparatus includes elongated conduits connected to each engine power cylinder, each defining a chamber connected to the cylinder through a flow restricting device. The flow restricting device levels out the substantial pressure changes within the cylinder to produce a relatively level pressure within the associated conduit chamber which is related to the mean time pressure of the cylinder. Transducers communicating with each chamber produce individual electrical signals related to the mean time pressure of each cylinder which may be individually monitored. These signals are combined to produce an electric signal related to the mean time pressure of the engine. An electric signal responsive to engine speed is produced by means of a tachometer generator. The mean time pressure signal and the speed signal are combined electrically to produce a signal which is related to the mean effective pressure, and therefore the torque, of the engine. The torque signal is fed to a meter relay which, in conjunction with a stepping circuit, varies the load on the engine driving a compressor by serially opening or closing cylinder clearance pockets.

3,444,731
TENSION RESOLVER
Gerrit Nieuweboer, Claymont, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Jan. 31, 1967, Ser. No. 612,921
Int. Cl. G01l *5/12*
U.S. Cl. 73—144 **8 Claims**



A device for simultaneously measuring the tension in a moving threadline before and after it passes over a direction changing pin. The pin is supported by a resilient closed linkage which resolves the tension induced force on the pin into two components which are transduced to corresponding electrical outputs by transducers attached to adjacent links of the linkage. A meter arrangement actuated by the electrical outputs indicates the tension.

3,444,732
METHOD AND APPARATUS FOR DETERMINING OPTIMUM BONDING PARAMETERS FOR THERMOPLASTIC MATERIAL
Albert L. Robbins, Rte. 2, Box 573, Alvin, Tex. 77511, and Horace F. McKinley, Houston, Tex.; said McKinley assignor to said Robbins
Filed June 6, 1967, Ser. No. 643,989
Int. Cl. G01b *19/08*
U.S. Cl. 73—150 **19 Claims**



A testing device is provided having a linear array of selectively differently heated welding members for pressing against one or more sheets of plastic material at a preselected pressure and time for bonding the material together under preselected different bonding parameters, by which the optimum bonding parameters may be empirically determined.

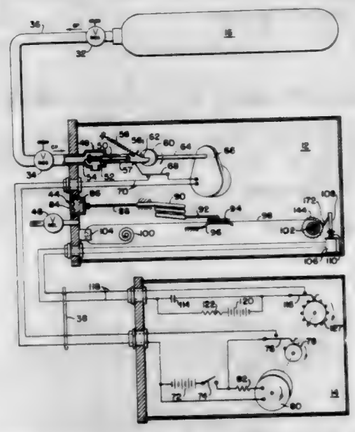
3,444,733
ARTILLERY SIMULATOR
Herbert D. Curchack, Rockville, Md., assignor to the United States of America as represented by the Secretary of the Army
Filed Oct. 7, 1966, Ser. No. 586,332
Int. Cl. G01l *5/14*
U.S. Cl. 73—167 **6 Claims**

Artillery simulator apparatus to subject projectiles containing components to be tested to linear and angular accelerations. The projectile is accelerated to a desired linear velocity and entrapped by a rotating tube, which imparts to the projectile the desired angular velocity. The linear momentum of the projectile is transferred to a large mass within the tube through a wooden column, and measure-



ment of the velocity of the large mass from the tube allows computation of the deceleration forces on the projectile. Electrical read-out from the components within the projectile can be obtained by means of the novel construction of the rotating tube.

3,444,734
DEEP WATER TIDE RECORDER
Edward C. Brainard II, Marion, Mass., assignor to Braincon Corporation, Marion, Mass., a corporation of Massachusetts
Filed Nov. 3, 1966, Ser. No. 591,813
Int. Cl. G01w *1/00*
U.S. Cl. 73—170 **8 Claims**

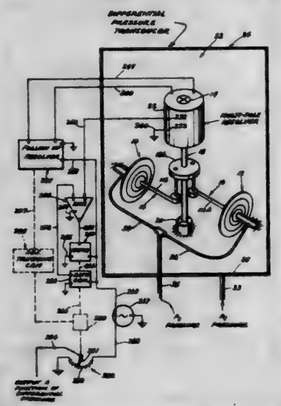


An environmental pressure measuring and recording device which includes a means for producing a reference pressure and a differential pressure indicator which responds to the environmental and reference pressure.

3,444,735
FLUID PRESSURE SENSING MECHANISM OPERATIVELY ARRANGED TO COMPENSATE FOR CHANGING ENVIRONMENTAL CONDITIONS
Fred P. Modrowsky, Union, and Edward J. Moore, Paterson, N.J., assignor to The Bendix Corporation, a corporation of Delaware
Filed July 12, 1966, Ser. No. 564,571
Int. Cl. G01c *21/00*
U.S. Cl. 73—182 **15 Claims**

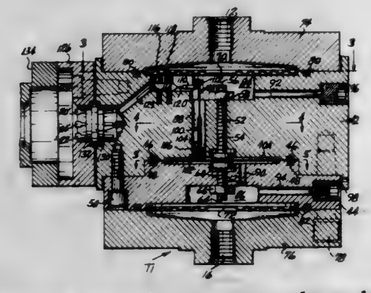
A fluid pressure sensing mechanism including a pair of oppositely disposed diaphragm members to impart a limited angular movement to a pivotally mounted control member operatively connected thereto by a simplified connecting means including eccentrically mounted rollers and tape linkages mounted on the eccentric rollers, the rollers being carried by pins projecting from the diaphragm members and the control members, and the pins being of a bimetallic material so arranged as to effectively compensate in the connecting means for changes in the range setting of the mechanism due to variations in the

prevailing ambient temperature. There is further provided an electric motor, and a signal generator to control the motor, including a first electrical control means operable by the pivotally mounted control member and



a second electrical control means operable by an output shaft of the motor so as to effect an electromechanical amplification of the limited angular movement imparted to the control member.

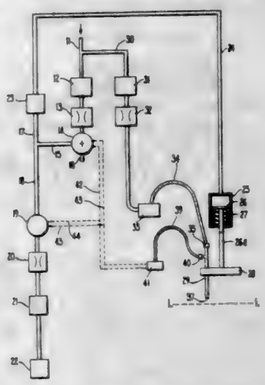
3,444,736
SQUARE ROOT RESPONSIVE PRESSURE TRANSDUCERS
Cecil K. Stedman, Enumclaw, Wash., assignor to Statham Instruments, Inc., Los Angeles, Calif., a corporation of California
Filed July 22, 1966, Ser. No. 567,291
Int. Cl. G01f 1/00
U.S. Cl. 73—205 15 Claims



Square root responsive pressure transducers developing a signal output proportional to the square root of the applied pressure differential, and combinations thereof with a venturi tube, pitot tube or the like, wherein the signal output provides a linear indication of the fluid flow rate through or past the tube. Accurate flow rate indication over a wide range (e.g. from 3 to at least 30 p.s.i.d) is achieved.

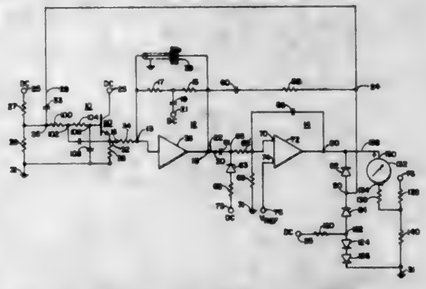
3,444,737
LIQUID LEVEL INDICATING DEVICE
John James Jago, Liverpool, England, assignor to Pilkington Brothers Limited, Liverpool, England, a corporation of Great Britain
Filed Nov. 24, 1967, Ser. No. 685,524
Claims priority, application Great Britain, Nov. 25, 1960, 52,988/66
Int. Cl. G01f 23/00
U.S. Cl. 73—290 11 Claims

A liquid level indicator is operated by gas pressure variations at the outlet from a hollow probe directed towards the liquid, the probe being connected with the indicator through a device which is responsive to gas pressure at the outlet in excess of a predetermined maximum value occurring when the outlet is at least partly closed



by the liquid, and the outlet is so shaped and dimensioned as to be progressively closed on entry into the liquid and to ensure that when it is above the liquid it is not restricted solely by surface tension of residual liquid.

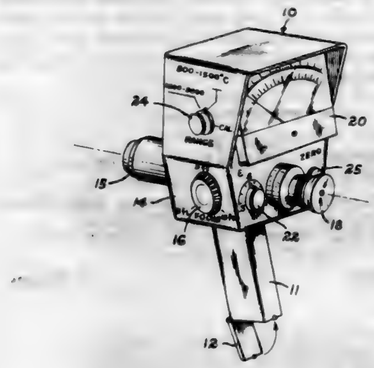
3,444,738
SELF-OSCILLATING IMPEDANCE MEASURING LOOP
Orrin H. Grangaard, Jr., St. Paul, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Aug. 25, 1967, Ser. No. 663,298
Int. Cl. G01f 3/00
U.S. Cl. 73—304 11 Claims



A completely electronic liquid level measuring apparatus comprising a frequency selective network, an integrator circuit, and a variable gain amplifying circuit arranged in a series loop. The loop circuit is designed to oscillate. A capacitor in the integrating circuit senses changes in liquid level which tends to change the loop gain and therefore the amplitude of the oscillations, but the amplifying circuit has a variable gain characteristic which keeps the amplitude of the oscillations constant and develops a D-C voltage which is proportional to the liquid level.

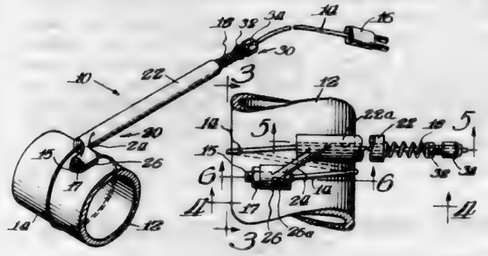
3,444,739
RADIANT ENERGY MEASURING INSTRUMENT
Richard W. Treharne, Xenia, Ohio, assignor, by mesne assignments, to Kettering Scientific Research, Inc., a corporation of Delaware
Filed Dec. 22, 1965, Ser. No. 515,601
Int. Cl. G01k 13/00
U.S. Cl. 73—355 4 Claims

A portable radiometer and radiation pyrometer using an AC bridge circuit with very low frequency AC across the bridge so that the system is relatively insensitive to changes in capacitance thereby providing high stability. When used as a pyrometer, a focus adjustment modifies



the sensitivity of the instrument in accordance with range, and an emissivity adjustment is provided for compensating for emissivities of an object less than unity.

3,444,740
APPARATUS AND METHOD FOR MEASURING TEMPERATURE
Bayard C. Davis, 425 S. Grace, Lombard, Ill. 60148
Filed Apr. 18, 1967, Ser. No. 631,633
Int. Cl. G01k 5/18
U.S. Cl. 73—359 4 Claims

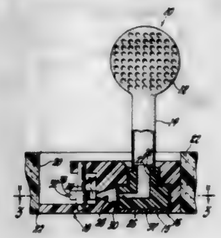


A thermoelectric transducer for measuring the greatest temperature along a line on a surface, such as the circumference of a pipe or tank. The thermoelectric transducer, comprising a pair of conductors surrounded by a mass of semiconductive material, a layer of metallic oxide insulating material and an outer metallic sheath, is wrapped about the tank or pipe and is maintained in intimate contact therewith by a spring-loaded holding device. The thermoelectric voltage measured at the cold junction of the transducer corresponds to the greatest temperature in the circumferential surface segment of the pipe or tank about which the transducer is wrapped.

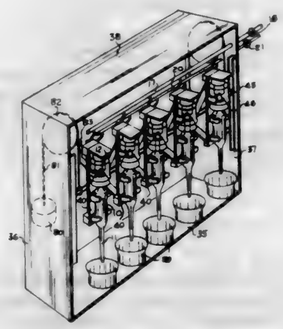
3,444,741
ART OF GOLF TRAINING
Melvin E. Burcz, 11303 Alger, Warren, Mich. 48093
Filed Oct. 16, 1967, Ser. No. 675,652
Int. Cl. G01l 5/02
U.S. Cl. 73—379 12 Claims

My invention discloses improvements in the art of golf training comprising means for gaging the results of practice golf swings to improve one's golf game by which

means an air filled formed rubber bag open to atmosphere is struck with the face of a golf club in the course of a practice golf swing. The onrush of air out of said bag upon collapse thereof by such impact is utilitized to move an object from a point of reference so that force of impact of said club face with said bag and hence the distance drive in said golf swing can be gaged by such movement of said object. Rotational movement of said bag from a point of reference is provided for in the event it is obliquely struck by said club face so that the obliquity of impact of said club face with said bag and hence the amount of hook or slice in said golf swing can be gaged by such rotational movement of said bag. Provision is made so that rotational movement of said bag during impact adversely affects movement of said object whereby the distance drive in said golf swing is gaged to be less by the amount of hook or slice therein. The loft on the club face also adversely affects movement of said object whereby the distance drive in said golf swing is also gaged to be less by the amount of such loft.

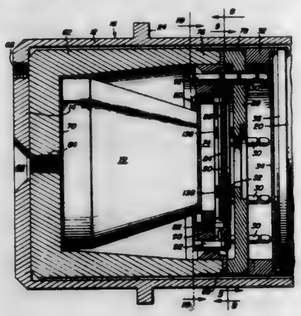


3,444,742
MULTIPLE-UNIT PIPETTING ASSEMBLY AND PIPETTE FOR USE THEREIN
John H. Ellis, Georgetown, and Valva C. Midkiff, Lexington, Ky., assignors, by mesne assignments, to The University of Kentucky Research Foundation, Lexington, Ky., a corporation of Kentucky
Filed Dec. 6, 1965, Ser. No. 511,830
Int. Cl. G01n 1/14
U.S. Cl. 73—425.6 3 Claims



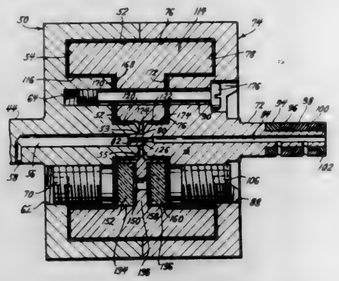
A frame supported pipette includes a cap member having suction and pressure conduits leading thereto and having a magnetically controlled valve for permitting filling and emptying of the pipette; a battery of pipettes adjustable for use with different lateral spacings between the respective pipettes is disclosed.

3,444,743
LINEAR SERVO ACCELEROMETER HAVING A POST SUSPENSION SYSTEM
Walter P. Kistler and Vernon H. Siegel, Clarence, N.Y., assignors, by mesne assignments, to Kistler Instrument Corporation, a corporation of Delaware
Continuation-in-part of application Ser. No. 497,377, Oct. 18, 1965. This application Feb. 15, 1966, Ser. No. 527,560
Int. Cl. G01p 15/08
U.S. Cl. 73—517 22 Claims



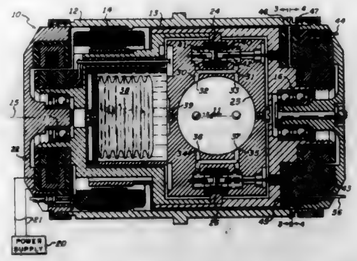
Disclosed is a linear response force balance or servo-type accelerometer in which the force of acceleration applied to a seismic mass or inertial element is counterbalanced by an electromagnetic force acting on the seismic mass. The seismic mass includes a forcer coil located in the field of a permanent magnet through which a current is passed to generate a counterbalancing force. A capacitive pickoff senses coil movement. The coil is impregnated with resin and supported by tangential wires. Movable and stationary rigid posts form, with the wires, three parallelograms to provide more nearly true rotational and translational movement of the seismic mass along the sensitive axis of the accelerometer.

3,444,744
GYROSCOPIC APPARATUS
Allan W. Lindberg, 460 N. Taylor Ave., Kirkwood, Mo. 63122
Filed Aug. 4, 1965, Ser. No. 477,100
Int. Cl. G01c 19/08
U.S. Cl. 74—5 8 Claims



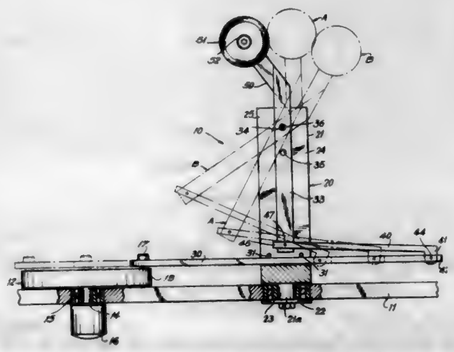
A gyroscope includes an outer rotor with an annular recess therein that is elongated adjacent the periphery thereof and that is substantially shorter intermediate that periphery and the center thereof, includes an inner rotor that is disposed within the annular recess in the outer rotor and that has an elongated peripheral portion that is disposed within and that substantially fills the elongated portion of the annular recess in the outer rotor and also has a substantially shorter portion that is disposed within and that substantially fills the substantially shorter intermediate portion of the annular recess in the outer rotor, includes substantially incompressible sensing elements which are close to the center of the inner rotor and which are compressed between substantially incompressible and substantially inflexible confronting portions of the inner and outer rotors, and includes a connection between the inner and outer rotors which enables the inner rotor to vary the compressive forces on the sensing elements as the outer rotor is rotated about an axis which is annularly displaced from the spin axis of the gyroscope.

3,444,745
GYROSCOPIC APPARATUS UTILIZING INTEGRAL MODULATOR DEVICE
Willis G. Wing, Glen Head, N.Y., assignor to Sperry Rand Corporation, a corporation of Delaware
Filed Mar. 28, 1966, Ser. No. 538,039
Int. Cl. G01c 19/28
U.S. Cl. 74—5.6 10 Claims



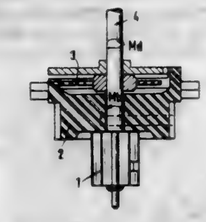
In inertial apparatus, pickoff means having a plurality of portions rotating with the rotor portion of the inertial apparatus, each portion being energized by carrier signals having a phase associated with the position of the respective portion for providing a modulated single-sideband pickoff signal. Single-sideband reference signal generating means having a like plurality of capacitive rotor portions rotating with the rotor portion of the inertial apparatus and energized by like phases of the carrier signals cooperative with a capacitive stator portion for providing a single-sideband reference signal compatible with the pickoff signal for simplified demodulation.

3,444,746
THREE DIMENSIONAL MOTION-PRODUCING MECHANISM
Eugene I. Egid, 1 Short St., Dumont, N.J. 07628
Filed Apr. 21, 1967, Ser. No. 632,702
Int. Cl. F16h 21/42
U.S. Cl. 74—42 8 Claims



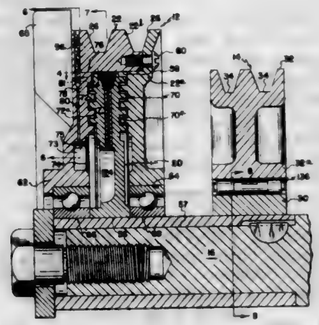
An eccentric drive and a pivoted guide wtih a connecting rod linked between the drive and guide to rotatively oscillate the latter, and a lever pivoted to the guide and connected by a linkage to the connecting rod for transmitting motion from the latter to the lever, giving in effect a three dimensional in-line motion, resembling a figure "8" or rhomboidal outline, oscillating on a spherical path.

3,444,747
CONTINUOUS SWITCHING DEVICES
Kurt von Zeppelin and Friedrich Fritzof Assmus, Schramberg, Wurttemberg, and Robert Wolber, Lauterbach, Wurttemberg, Germany, assignors to Gebruder Junghans Gesellschaft mit beschrankter Haftung, Schramberg, Wurttemberg, Germany, a corporation of Germany
Filed Sept. 12, 1966, Ser. No. 578,873
Claims priority, application Germany, Sept. 27, 1965, J 14,256; June 30, 1966, J 31,216
Int. Cl. F16h 29/02
U.S. Cl. 74—88 9 Claims



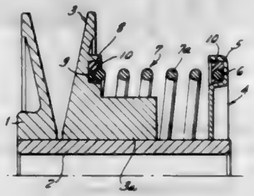
A control mechanism for precision apparatus with an oscillating switch element to drive a rotating shaft and having an elastic coupling element on the shaft to be switched into the power field between the switch element and the rotating shaft. The precision apparatus is particularly adapted for time-keeping devices.

3,444,748
DRIVE MECHANISM
Alex Sutaruk, Hazel Park, Mich., assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio
Filed Feb. 1, 1967, Ser. No. 613,170
Int. Cl. F16h 11/02
U.S. Cl. 74—217 17 Claims



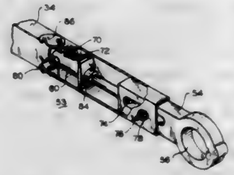
This application discloses a drive for automotive engine accessories and which drive includes a viscous shear fluid coupling for driving the accessories at a high drive ratio from the engine crankshaft at low engine speeds and an overrunning clutch for driving the accessories at a low drive ratio at high engine speeds. The viscous shear coupling includes elements which effect evacuation of the fluid shear chamber at a predetermined speed at which the overrunning clutch is actuated.

3,444,749
VARIABLE PITCH SHEAVE AND HELICAL SPRING STRUCTURE
Robert Ruprecht, Aichelberg, Kreis Esslingen, and Erich Schaftner, Stuttgart-Zuffenhausen, Germany, assignors to Ernst Heinkel Aktiengesellschaft, Stuttgart-Zuffenhausen, Germany
Filed Feb. 21, 1967, Ser. No. 617,604
Claims priority, application Germany, Feb. 24, 1966, H 58,638
Int. Cl. F16h 55/56
U.S. Cl. 74—230.17 11 Claims



A helical compression spring with ring-shaped end portions which include the end convolutions of the metallic part of the spring and ring-shaped fillers of hardened synthetic plastic material. The end portions may be provided with axially and/or radially extending projections serving to transmit torque to the spring or to the parts between which the spring is installed to take up or transmit axial stresses during rotation about its axis.

3,444,750
ADJUSTOR MECHANISM
Howard E. Stuller, Lubbock, Tex., assignor to Clark Equipment Company, a corporation of Michigan
Filed Oct. 18, 1967, Ser. No. 676,300
Int. Cl. F16h 7/10; F15b 15/26
U.S. Cl. 74—242.14 2 Claims

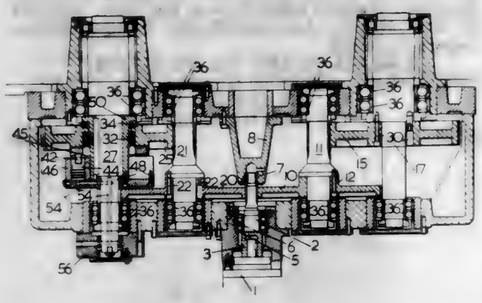


An adjustor mechanism for an endless chain or belt mechanism having a hollow frame member housing a tubular member, a movable ram in the tubular member, an expandible chamber which upon expansion extends the ram, and means for introducing fluid under pressure into the chamber to extend the ram and push a slidable member outwardly of the hollow frame member.

3,444,751
PARALLEL GEAR TRAINS WITH MEANS FOR ELIMINATING BACKLASH
Richard Samuel Jonathan Good, Mountsorrel, England, assignor to Marwin Machine Tools Limited, Anstey, England
Filed Sept. 1, 1967, Ser. No. 665,084
Claims priority, application Great Britain, Sept. 6, 1966, 39,832/66
Int. Cl. F16h 1/28
U.S. Cl. 74—409 3 Claims

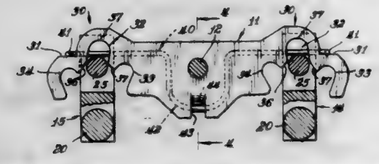
A gear box incorporating a pair of parallel gear trains operable by a common drive shaft, the remote gear of one gear train being fixed upon a first output shaft while

the remote gear of the second gear train is mounted for rotation about a second output shaft, and hydraulically operable means fixed on said second output shaft and



being adapted for engaging said remote gear of said second gear train for eliminating backlash or slack within the gear box.

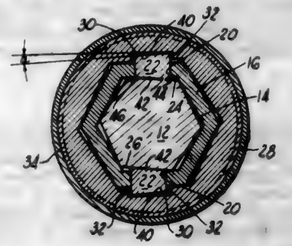
3,444,752
TRANSMISSION SHIFT CONTROL MECHANISM
Jack M. Fisher and Carl J. Conkle, Muncie, Ind., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Mar. 30, 1967, Ser. No. 627,132
Int. Cl. G05g *5/10*
U.S. Cl. 74—477 **7 Claims**



A combined interlock and detent mechanism for a pair of transmission shift controls. The interlock and detent mechanism comprises a single flat plate type lever having recesses and cam surfaces on either end thereof. Each end includes a recess for the neutral position of the shift control and a recess for the ratio positions of the shift control such that when one of the shift controls is moved to a ratio position the cam mechanism is operated to pivot the lever and engage the other shift control within the neutral recess to an extent that said other shift control is positively held in the neutral positions.

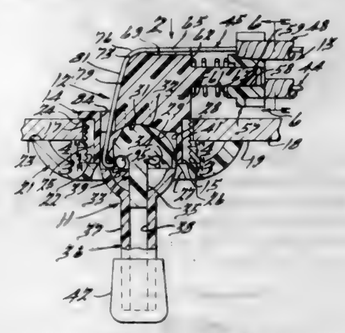
3,444,753
NO-LASH AXIALLY MOVABLE STEERING COLUMN
Dean E. Runkle, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware
Filed Dec. 14, 1967, Ser. No. 690,612
Int. Cl. B62d *1/18*
U.S. Cl. 74—493 **14 Claims**

A steering column arrangement having telescoping shafts, the inner of which has a polygonal shape and the outer of which has a corresponding polygonal bore for receiving the first shaft. A mechanism for eliminating lost motion or "lash" between the two shafts includes a slot located in the outer shaft, a wedge block of corresponding shape located in the slot which abuts a polygonal surface of the inner shaft at an off-center location, a collar telescoped over the inner and outer shafts and having an inclined ramp on the inner surface thereof for loading and causing inward movement of the wedge block against the inner shaft upon axial movement of the collar relative to the outer shaft, and a nut operatively connected to the collar and outer shaft so that rotation of the nut will cause axial movement of the collar relative to the outer



shaft to thereby vary the load exerted by the wedge block against the inner shaft.

3,444,754
REMOTE CONTROLLED MOTION TRANSMITTING DEVICE
Douglas D. Liedel, Belleville, Mich., assignor to C. M. Hall Lamp Company, a corporation of Michigan
Filed Apr. 7, 1967, Ser. No. 629,150
Int. Cl. F16c *1/18*
U.S. Cl. 74—501 **10 Claims**



A remote controlled device and particularly a control actuator for a remote controlled automotive rear view mirror. The control actuator comprises a combined supporting and guide member that supports a control lever for universal pivotal movement. In addition, the guide member provides arcuate surfaces across which wire actuators extend for establishing an angular relationship between portions of the wire actuators. One end of each of the wire actuators is connected to the control lever and the other end of each actuator is connected to a remotely located rear view mirror so that the position of the mirror may be adjusted by pivotal movement of the control lever. Protective sheaths encircle each of the wire actuators and the respective ends of these sheaths terminate short of the guide surfaces so that only the wire actuators need be bent across the guide surfaces.

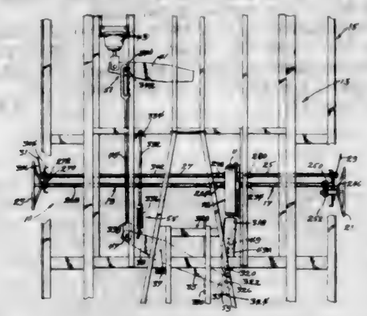
3,444,755
REMOTE CONTROL APPARATUS
Robert J. Smith, Farmington, Mich., assignor to C. M. Hall Lamp Company, a corporation of Michigan
Filed May 16, 1967, Ser. No. 638,803
Int. Cl. F16c *1/10*
U.S. Cl. 74—501 **17 Claims**

A remote controlled, automotive rear view mirror and particularly two embodiments of such devices that facilitate automatic adjustment in the relationship between the control lever and the mirror. In each embodiment, the control lever is connected to the mirror by means of a plurality of flexible wire actuator assemblies so that angular movement of the control lever results in concurrent angular movement of the mirror. An automatic release or slip connection is provided between at least one of the flexible transmitters and the mirror so that normal control signals will be transmitted from the control lever



to the mirror, and yet adjustment may be conveniently made if either the lever or the mirror reaches its extreme position before the other member is in its extreme position.

3,444,756
HANDBRAKE FOR RAILROAD CARS
Pierre Joseph Andonian, Montlignon, France, assignor to Universal Railway Devices Company, a corporation of Delaware
Filed Apr. 13, 1967, Ser. No. 630,766
Int. Cl. G05g *1/08*
U.S. Cl. 74—505 **2 Claims**

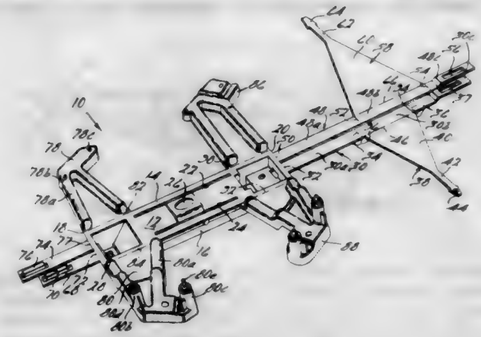


The disclosure relates to a railroad car handbrake device adapted for under the car application in which a handbrake mechanism of the vertical end of car type is turned on its side and secured to the car underframe intermediate the sides of the car and between a pair of mounting plates that are respectively secured to the car sides, with the housing extending longitudinally of the car. Journaled in the respective mounting plates are extensions for the handbrake operating and release shafts that are each provided with operating handles exteriorly of the mounting plates and positioned relative to the car wheels so that the handbrake may be readily operated from either side of the car by the brakeman standing at ground level. The handbrake parts are oriented so that gravity aids the holding of the handbrake mechanism against release, and the brake chain is enclosed in a sealing boot applied in sealing relation to the handbrake mechanism housing to shield the interior of the housing from dirt.

3,444,757
ONE-PIECE VEHICLE CLIMATE CONTROL ACTUATING DEVICE
Donald A. Caley, Dearborn Heights, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Aug. 2, 1967, Ser. No. 657,887
Int. Cl. G05g *1/04*
U.S. Cl. 74—523 **12 Claims**

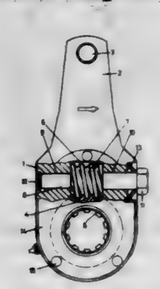
A device for actuating the climate control mechanisms of a motor vehicle comprising a one-piece, generally

planar, plastic molding having a main body and at least a pair of legs hingedly connected to the main body. An operating lever is hingedly connected to one of the legs. The hinged connections are formed by reducing the thickness of the plastic along a selected length thereof to



allow the molding to be folded so that the legs may be joined to form a closed loop with the main body. The operating lever, to which control cables may be operatively attached, is then positioned so that it extends through an aperture in the main body.

3,444,758
VEHICLE BRAKE LINKAGE SLACK-ADJUSTER
Sten-Eric Svensson and Kaj Anders Lilja, Malmo, Sweden, assignors to Svenska Aktiebolaget Bromsregulator, Malmo, Sweden
Filed Feb. 1, 1968, Ser. No. 702,304
Claims priority, application Great Britain, Feb. 28, 1967, 9,329/67
Int. Cl. G05g *1/12*
U.S. Cl. 74—559 **3 Claims**

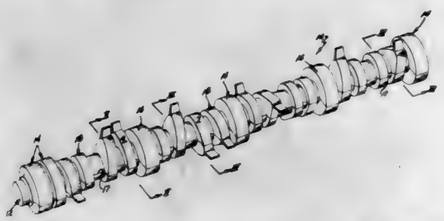


A brake linkage slack-adjuster permits heavier loading by providing teeth on a worm gear meshing with teeth on a worm wheel wherein the teeth have unsymmetric profiles resulting in a profile angle with a plane normal to the axis of the worm gear smaller when a brake force is being transmitted than when no brake force is being transmitted.

3,444,759
CAMSHAFT, PATTERN, AND METHOD OF MAKING
Kenneth E. Kueny, Muskegon, Mich., assignor to Johnson Products, Inc., Muskegon, Mich., a corporation of Michigan
Filed Jan. 30, 1967, Ser. No. 612,642
Int. Cl. F16h *53/00*; B22d *15/02*
U.S. Cl. 74—567 **15 Claims**

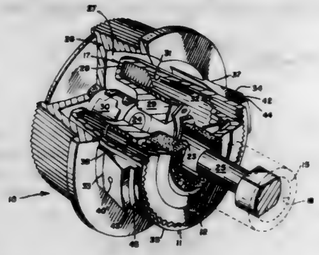
An inproved camshaft and a novel method and pattern for forming an improved camshaft with generally uniform metallurgical structure and hardness in all of the cam lobes, particularly in the noses and ramps where it normally varies considerably, by overcoming (a) the variable chilling effect of the mold sec-

tions with respect to their spacing from the gate, (b) the variable chilling action of the portions formed in the cope with respect to those formed in the drag, and (c) the variable heat retention of mold sections adjacent bearing journal mold sections with respect to those not so adjacent. This improvement is achieved by using a special



pattern to form narrow ravines in the mold, projecting from the mold portions that form the cam lobe noses, such ravines being only in planes parallel to, coplanar with, or perpendicular to the cope and drag junction plane, to form a camshaft having lobe noses with special chilling projections that create like acicular carbide formation in the several cam lobe nose zones.

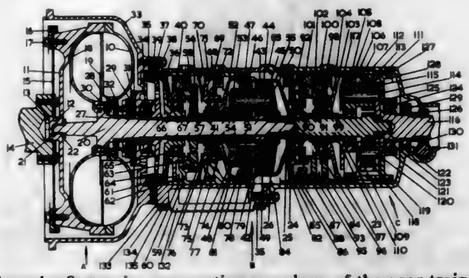
3,444,760
BACKLASH CONTROL MEANS FOR INTERNAL GEARING
Clarence W. Claxton, Chili, and Edward N. Esmay, Brighton, N.Y., assignors to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Dec. 26, 1967, Ser. No. 693,319
Int. Cl. F16h *35/10, 33/00*
U.S. Cl. 74—640 **5 Claims**



Backlash control means for a gear reduction mechanism which prevents lost motioin and ratcheting of the teeth of an internal gear with respect to a pinion meshed therewith the pitch diameter of said pinion being smaller than the pitch diameter of the gear, i.e., one gear has more teeth than the other. Either the gear or the pinion is made of flexible material and it is pressed and distorted into full engagement with the other member at two opposite positions thereon principally by a semi-circular spring snap ring which acts against a pair of contacting pressure arms, and furthermore the deformation of the flexible member at said positions under excessive load is limited to an amount which prevents ratcheting of the teeth by a rigid stop means which is fitted to effect a predetermined maximum displacement of the flexible member.

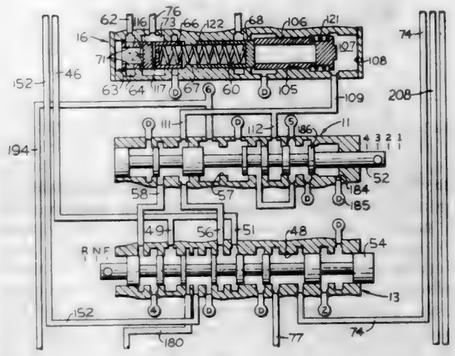
3,444,761
EPICYCLIC CHANGE-SPEED GEARING
Axel Charles Wickman, 69 S. Washington Drive, St. Armands Key, Sarasota, Fla. 33577
Filed June 28, 1967, Ser. No. 649,563
Claims priority, application Great Britain, July 29, 1966, 34,063/66
Int. Cl. F16h *15/48*
U.S. Cl. 74—740 **11 Claims**

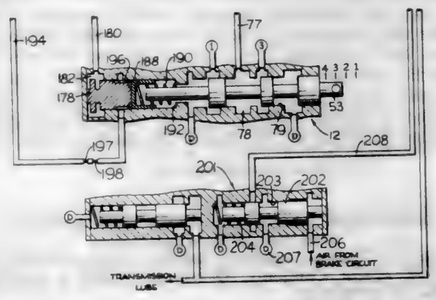
An epicyclic change-speed gearing has two similar simple epicyclic gear trains of which the planet carriers constitute a first pair of like elements, the sun gears are a second pair of like elements and the annuli are a third pair of like elements. One pair of like elements, other



than the first pair, are reaction members of the gear trains, another pair of the like elements are power input and power output members of the gearing, and the remaining pair of like elements are drivingly coupled together.

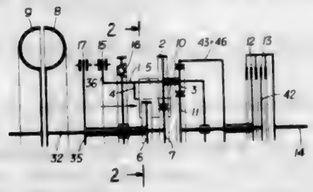
3,444,762
TRANSMISSION WITH SELECTOR VALVES
Kenneth F. Golan, Pekin, David S. Ohaver, Farmington, Shairyl I. Pearce, East Peoria, and Gerald D. Rohweder, Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Original application Feb. 1, 1966, Ser. No. 523,980, now Patent No. 3,389,770, dated June 25, 1968. Divided and this application Feb. 7, 1968, Ser. No. 712,885
Int. Cl. F16h *3/44, 37/00;* **F16d** *67/00*
U.S. Cl. 74—754 **3 Claims**





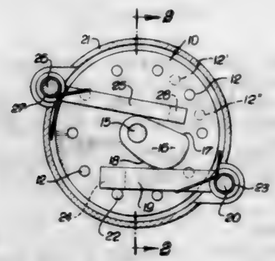
Friction clutches and brakes for changing the ratios of a planetary transmission including first and second selector valves wherein the first valve when in a certain position directs fluid to a blocker means which prevents the second valve from moving to one of its positions.

3,444,763
PLANET WHEELS-CHANGE GEAR FOR AUTOMOTIVE VEHICLES
Anton Ryba, Freiheitsstrasse 57/21, Bozen, Italy
Filed Dec. 18, 1967, Ser. No. 691,440
Claims priority, application Austria, Dec. 22, 1966, A 11,767/66
Int. Cl. F16h *57/10*
U.S. Cl. 74—763 **7 Claims**



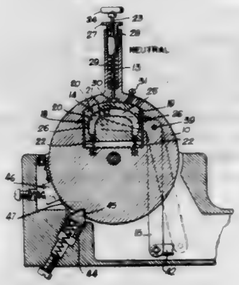
A planetary wheel change-gear drive having four forward drives and a reverse drive for automotive vehicles, which comprises a housing. An input shaft and an output shaft are both coaxially rotatably mounted in the housing. A plurality of planetary gears are provided. A web is provided for rotatably mounting the planetary gears about the axis of the shafts. A first sun gear is provided having outer teeth and operatively connected with the input shaft. A ring gear is also provided having inner teeth. A third sun gear is also provided having outer teeth. The first ring and third sun gears are rotatably mounted about the axis of the shafts. Means are provided for coupling the ring and third sun gears individually as well as jointly with the input shaft. The planetary gears include at least one first planetary gear, at least one second planetary gear, and at least one third planetary gear. The first planetary gear engages the first sun gear and is coaxially mounted with the second planetary gear. The ring and third sun gears engage simultaneously the second planetary gear. The first planetary gear has a diameter smaller than that of the secondary planetary gear. The first planetary gear is rigidly connected with the second coaxially disposed planetary gear. Means are provided for braking the web to the housing. A second sun gear is also provided. Additional means are provided for braking the second sun gear to the housing. The third planetary gear has a greater width than that of the other of the planetary gears and engages the second sun gear as well as the first planetary gear.

3,444,764
COUNTER DRIVE APPARATUS
Roger Greenwood, North Hollywood, Calif., assignor to International Telephone and Telegraph Corporation, a corporation of Delaware
Filed Mar. 20, 1967, Ser. No. 624,373
Int. Cl. F16h *25/16*
U.S. Cl. 74—822 **6 Claims**



A number wheel of a mechanical counter has a plurality of equally spaced projections arranged about the wheel axis. A cam in its rest position holds a first member against a projection securing the wheel against rotation. Actuation of the cam releases the wheel for rotation and advances the wheel by sequentially driving a second member and the first member against the projections. Reciprocating small-angle and 360 degree rotation actuation are alternatives.

3,444,765
CONTROL FOR FORWARD AND REVERSE DRIVE AND FOR ENGINE POWER, WITH SPECIAL ADJUSTMENTS FOR ENGINE IDLING AND ACCELERATION
James W. Des Champs, R.F.D. 4, Box 305, Sumter, S.C. 29150
Filed Nov. 2, 1967, Ser. No. 680,062
Int. Cl. G05g *13/04*
U.S. Cl. 74—876 **6 Claims**



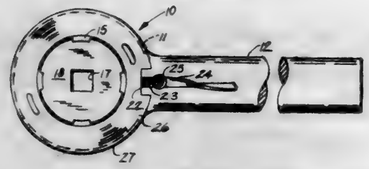
Direction of movement and engine power controlled by a single handle having incorporated with it, rotational adjustment for setting the idling speed of the engine and push button adjustment for accelerating the engine independently of regular throttle adjustment.

3,444,766
COUNTERSINKING AND COUNTERBORING TOOLS
Ragnar Eriksson, Pepparvagen 18, Forsta, Sweden
Filed May 8, 1967, Ser. No. 636,776
Int. Cl. B23b *11/10;* **B23d** *77/00*
U.S. Cl. 77—73.5 **1 Claim**



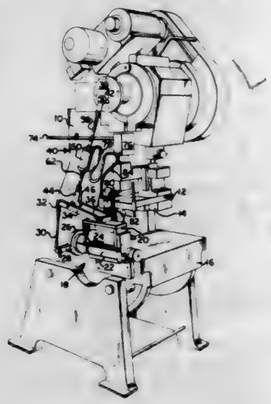
A rotatable cutting tool having a shank portion, an intermediate portion and a body portion. The body portion is eccentric relative to the shank and the intermediate portion. The body portion includes a countersinking and counterboring portion wherein the countersinking portion has a spirally generated bevel surface with a chip receiving bore penetrating and opening into both the intermediate portion and the generated bevel portion.

3,444,767
FRICTION WRENCH
Melvin C. Cupler, % Broyer and Shattuck, 107 Lincoln St., Roseville, Calif. 95678
Filed Jan. 16, 1967, Ser. No. 609,597
Int. Cl. B25b *13/46*
U.S. Cl. 81—63.1 3 Claims



A friction wrench including a core, a circular sprag, a sprag release ring, a bronze alloy circular ring and lever release means for the sprag.

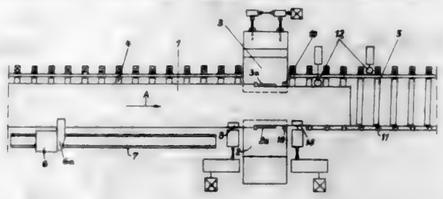
3,444,768
STRIP STOCK FEED MECHANISM
Homer J. McGara, Cincinnati, and Edward B. Spang, Toledo, Ohio, assignors to Sheller-Globe Corporation, Toledo, Ohio, a corporation of Ohio
Filed May 2, 1967, Ser. No. 635,464
Int. Cl. B26d *5/20*; B65h *17/26*
U.S. Cl. 83—238 7 Claims



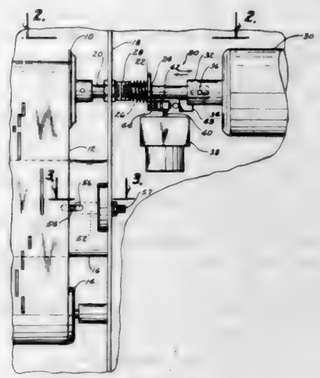
A feeding mechanism which synchronizes the advance of metal strip stock material into the working area of a metal working machine such as a stamping or punch press with the machine operation such that the material is advanced intermittently at a time when the working faces of the machine are separated from the work upon which they are operating wherein the advances of the strip stock material may be automatically varied during the machine operation.

3,444,769
DEVICES FOR GUIDING LENGTHS OF PLATE ON THE ENTRY SIDE OF TRIMMING SHEARS
Karl-Heinz Simon, Ratingen, Germany, assignor to Schloemann Aktiengesellschaft, Duesseldorf, Germany, a company of Germany
Filed Aug. 4, 1966, Ser. No. 570,314
Claims priority, application Germany, Aug. 5, 1965, Sch 37,500
Int. Cl. B26d *7/06*
U.S. Cl. 83—420 1 Claim

Trimming shears for sheet and plate, particularly for heavy plate, comprising a clamping device carried by a clamping carriage movable along a rail track on one side of a roller table carrying the plate to be trimmed, a stationary flat-knife shear on the same side of the roller table as the rail track, an adjustable flat-knife shear on the opposite side of the roller table, driving rollers engaging the surfaces of the plate along the edge adjacent to the rail track, vertical guide rollers bearing against both edges of the plate, as it leaves the shears and vertical pressure rollers bearing against one edge of the plate after it has passed the shears.



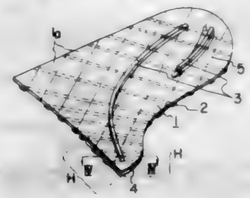
3,444,770
PLAYER PIANO TRACKING AND TRANSPOSE SYSTEM
Richard L. Cannon and Charles M. Morse, Yankton, S. Dak., assignors to Dale Electronics, Inc., Columbus, Nebr., a corporation of Nebraska
Filed Oct. 6, 1966, Ser. No. 584,884
Int. Cl. G01f *5/06*
U.S. Cl. 84—139 11 Claims



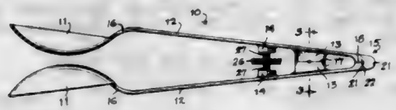
A tracking and transposing system for a player piano including a single pole, double throw tracking switch connected by an electrical circuit to a reversible drive D.C. motor which re-aligns the sheet material by laterally adjusting the roll carrier. The D.C. motor can also be locked in position to prevent lateral movement of the roll carrier during the rewind cycle.

3,444,771
PIANO SOUNDBOARD ASSEMBLY WITH AUXILIARY BOARD
Hanzo Taguchi, Hamamatsu-shi, Japan, assignor to Nippon Gakki Seizo Kabushiki Kaisha, Shizuoka-ken, Japan
Filed Dec. 8, 1966, Ser. No. 600,192
Claims priority, application Japan, Dec. 17, 1965, 40/77,934
Int. Cl. G10c *3/06*
U.S. Cl. 84—194 10 Claims

A piano soundboard assembly having an auxiliary board interposed between and bonded to a soundboard on the side thereof provided with ribs at least at the treble tone portion of the soundboard, with the grain of the auxiliary board being at an angle to the grain of the soundboard, and the auxiliary board being preferably of maple and having a thickness of from 2 to 3 mm. when interposed between the ribs and the soundboard and of from 3 to 6 mm. when the ribs are omitted at the portion of the soundboard to which it is bonded.

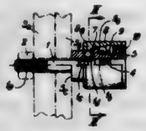


3,444,772
MUSICAL INSTRUMENT
Stephen P. Martin, 28 Yorktown Circle, Trumbull, Conn. 06611
Filed Feb. 6, 1967, Ser. No. 614,074
Int. Cl. G01d *13/08*
U.S. Cl. 84—402 4 Claims



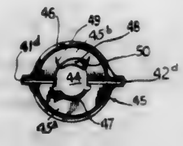
Musical playing spoons having a pair of opposed spoon elements, each comprising a bowl and a springy handle, with the convex sides of the bowls facing each other in spaced relation, and with the springy handles converging rearwardly toward each other and connected at their gripping end portions by bridging means to establish the springing point of the handles forwardly of the gripping end portions and to provide a resonant vibration conducting tone control bridge between the handles.

3,444,773
RELEASABLE CONNECTING DEVICE
Marie-Joseph F. L. Ligné, Versailles, Yvelines, France, assignor to Sud-Aviation, Societe Nationale de Constructions Aeronautiques, Paris, France, a French body corporate
Filed Apr. 22, 1966, Ser. No. 544,553
Claims priority, application France, May 6, 1965, 16,095
Int. Cl. F16b *19/00*, *37/08*; F41f *3/04*
U.S. Cl. 85—9 1 Claim



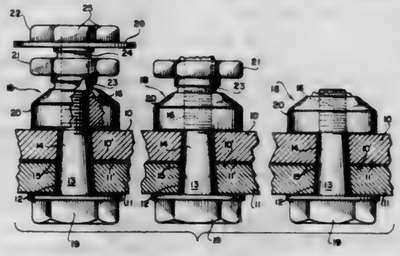
A detent releasable clamping device having a pin, one end of which is screwed to a clamping nut while the other end (adapted for rotary tightening vs. said nut to clamp together plural elements—e.g. a device to a support), comprises a frusto-conical thickening for the bearing against a head via a detent ball device. In said latter device, the balls are located in radial holes of a tubular member encircling the thickening and maintained in inwardly protruding condition by an annular slide fitted on the tubular member and spring urged in nonrelease position.

3,444,774
STUD-AND-FASTENER ASSEMBLY
William B. Duffy, Berkeley Heights, N.J., assignor, by mesne assignments, to United-Carr Incorporated, Boston, Mass., a corporation of Delaware
Filed July 5, 1967, Ser. No. 651,281
Int. Cl. F16b *37/00*
U.S. Cl. 85—36 9 Claims



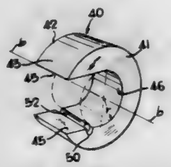
An initially-threadless stud is provided with a 1-piece sheet-metal fastener which may be pushed and/or turned onto the stud, and which may be removed from the stud by counterrotation. The sheet metal of the fastener is so folded and extended from the fold as to provide diametrically opposite wings, these wings constituting a thumb-and-finger hold for rotation and/or counterrotation of the fastener. In the stud-and-fastener assembly itself, without contact between the fastener and another member through which the stud passes, the fastener has stability on the stud about two transverse axes which are perpendicular to each other and each of which is perpendicular to the axis of the stud. The stability about one of these transverse axes is provided by the inner edges of the wings which closely confront the cylindrical surface of the stud. The stability about the other of these transverse axes is provided by the stud-gripping means of the fastener. Such stud-gripping means consists of an abutment on the fastener which engages the cylindrical surface of the stud and, diametrically opposite the abutment, a spring tooth which engages the cylindrical surface of the stud. The fastener has a washerlike base, which is annularly embossed. This provides a projecting annular rib that is adapted to afford smooth engagement between the fastener and a member confined on the stud by the fastener, or through which the stud passes.

3,444,775
NUT FORMED WITH MULTIPLE TORQUE-OFF COLLARS
James F. Hills, Atlanta, Ga., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Feb. 16, 1968, Ser. No. 706,033
Int. Cl. F16b *31/00*, *33/04*
U.S. Cl. 85—61 5 Claims



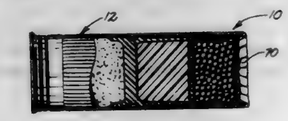
A single nut is provided which can be used to develop multiple torques at different times through discrete and isolated shear sections having different rupture values. This allows for an initial, measured torque to seat a bolt followed by a final, measured torque after the joint has settled or relaxed. Optimum nut size is thereby possible having particular utility in applications involving fatigue critical structure.

3,444,776
ELASTIC-LATCHING SPACER FOR ROLL-FORMING MACHINES AND THE LIKE
Charles T. Frizell, St. Louis, Mo., assignor to Engel Equipment, Inc., St. Louis, Mo., a corporation of Missouri
Filed Aug. 23, 1967, Ser. No. 662,673
Int. Cl. F16b *43/00*; F16c *17/02, 19/04*
U.S. Cl. 85—51 3 Claims



For that type of roll-forming machine in which roll elements have alternate positions, C-shaped elastic-latching spacers are provided, for quick securement and detachment from the shafts. In the wall of the entrant slot adjacent to the inner semi-cylindrical surface of the spacer is a groove, holding an inward-projecting key of rubber-like material. Its resistance to compression causes the spacer to hold more than 180° around the shaft, resisting shock and vibration.

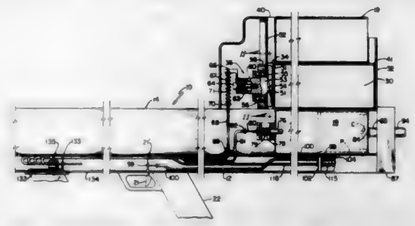
3,444,777
METHOD FOR LOADING A SHOT SHELL
Frederick A. Lage, Gladbrook, Iowa 50635
Continuation-in-part of application Ser. No. 443,480, Mar. 29, 1965. This application Mar. 20, 1967, Ser. No. 624,379
Int. Cl. F42b *33/02, 7/08*
U.S. Cl. 86—23 3 Claims



The method for loading a shotgun shell including powder, an elongated wad of expanded plastic secured to a sleeve element holding shot shell wherein the elongated wad of expanded plastic is subjected to a compressive force through the quantity of shot sufficient to reduce the overall length of the components in the shot shell casing such that the outer end of the casing may be closed onto the shot. In one embodiment, the elongated wad of expanded plastic is on the shot side of the sleeve and in the second embodiment the elongated wad of expanded plastic is on the powder side of the sleeve opposite the shot. The sleeve and wad of elongated plastic are the same for all shot shell loading operations regardless of the quantity of shot to be loaded.

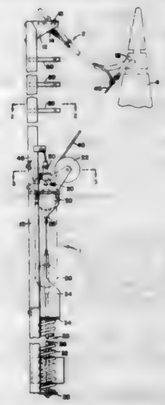
3,444,778
ROCKET LAUNCHER
Leonard E. Bates, Aurora, Colo., assignor to Johne E. Reilly
Filed Feb. 8, 1967, Ser. No. 614,671
Int. Cl. F41f *9/06, 3/02*
U.S. Cl. 89—1.804 10 Claims

The launcher is a multi-shot, shoulder-borne weapon for launching rocket projectiles of the type having outer, collapsible stabilizer fins which when launched can be accurately delivered on target in the range of one thousand yards. The weapon consists of a barrel section with an open breech behind the barrel to detachably lock the magazine in place; an indexing and cocking mechanism is controlled by a slide action hand grip to successively



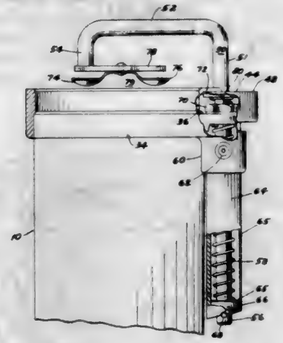
advance each round into position and to cock the firing mechanism, the latter being triggered in a conventional manner.

3,444,779
LANYARD RETRACT APPARATUS FOR AN UMBILICAL CABLE ASSEMBLY
Bernard J. Buell and Robert L. Moore, Orlando, Fla., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Feb. 14, 1968, Ser. No. 705,535
Int. Cl. F41f *3/04*
U.S. Cl. 89—1.811 6 Claims



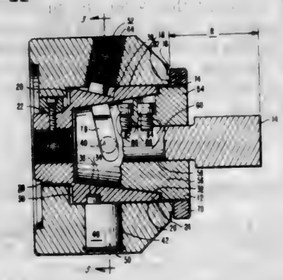
The apparatus includes a vertically disposed support frame pivotally supporting at its upper end a portion of an umbilical cable assembly, a fixed pulley mounted for rotation on the frame below the upper end thereof, a movable pulley mounted on the upper end of a reciprocable rod for vertical movement within said frame, an inertially damped shock absorber, and a retractor mechanism for retracting the umbilical cable assembly from connection with a missile or the like vehicle. A lanyard, connected at one end to the umbilical cable assembly, engages the two pulleys intermediate the ends thereof, and has its opposite end connected with the shock absorber. The shock absorber, including a counterbalance arm using lead weights and an overcenter mounting, anchors the lanyard to the frame, allows for limited relative movement between the frame and the umbilical cable assembly, and maintains a predetermined tension on the lanyard prior to actuation.

3,444,780
TUBULAR AMMUNITION RACK AND HOUSING
Rex A. Fusee, Madison Heights, Mich., assignor to the United States of America as represented by the Secretary of the Army
Filed Mar. 5, 1968, Ser. No. 710,610
Int. Cl. F42d *9/00*; F41c *25/00*
U.S. Cl. 89—34 7 Claims



An ammunition rack housing and handle which retains ammunition cartridges in receptacles. A collar is secured to one end of each of the receptacles which serves to strengthen the receptacle. A rod-like member is rotatably mounted in a tubular member which is mounted adjacent the receptacle and a portion of the collar. A clamp is secured to the rod-like member, engages the cartridge, and shields the cartridge firing pin from external contact. A rotatable stop is secured to the rod-like member which prevents rotation of the clamp beyond a position which will expose the cartridge firing pin if rotated in one direction and which will prevent damage to the rod-like member if rotated in the opposite direction. The stop has a rim which is adapted to engage a portion of the cartridge so that when the rod-like member which is shaped like a handle is rotated and extracted from the tubular member, the cartridge is ejected from said receptacle.

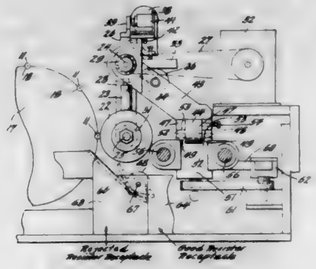
3,444,781
TOOL HOLDER
Elwin Sunderman, Inglewood, and Merle Hilliard, Los Angeles, Calif., assignors to Sonnet Tool & Manufacturing Company, Hawthorne, Calif.
Filed Oct. 19, 1967, Ser. No. 681,046
Int. Cl. B23c *7/00*; B23b *31/02, 5/22*
U.S. Cl. 90—11 13 Claims



A tool holder including a spindle adapter, a socket received therein having a tapered bore, and a tool holder portion received in said tapered bore. Means to compensate for tool wear are provided to adjustably maintain the distance between the end of a tool received in said holder portion and a face on the adapter coacting with the tool holder portion. Quick release means are provided to separate the tool holder portion from the tapered socket.

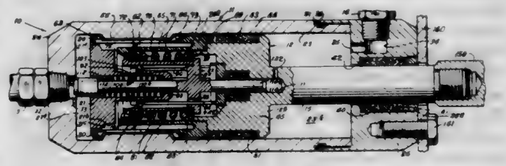
This invention relates generally to tool holders of the kind used in large machining operations and more particularly to a quick release tool holder.

3,444,782
APPARATUS FOR HELIXING AND SORTING FILMED RESISTORS
Nicholas J. Mandonas, Medford, and Norman F. Smith, Methuen, Mass., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed May 20, 1966, Ser. No. 551,771
Int. Cl. B23c *3/28*
U.S. Cl. 90—11.64 11 Claims



Apparatus uses a pivotally mounted rotary saw to make helical cuts in films on ceramic cores. The saw pivots downwardly into an intermediate position, close to a core, then drops onto the core without rebounding, therefrom as portions of two cams are removed successively from support of the saw. A magnet holds the saw at a desired depth of cut. The saw is mounted for adjustment to follow a desired angle of helix. Preliminary and continuous resistance tests govern the cutting of each helix to bring the film resistance to a desired value.

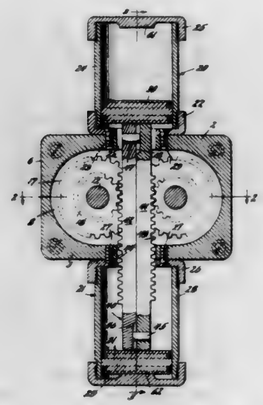
3,444,783
OPERATOR DEVICES
John V. Fredd, Dallas, Tex., assignor to Otis Engineering Corporation, Dallas, Tex., a corporation of Delaware
Filed Mar. 1, 1965, Ser. No. 435,990
Int. Cl. F15b *15/26, 11/00, 13/00*
U.S. Cl. 91—41 15 Claims



A pressure fluid actuated operator device movable to at least two positions for operating other devices and adapted to be releasably locked in each of said positions, having fluid pressure differential pulse code signal responsive operator means for actuating and releasing the locking means of said operator device in response to se-

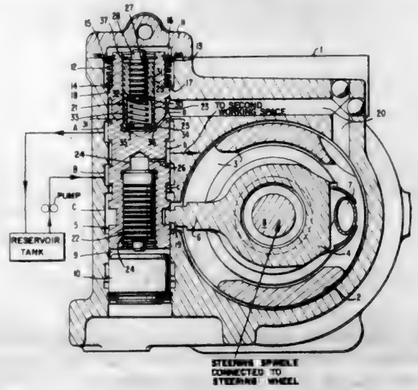
lected predetermined pulse code pressure differential signals transmitted to said operator device from a remote source of pressure fluid; and a system utilizing a plurality of said operator devices in which each is selectively operated in response to a predetermined selected pulse code pressure differential signal transmitted to all of said operator means by fluid pressure.

3,444,784
FLUID MOTOR ROTARY ACTUATOR
Robert L. Wengerd, Kidron Road, R.D. 2, Orrville, Ohio 44667
Filed Dec. 19, 1966, Ser. No. 602,732
Int. Cl. F15b *11/06*; F01b *1/02*; F16j *1/10*
U.S. Cl. 91—413 **6 Claims**



1. A fluid motor actuator of the character described comprising; a housing having top, bottom, side and end walls defining a closed chamber; a power output shaft rotatably mounted in said chamber with one end thereof extending out through one of said side walls, an idler shaft rotatably mounted in said chamber in spaced parallel relation to said power output shaft; a first larger gear and a first smaller gear secured on said power output shaft within said chamber, a second larger gear which is secured on said idler shaft in mesh with said first larger gear, a second smaller gear which is secured on said idler shaft in opposed relation to the said first smaller gear; an upper fluid pressure cylinder secured to the top wall of said housing and extending upwardly therefrom, and a similar lower fluid pressure cylinder secured to the bottom wall of said housing and extending downwardly therefrom in axial alignment with said upper cylinder, a piston slidably mounted in said upper cylinder, and a similar piston slidably mounted in said lower cylinder; an elongated rack means interposed between said first and second smaller gears in mesh with each of said gears with the upper end thereof extending upwardly through an aperture in the top wall of said housing into said upper cylinder and the lower end thereof extending downwardly through an aperture in the bottom wall of said housing into said lower cylinder; and means by which fluid under pressure is adapted to be selectively supplied to the outer end of one of said cylinders and simultaneously exhausted from the outer end of the other of said cylinders, whereby said rack means is adapted to be reciprocated thereby applying torque directly to said power output shaft through said first smaller gear and indirectly thereto through said second smaller gear, said idler shaft, said second larger gear and said first larger gear.

3,444,785
SERVO-STEERING MECHANISM FOR MOTOR VEHICLES
Klaus Katz, Stuttgart, and Arwed von Koch, Stuttgart-Sonnenberg, Germany, assignors to Daimler-Benz Aktiengesellschaft, Stuttgart-Untertürkheim, Germany
Filed June 19, 1967, Ser. No. 646,836
Claims priority, application Germany, June 24, 1966, D 50,383
Int. Cl. F15b *13/14*
U.S. Cl. 91—434 **17 Claims**

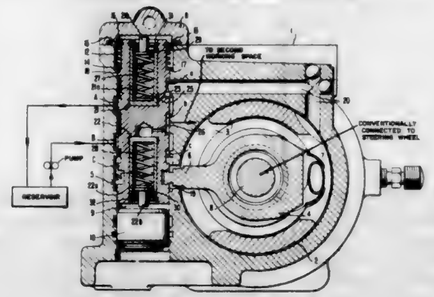


A servo-steering mechanism for motor vehicles, in which a slide valve structure, actuated by a transmitter element responsive to the manual force applied at the steering wheel, is adapted to be displaced within a bore provided in a housing, whereby the slide valve structure includes two axial bores, each accommodating therein a reaction piston, and whereby the control slide valve member valves the pressure medium supplied from a pressure medium source in such a manner that in its normal position, the pressure medium is conducted directly back to the discharge substantially without throttling while, depending on the movement of the slide valve from the normal position in one or the other direction, a pressure build-up is produced in the respective working space of the cylinder by means of the hydraulic pressure medium; each axial bore provided in the slide valve accommodates a two-partite reaction piston and is in communication by way of a bore with a corresponding working cylinder so that the excess pressure is able to form a first reaction force; a spring normally causes the two piston parts to move initially as a unit while the first reaction force is effective, and the two-partite reaction piston structure is so constructed and arranged that after the pressure in the corresponding working cylinder exceeds the oppositely acting spring force of this spring, relative movement takes place, and a second reaction force becomes effective to which is added the first reaction force or a force derived from the first reaction force.

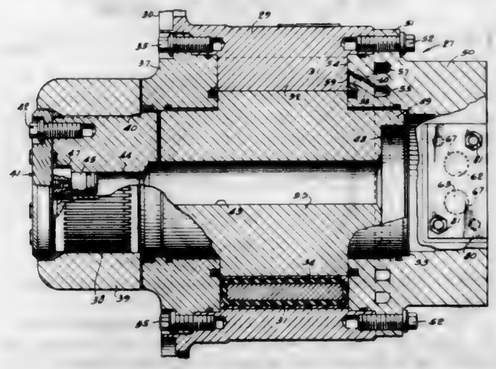
3,444,786
SERVO-STEERING MECHANISM FOR MOTOR VEHICLES
Hans-Joachim M. Förster, Stuttgart-Riedenberg, and Klaus Katz, Stuttgart, Germany, assignors to Daimler-Benz Aktiengesellschaft, Stuttgart, Germany
Filed June 19, 1967, Ser. No. 646,837
Claims priority, application Germany, July 24, 1966, D 50,384
Int. Cl. F15b *13/14*
U.S. Cl. 91—434 **16 Claims**

A servo-steering mechanism for motor vehicles in which the manual force applied to the steering wheel is assisted by a servo-motor, which comprises a control slide valve assembly displaced by a transmitter member operatively

connected by way of the steering spindle with the steering wheel, whereby the control slide valve selectively controls the supply of pressure medium to the two working chambers of the servo-motor; the slide valve assembly includes two pot-shaped piston elements, a piston member slidable within each pot-shaped piston element, and a spring between the pot-shaped piston element and the slidable piston member normally urging the piston member into engagement with the slide valve housing; the slide valve assembly is so connected with the working chambers that a first reaction force, resulting from the pressure of the liquid medium within a respective working space, though reduced to a smaller value, is applied to the pot-shaped piston element to produce a first reaction force opposing the manual force applied to the steering wheel; a retainer ring is inserted into the pot-shaped piston element as abutment for the piston member so as to eliminate the first reaction force when the first reaction force exceeds the prestress of the spring within the pot-shaped piston element by abutment of the pot-shaped piston element against the retainer ring. The spring force of the spring within the pot-shaped piston element constitutes a second reaction force in case of further increase of the steering force applied to the steering wheel once the first reaction force is overcome.

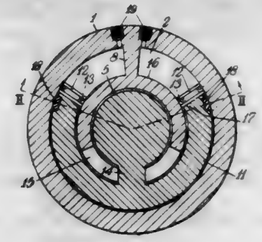


3,444,787
ROTARY VANE SUSPENSION UNITS FOR ENDLESS TRACK VEHICLES AND THE LIKE
Paul E. Gies, Eggertsville, Gottlieb Sperl, Buffalo, and Ralph A. Braaten, Kenmore, N.Y., assignors to Houdaille Industries, Inc., Buffalo, N.Y., a corporation of Michigan
Filed Mar. 28, 1966, Ser. No. 537,916
Int. Cl. F15b *11/10*; F01c *9/00*; F01b *31/00*
U.S. Cl. 91—462 **17 Claims**



An actuator of the oscillating wing shaft and fixed abutment type has a body defining a working chamber on one end of which is attached a combination end closure and manifold comprising a one-piece casting having therein annular distributor mains communicating with the working chamber at respective opposite sides of the abutment means, and respective pressure and drain headers connected with the mains by selectively operable passages. The wing shaft may be hollow and have a plug at one end which is retained by a plate which also retains a member attached to the adjacent end portion of the wing shaft. The closure/manifold may also have valving therein for controlling the hydraulic working circuitry which may include an accumulator. A valve control cam may be mounted on and oscillatable with the wing shaft and the wing shaft carries means to adjust the cam relative to followers on control valves.

3,444,788
HYDRAULIC ANNULAR PISTON MOTORS
Franz Sneen, Topasgatan 40, Goteborg, Sweden
Filed Nov. 22, 1966, Ser. No. 596,275
Claims priority, application Sweden, Dec. 13, 1965, 16,096/65; Sept. 2, 1966, 11,829/66
Int. Cl. F01c *9/00*; F16j *1/00, 9/00*
U.S. Cl. 92—120 **4 Claims**



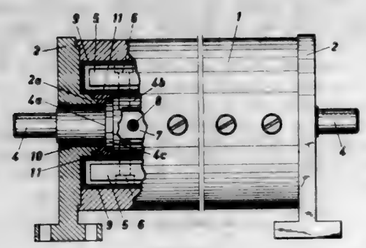
An oscillatory piston driven fluid actuator in which a part annular piston is operable with a clearance in a corresponding channel or cylinder with the ends of the piston being provided with sealing means. When fluid pressure is supplied to the piston ends, the piston may be deformed thereby resulting in the sealing members being crushed against the channel wall. To avoid this problem, pads of antifriction material are provided immediately below the sealing members. If the piston and arm are separate interengaging components, a pad is disposed outside of the connection for serving as a pivot during the rocking movement which will occur in lieu of the deformation of the individual components.

In the actuators having a vertical shaft similar pads are provided at the underside of the piston.

3,444,789
PRESSURE MEDIUM OPERATED MECHANISM
Sten Anders Runeson Hansen, Lerum, Sweden, assignor to Associated Cargo Gear AB, Herkulesgatan, Sweden
Filed Jan. 17, 1967, Ser. No. 609,920
Claims priority, application Sweden, Jan. 24, 1966, 853/66
Int. Cl. F01c *9/00*
U.S. Cl. 92—121 **2 Claims**

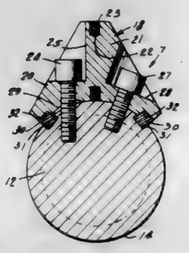
A rotary actuator including at least one radial vane operable in a chamber provided with a stepped rotor shaft journalled in lids forming the ends of the chamber. The lids have hub portions of about the same diameter as the thicker middle portion of the shaft and each vane is longer than such middle portion and extends outward over the hub portions. The edge of each hub portion and the juxtaposed edge of the middle portion of the shaft is recessed

to provide a groove of substantially T-shaped cross section. A correspondingly shaped sealing ring is mounted



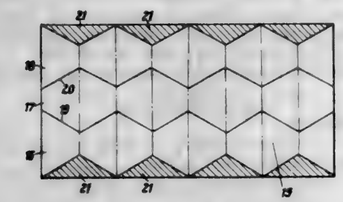
in the groove and the extended parts of each vane sealingly bear against the upper side of the flanges of the T.

3,444,790
ATTACHMENT OF VANES TO HYDRAULIC ROTARY ACTUATOR WINGSHAFTS
Rollin Douglas Rumsey, Buffalo, N.Y., assignor to Houdaille Industries, Inc., a corporation of Michigan
Filed Jan. 31, 1967, Ser. No. 613,027
Int. Cl. F01c *9/00;* **F16d** *1/06;* **F16c** *3/00*
U.S. Cl. 92—125 **9 Claims**



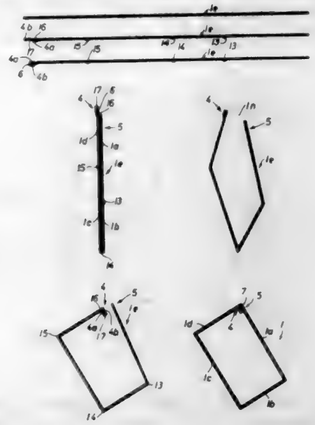
Separately formed vanes are bolted to the wingshafts, and keys between the vanes and the shafts assume torque loads on the assembly.

3,444,791
METHOD FOR MAKING FILTER CONES
Karl-Heinz Honsel, Am Waldwinkel 16, 48 Bielefeld, Germany
Filed Aug. 10, 1966, Ser. No. 571,524
Claims priority, application Germany, Aug. 10, 1965, H 56,810
Int. Cl. B31d *5/00;* **B31b** *1/60;* **B01d** *35/00*
U.S. Cl. 93—1 **1 Claim**



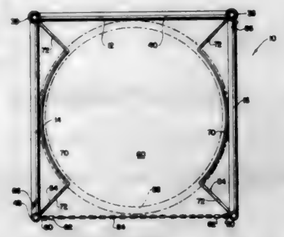
Method for producing trapezoidal filter cones from a web of filter paper having a plurality of offset rows of blanks. The cones are cut from the web by zig-zag cuts to avoid waste.

3,444,792
METHOD FOR THE PRODUCTION OF TUBES
Georg Thesing, Dortmund-Schonau, and Eckehard Singe, Dortmund, Germany, assignors to Holstein & Kappert, Maschinenfabrik Phoenix GmbH., Dortmund, Germany
Filed Aug. 18, 1965, Ser. No. 480,597
Claims priority, application Germany, Aug. 20, 1964, H 53,589
Int. Cl. B31b *49/04, 1/00, 23/00*
U.S. Cl. 93—35 **8 Claims**



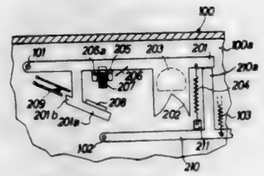
A method of producing a tube of polygonal outline from an elongated web of the type having two longitudinally extending marginal portions consisting at least in part of weldable plastic material and comprising the steps of moving the web lengthwise and folding the web about a line extending between the marginal portions, internally expanding the thus folded web so that the expanded web resembles a polygon and said marginal portions remain temporarily spaced from each other to define a material admitting gap moving the marginal portions into close proximity of each other so that the planes of said marginal portions define between themselves an angle of less than 180°, and finally providing a fluid-tight welded joint between the aforementioned marginal portions to seal the gap, whereby the marginal portions define one corner of the tube.

3,444,793
MANHOLE GUARDRAIL
Thurman A. Pelsue, 3706 S. Hibiscus Way, Denver, Colo. 80237
Filed May 4, 1967, Ser. No. 636,040
Int. Cl. E02d *29/14*
U.S. Cl. 94—38 **10 Claims**



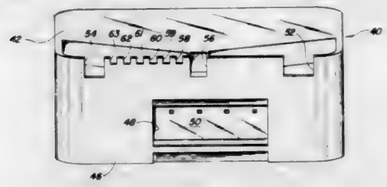
This invention consists of an upstanding foldable tubular guardrail made in three sections, the end sections of which are provided with arcuate brackets adapted to engage the outside cylindrical surface of a manhole shield of the type shown in U.S. Patent No. 3,294,000 while being held in contact therewith by means of a detachable elastic member stretched between said end sections.

3,444,794
IMPELLER SHUTTER FOR PHOTOGRAPHIC CAMERA
Erwin von Wasielewski and Karl-Heinz Handwerk, Munich, Germany, assignors to AGFA-Gevaert Aktiengesellschaft, Leverkusen, Germany
Filed Mar. 28, 1967, Ser. No. 626,477
Claims priority, application Germany, Apr. 1, 1966, A 52,043
Int. Cl. G01j *1/32*
U.S. Cl. 95—10 **24 Claims**



Photographic camera wherein the shutter determines the exposure time and the effective size of the diaphragm opening. The shutter is moved from closed to open position against the bias of a spring in response to impetus received from an impeller which is cocked and released in response to actuation of a shutter release trigger. A first retard unit controls the exposure time and the size of the opening when the intensity of scene light is high. If the intensity of scene light is low, a second retard unit takes over and determines the exposure time as a function of scene brightness by maintaining the shutter in fully open position in which the size of the diaphragm opening assumes a maximum value.

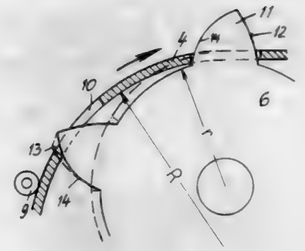
3,444,795
FILM CARTRIDGE CODE ARRANGEMENT
Hubert Nerwin, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Mar. 7, 1966, Ser. No. 532,416
Int. Cl. G03b *19/04*
U.S. Cl. 95—31 **7 Claims**



A film cartridge is provided with a plurality of adjacent code positions for indicating various characteristics of the film contained within the cartridge. The code positions are determined with respect to a locating notch. At least two of these code positions are notched so that the information can be detected by a sensing apparatus.

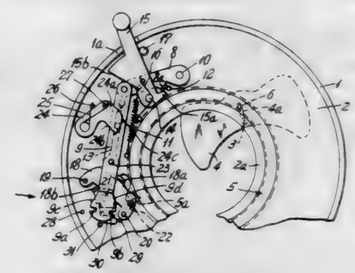
3,444,796
PHOTOGRAPHIC CAMERA
Heinz Waaske, Braunschweig-Runingen, Germany, assignor to Rollei-Werke Franke & Heidecke, Braunschweig, Germany, a German firm
Filed June 14, 1966, Ser. No. 557,495
Claims priority, application Germany, June 16, 1965, R 40,885
Int. Cl. G03b *19/04*
U.S. Cl. 95—31 **2 Claims**

A roll film camera in which film is advanced from a cassette through an exposure area to a metering drum with sprocket teeth engaging perforations in the film, and then onto a take-up spool located partly in front of the metering drum. The film is rewound into the cassette, and during the rewinding the film tends to form a curved loop between the take-up spool and the drum. The flanks of the sprocket teeth which face toward the exposure area,



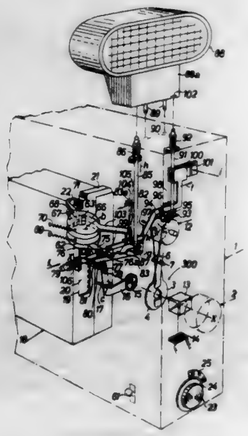
are formed of involute shape. The opposite flanks, are formed substantially in the shape of portions of a hypocycloid generated by circles having respectively the radius of the metering drum and the radius of the loop of film between the take-up spool and the metering drum during the rewinding operation.

3,444,797
PHOTOGRAPHIC SELF-COCKING SHUTTER WITH SWINGING-THROUGH BLADES
Franz W. R. Starp and Fritz Carl Richter, Calmbach, Black Forest, Germany, assignors to Prontor-Werk Alfred Gauthier, G.m.b.H., Calmbach, Black Forest, Germany, a German corporation
Filed Dec. 16, 1965, Ser. No. 514,725
Claims priority, application Germany, Dec. 16, 1964, G 42,243
Int. Cl. G03b *9/20*
U.S. Cl. 95—61 **11 Claims**



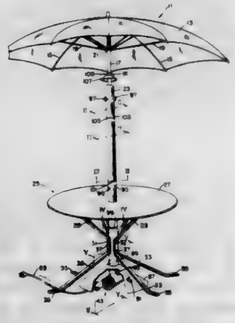
A photographic self-cocking shutter with swinging-through blades that has a blade operating ring and a driving device for moving the ring first in one direction of rotation and the next time in the opposite direction of rotation. A reversing member is provided which is coupled to the blade operating ring. In addition, a spring and a crank mechanism drive are provided, the crank mechanism drive including a connecting rod capable of being transferred into cocked position against the action of the spring. A positive guide acts on the connecting rod during the cocking process and the action of the guide causes the free end of the connecting rod to be alternately coupled to the reversing member.

3,444,798
PHOTOGRAPHIC CAMERA WITH AN AUTOMATIC EXPOSURE CONTROL DEVICE
Helmut Mayr, Am. Kostlor 1, Munich 2, Germany, and Richard Pelte, Heimgartenstrasse 6, Munich 9, Germany
Filed May 9, 1966, Ser. No. 548,598
Claims priority, application Germany, May 11, 1965, A 49,174
Int. Cl. G03b 9/02; G01j 1/04
U.S. Cl. 95—64 32 Claims



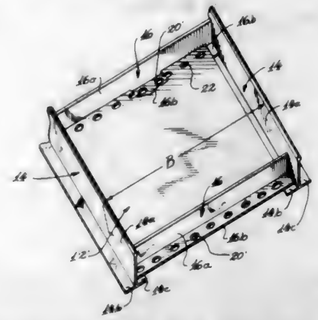
A motion picture camera wherein a set of manually and/or automatically operated switches can adjust the diaphragm by connecting into the circuit of the exposure meter one or more resistors to account for the speed of the motor which operates the shutter and the film transporting mechanism, for the presence or absence of a corrective filter, for the speed of the film, and/or for the selected exposure time.

3,444,799
AIR CIRCULATING MEANS FOR A PATIO TABLE AND UMBRELLA THEREFOR
Charles H. Covington, 1020 Malvern Ave., Hot Springs, Ark. 71901
Filed Nov. 6, 1967, Ser. No. 680,643
Int. Cl. F24f 7/00; A45b 3/00
U.S. Cl. 98—1 10 Claims



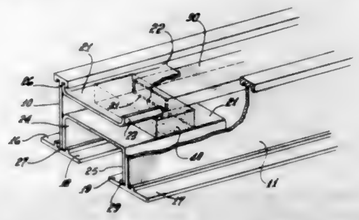
An apparatus for circulating air beneath a patio umbrella having a fan positioned at the lower end of a cylinder encircling the umbrella shaft to force a draft of air upwardly through the cylinder and against a deflector above the cylinder which directs the circulating air downwardly throughout the area beneath the umbrella canopy.

3,444,800
VENTILATING PARTITION CONSTRUCTION
Nels Nelsson, Des Plaines, Ill., assignor to United States Gypsum Company, Chicago, Ill., a corporation of Illinois
Filed Aug. 16, 1962, Ser. No. 217,316
Int. Cl. F24f 13/08, 13/00
U.S. Cl. 98—40 14 Claims



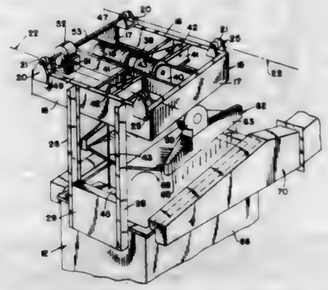
1. In combination, a ventilating panel and a support member for supporting an edge portion of said panel in a horizontal plane, the support member being provided with an aperture in the area thereof designed to support said panel edge portion, said supported panel edge portion being provided with a passageway extending from one surface thereof to the opposite surface thereof, said panel being adapted to be supported by said support member in horizontally adjustable engagement, whereby movement of said panel with respect to said support member brings said passageway into or out of register with said aperture to control the flow of air through said pasageway and said aperture.

3,444,801
AIR DIFFUSER ASSEMBLY
Robert R. Lambert, Glendora, Calif., assignor to Air Factors, Inc. Covina, Calif., a corporation of California
Filed Dec. 22, 1967, Ser. No. 692,883
Int. Cl. F24f 7/04, 13/06; F16b 2/00
U.S. Cl. 98—40 10 Claims



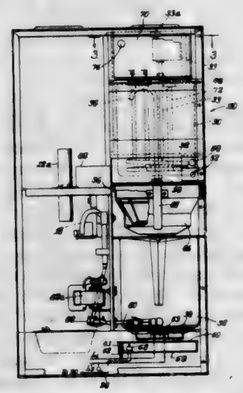
A pair of suspended ceiling air diffuser T-bar elements are assembled in spaced relation by pairs of oppositely opening channel-like spacer members with edge flanges received in opposed grooves formed adjacent inner wall surfaces of the T-bar members with resilient pad means positioned between the spacer member web portions for normally resiliently holding the spacer members in operative spaced relation assembled to and engaged with the recesses of the ceiling elements and being deformable during assembly or disassembly of the spacer members to the ceiling elements to facilitate assembly or disassembly of the apparatus. A weir member is positioned on the spacer members with end portions thereof in frictional engagement with the resilient pad means positioned at either end thereof on associated spacer means to yieldably retain the weir means in selectable positions of adjustment between the ceiling diffuser T-bars.

3,444,802
FORCED AIR CURTAIN WALL FOR HOIST AND AUXILIARY EQUIPMENT
James Barton, Grosse Pointe Woods, Mich., assignor to Ionic International, Inc., Warren, Mich., a corporation of Michigan
Filed Feb. 23, 1967, Ser. No. 617,873
Int. Cl. F23j 11/12; F24f 9/00
U.S. Cl. 98—115 11 Claims



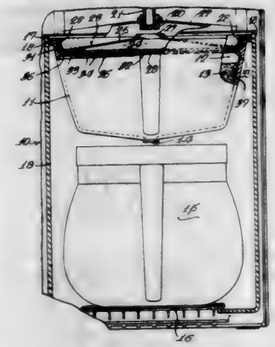
A work transfer hoist, as supported by an overhead track system, horizontally traverses and successively lowers work borne by the hoist into a series of treating tanks; and the hoist is equipped with a pair of motor driven forced air blowers, which are spaced longitudinally from one another in the direction of traverse and are elongated transversely of that direction at the bottom discharge throats of the blowers. These blowers direct intense air streams downwardly approximately in the vertical zones of the end walls of the tank, thus providing air curtains in those zones to prevent the escape of corrosive, harmful or obnoxious fumes into the area of the installation external of the tank, particularly as the work is elevated out of the latter. The fumes are driven downwardly toward the intake of the usual end wall suction hoods with which the tank is equipped; and the sides of the hoist paralleling the direction of traverse have confining plates to prevent mechanically the escape of the fumes in the transverse directions.

3,444,803
BEVERAGE BREWER AND DISPENSER
Harvey R. Karlen, Chicago, Ill., assignor to Cory Corporation, a corporation of Delaware
Filed July 7, 1967, Ser. No. 651,812
Int. Cl. A47j 31/047, 31/00, 31/057
U.S. Cl. 99—285 11 Claims



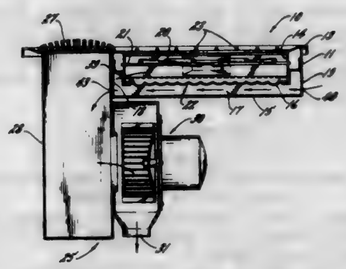
A device for manually brewing a batch of beverage, storing the batch, and dispensing the batch in separate servings by individual manual call. The berwing means includes a manually removably mounted cartridge for containing brewing ingredients which may be readily removed, cleaned, refilled and reinstalled in the device for making a subsequent batch of the beverage. The dispensing means includes a coin operated means for controlling the dispensing of the individual servings.

3,444,804
COFFEE BREWER DISTRIBUTOR
Casimir J. Stozek, Roselle, Ill., assignor to Cory Corporation, a corporation of Delaware
Filed July 26, 1967, Ser. No. 656,131
Int. Cl. A47j 31/30
U.S. Cl. 99—302 15 Claims



A structure for effecting a substantially uniform transverse distribution of hot water to a coffee brewing cartridge from a hot water supply delivering the water in the form of a stream. The distribution means includes a pressure chamber structure which effects an improved positive flow of the hot water in a uniform distribution into the brewing chamber. The brewed coffee is delivered from the brewing chamber downwardly to a subjacent decanter for serving.

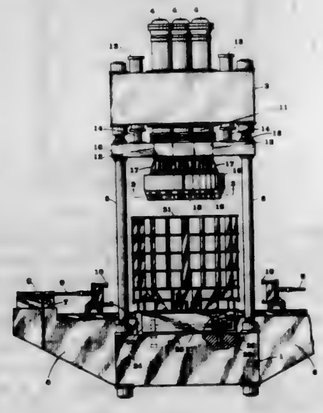
3,444,805
METHOD OF AN AIR COOLED APPARATUS FOR THE OPEN AIR COOKING OF EDIBLES
Hermann E. Happel, Indianapolis, and Laurence J. Mitter, Carmel, Ind., assignors to Jenn-Air Corporation, Indianapolis, Ind., a corporation of Indiana
Filed Apr. 4, 1967, Ser. No. 628,499
Int. Cl. A47j 27/58; F24c 15/14
U.S. Cl. 99—340 10 Claims



A method of exposed surface broiling and grilling of edibles and an electric cooking apparatus of the surface broiler type, having a drain surface underlying the food

supporting grill and the heating element for draining off the grease and fat drippings from cooking. To allow a high temperature heating element to be used without overheating the entire cooking apparatus and creating a fire hazard, and to reduce the possibility of the grease and fat drippings from igniting into a flash fire, an air conduit is provided adjacent to the drain surface and when the heating element is energized for cooking, cool air from the atmosphere is continuously drawn through this conduit resulting in a significant reduction in the operating temperature of the drain surface and adjoining structure.

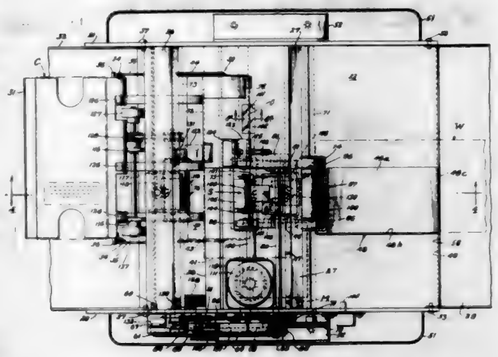
3,444,806
APPARATUS FOR PRESSING SCRAP
Saburoji Ozeki, Kenji Kimura, and Soichi Shimasaki, Tokyo, and Torao Izuhara, Osamu Kadota, and Kozi Sakurai, Yokohamashi, Japan, assignors to Nippon Kokan Kabushiki Kaisha, Tokyo, Japan
Filed July 6, 1967, Ser. No. 651,523
Claims priority, application Japan, July 9, 1966, 41/44,397
Int. Cl. B41f *5/02, 13/24, 3/20*
U.S. Cl. 100—229 **10 Claims**



A scrap pressing apparatus in which scrap is compressed to form a body of scrap having a predetermined density suitable for subsequent operations on the body of scrap. The apparatus has a lower base means over which is situated a container which has an open top and in which is located the scrap which is to be compressed. An upper frame means is located over the base means while a mounting means mounts the upper frame means over the lower base means at a given elevation thereabove. A plurality of ram means are carried by the upper frame means, and a plurality of tamping means are respectively carried by the plurality of ram means to be reciprocated by the latter downwardly into and upwardly out of the container to compress the scrap therein into a scrap body of given density.

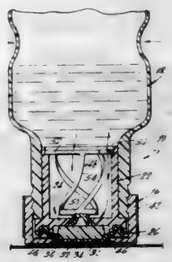
3,444,807
DRIVE MEANS FOR DUPLICATING APPARATUS USING MASTER CARDS
George Kooch, Philadelphia, Pa., assignor to Scriptomatic, Inc., Philadelphia, Pa., a corporation of Delaware
Filed May 4, 1966, Ser. No. 547,634
Int. Cl. B41l *47/46*
U.S. Cl. 101—53 **5 Claims**

Duplicating apparatus utilizing the hectograph process for transferring printed matter from a master card to a work piece in which the initial feed of a work piece into the machine actuates the feed mechanism for feeding the master card. Two separate clutches are provided in the drive mechanism for feeding the master card, the first of



which is caused to become engaged upon entry of a work piece into the machine, and through an adjustable time delay actuates the second clutch which initiates the feed of the master card.

3,444,808
STAMPING DEVICE
Gilbert Schwartzman, 20 Wilmot Circle, Scarsdale, N.Y. 10583
Filed Apr. 26, 1967, Ser. No. 633,889
Int. Cl. B41l *27/26;* **B65d** *45/00*
U.S. Cl. 101—125 **8 Claims**



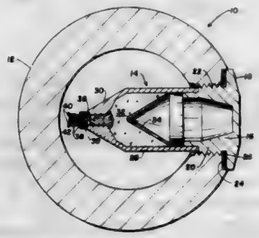
A stamping device comprising a squeeze container having an applicator disposed in its neck. The applicator has a web provided with a valve opening therethrough. A valve member is disposed in the opening and engages the web for closing the opening. A retainer ring provided with a fabric cover forms part of the applicator. A duplicating stencil is disposed over said cover and a cap having an opening therethrough is secured to said container with said cover at least under slight compression so that at least a portion of said stencil sheet protrudes beyond said cap.

This invention relates to a stamping device and has for an object the provision of means for controlling flow of ink or other duplicating fluid from a squeeze container to a stencil sheet in a manner to insure optimum reproduction of the stencilled material, and in which the stencil sheet is readily replaceable.

3,444,809
REPRODUCTION PROCESS
Kinji Ohkubo and Junpei Noguchi, Kanagawa, Japan, assignors to Fuji Shashin Film Kabushiki Kaisha, Kanagawa, Japan, a corporation of Japan
No Drawing. Filed June 3, 1966, Ser. No. 555,005
Claims priority, application Japan, June 5, 1965, 40/32,943
Int. Cl. B41m *7/00*
U.S. Cl. 101—470 **9 Claims**

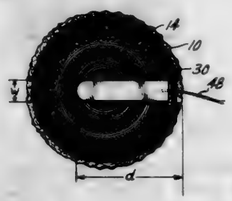
Reproduction of an original onto a large number of copy sheets by forming on a support an oil latent image which is a reflected image of the original. This oil latent image is developed with a thermoadhesive powder. The thermoadhesive powder image is then heated and transferred to an image receiving sheet where it is developed by a developing powder.

3,444,810
METHOD AND APPARATUS FOR LOADING A WELL PERFORATOR
John R. Hakala, Fort Worth, Tex., assignor to Harrison Jet Guns, Inc., Houston, Tex., a corporation of Texas
Continuation-in-part of application Ser. No. 461,941, June 7, 1965. This application Sept. 8, 1967, Ser. No. 666,315
Int. Cl. E21b *43/26;* **F42c** *3/00*
U.S. Cl. 102—20 **10 Claims**



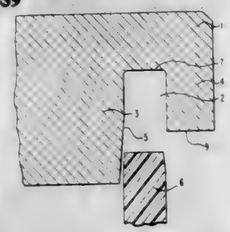
A perforating gun including an elongated barrel, with threaded ports in the wall thereof, receives an elongated fuse extending the length of the barrel. A shaped charge unit for each of the ports includes an integral threaded port closure member and a rotatable clamp on the end opposite the closure member to engage the fuse while permitting the charge to be inserted into the port and the closure member to be screwed into sealing engagement with said barrel.

3,444,811
TREE FELLING TECHNIQUE AND SHAPED EXPLOSIVE CHARGE EMPLOYED THEREIN
Albert F. Abbott and Bruce J. Haskin, Seattle, and Marshall E. Klopich, Renton, Wash., assignors to Explosives Corporation of America, Seattle, Wash., a corporation of Washington
Filed Aug. 28, 1967, Ser. No. 663,643
Int. Cl. F42d *1/00*
U.S. Cl. 102—23 **21 Claims**



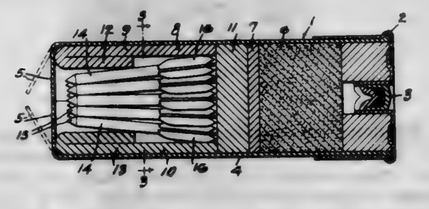
An improved method and shaped explosive charge for felling trees, which method comprises cutting a thin, flat pocket radially into the tree to be felled, preferably by making a thrust cut into the tree with a chain saw, inserting a shaped explosive charge into the pocket, and thereafter detonating the charge. The shaped explosive charge comprises a generally elongated, thin, flat container defined by a pair of parallel, planar side walls and a concavely-shaped, outwardly facing peripheral edge wall which functions to concentrate and direct the explosive shock wave cross-grain of the tree.

3,444,812
CARTRIDGE
Heinz Gawlick and Rudolf Stahlmann, Furth, and Hans Umbach, Stadeln, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany
Filed Dec. 23, 1966, Ser. No. 604,329
Int. Cl. F42b *5/20*
U.S. Cl. 102—39 **3 Claims**



The present invention relates to a cartridge, particularly a propellant cartridge used in commercial implements, for example, cattle stunning apparatus and bolt setting or driving equipment. The cartridge case is inserted into an annular channel in the bottom piece with a force fit. The width of the channel is at least 2% smaller than the inserted wall thickness of the cartridge case. Preferably, the inside diameter of the channel is at least 2% larger than the inside diameter of the cartridge case so that the cartridge case expands during the force fit and the inside channel wall is tapered to form a cam surface to facilitate the assembly. Additionally, an even tighter fit is obtained with either a plurality of spaced deformations or a single annular deformation of the outside channel wall into the cartridge case wall. Specifically, particular advantages are obtained with a synthetic polymer cylindrical cartridge case and a metallic bottom piece.

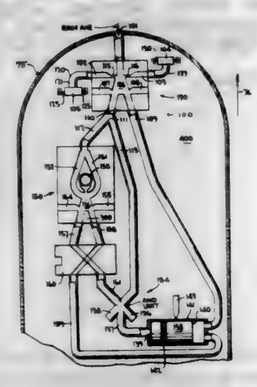
3,444,813
CARRIER FOR FIN STABILIZED PROJECTILES
John R. Bird, Belmont, Mass., assignor to the United States of America as represented by the Secretary of the Army
Filed Mar. 16, 1954, Ser. No. 416,729
Int. Cl. F42b *13/48, 9/16*
U.S. Cl. 102—42 **14 Claims**



1. A canister cartridge comprising a casing having a closed rear end, a base fitting said casing to confine a propellent charge in said rear end, first and second discrete semi-cylindrical sections fitting said casing and abutting said base, a frusto-conical shaped cluster of finned missiles fitting within the chamber jointly formed by said sections, said sections having inwardly thickened portions

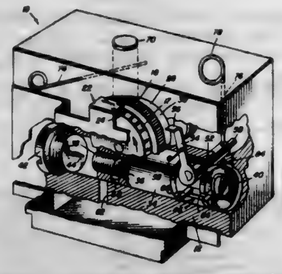
jointly defining an internal circumferential band encircling and confining said missiles forwardly of the fins thereof to form said frusto-conical cluster.

3,444,814
ACCELERATION-SENSITIVE FLUID ACTUATOR
Raymond W. Warren, McLean, Va., assignor to the United States of America as represented by the Secretary of the Army
Filed Feb. 23, 1967, Ser. No. 619,125
Int. Cl. F42c *5/00, 15/32*
U.S. Cl. 102—81 11 Claims



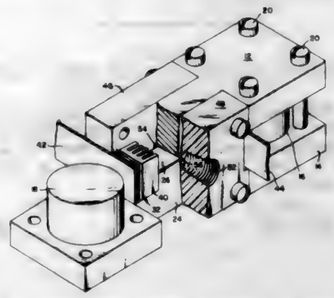
Acceleration-sensitive control means are placed in an explosive projectile and control a pure fluid circuit therein. Depending on whether the projectile undergoes an acceleration or deacceleration the acceleration sensitive control means will direct the pure fluid circuit to either arm or disarm the projectile.

3,444,815
CANISTER TIMER FOR MECHANICAL TIME FUSE
Clarence R. Yeagley, Lancaster, Pa., assignor to Hamilton Watch Company, Lancaster, Pa., a corporation of Pennsylvania
Filed July 20, 1967, Ser. No. 654,821
Int. Cl. F42c *9/04*
U.S. Cl. 102—83 8 Claims



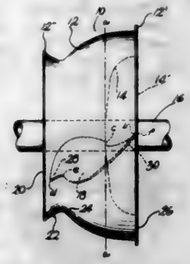
The time fuse comprises a clock mechanism driving a cam having a lever in following engagement therewith, the lever being mounted on a rotatable shaft. A cylindrical plunger having ignition material disposed in a cavity in the end of the plunger is spring biased for sliding movement from a cocked position to a firing position. The rotatable shaft engages in a reduced diameter portion of the plunger to retain the latter in the cocked position. The rotatable shaft has a cut-out portion which registers with the plunger to release the same in response to a predetermined rotation of the shaft, such rotation being controlled by the cam and lever arrangement. The cavity in the plunger housing the ignition material has a lateral bore which registers with a blow hole only when the plunger slides into the firing position. A safe wire having a reduced diameter portion prevents rotation of the shaft to the plunger release position.

3,444,816
ELECTROMAGNETIC LIQUID PUMP
Harry J. King, Canoga Park, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Sept. 5, 1967, Ser. No. 665,382
Int. Cl. F04b *19/00*; H02k *45/00*
U.S. Cl. 103—1 10 Claims



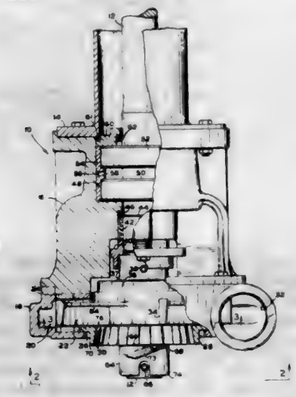
The electromagnetic pump produces a magnetic field in a first direction across a gap filled with electrically conductive liquid and has electrodes which cause electric current to flow through the liquid in the gap at right angles to the direction of the magnetic field to thus cause pressure and/or flow of the liquid in a direction normal to both the magnetic and electric fields. Through the use of a narrow gap in the direction of the magnetic field, a high magnetic field strength can be accomplished with magnets or magnetic coils of reasonable size. This produces a liquid space which is of small cross-sectional area in the direction perpendicular to current flow to thus produce a relatively high electrical resistance in the liquid to produce a pump which employs a relatively low electric current to produce a high fluid head.

3,444,817
FLUID PUMP
William J. Caldwell, Kansas City, Mo.
(P.O. Box 456, Independence, Mo. 64051)
Filed Aug. 23, 1967, Ser. No. 662,615
Int. Cl. F04d *13/12, 29/30*
U.S. Cl. 103—88 1 Claim



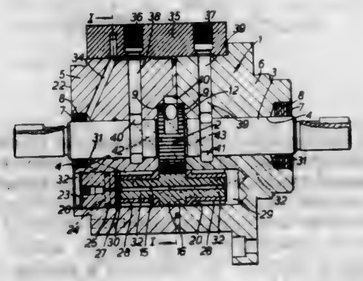
The invention relates to a fluid pump having an axial intake and an axial discharge and having a series of continuous vanes which may be of complex surface configuration, the leading end of each vane having an angular portion providing an axial impeller flow zone which merges downstream into a radially expanding, axially extending screw surface defining an axial screw flow zone, terminating in a trailing end having straight, forward or backward (rotationwise) curvature for determining the fluid delivery pattern, there being a centrifugal flow zone imposed upon the screw flow zone. The working surface of each vane is mounted on and has unitary movement with two rotating members mounted for rotation about a common axis, the radially opposed surfaces of the members having sealing relation with the longtudinal edges of each vane.

3,444,818
CENTRIFUGAL PUMP
Robert W. Sutton, Rte. 1, Box 668, Wilsonville, Oreg. 97070
Filed Oct. 10, 1966, Ser. No. 585,535
Int. Cl. F04d *29/00, 1/04*; B02c *18/40*
U.S. Cl. 103—111 5 Claims



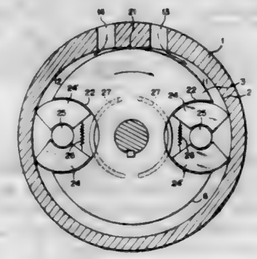
A centrifugal pump for pumping mixtures of solids and liquids including a housing defining an intake passage with annular inner and outer serrated cutting edges. Rotating blades of a chopper outside the housing coact with the outer serrated edge to shred incoming solids to a size sufficient to prevent clogging the intake passage, and radial cutting edges of impeller blades within the housing coact with the inner serrated edges to further reduce the size of solids to permit their passage through the pump. Inclined leading edges on the impeller blades direct solids toward the blade cutting edges.

3,444,819
HYDRAULIC MOTORS AND PUMPS
Colin Darwent, Benhall, England, assignor to Teleboist Limited, Cheltenham, England
Filed May 8, 1967, Ser. No. 636,994
Claims priority, application Great Britain, July 16, 1966, 32,063/66
Int. Cl. F04c *1/02*
U.S. Cl. 103—125 9 Claims



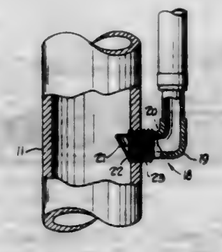
The application relates to hydraulic motors or pumps of the type in which a stator houses a rotor the periphery of which is of cut-away form to provide pressure reaction surfaces and at least one rotatable sealing member which is disposed at the periphery of and turns with the rotor for sealing engagement with the cut-away portion of the latter. The motor or pump has a stator split into two portions for assembly axially around the rotor but with each sealing member bore extending through to the end of one of the stator portions at which end it is blanked off by a closure plug.

3,444,820
MACHINE USABLE AS A ROTARY PUMP OR A HEAT ENGINE
Seiji Yamane, 26—1, Hatanodai 5-chome, Shinagawa-ku, Tokyo, Japan
Filed May 17, 1967, Ser. No. 639,126
Claims priority, application Japan, May 19, 1966, 41/31,488
Int. Cl. F04c *1/02*
U.S. Cl. 103—140 1 Claim



In a rotary machine such as rotary pump in which a disc-shaped rotor rotates in continuous contact with at least one portion of the inner surface of a casing, there is provided at least one contact member serving as a sealing member between an inlet chamber and an outlet chamber. The fluid pressure in the outlet chamber is added to the biasing force of a spring for improving the sealing performance.

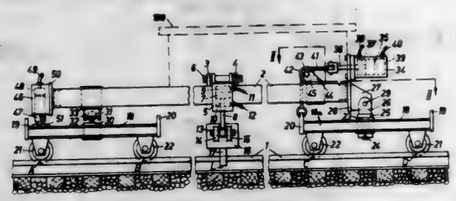
3,444,821
AIR-INJECTOR MEANS FOR AIR-LIFT WATER PUMPS FOR REMOVING SCUM OR SLUDGE FROM SEWAGE TREATMENT SETTLING TANKS
Bernard B. Wolsh, 2350 Fernwood Road, University Heights, Ohio 44118
Filed Aug. 9, 1967, Ser. No. 659,487
Int. Cl. F04f *1/18*
U.S. Cl. 103—263 1 Claim



Air-injector means for air-lift pumps, providing unrestricted upward air flow, having an air reflector wall

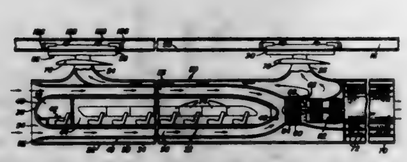
lying entirely within the projected circumference of its mounting hole in the wall of the exhaust side of the pump.

3,444,822
TRACKWORK MACHINES FOR RAILROAD TRACKS AND IMPROVED METHOD OF OPERATING SAME
Eugène Oville, Lausanne, and Gérard Sauterel, Pully, Switzerland, assignors to Matisa Materiel Industriel S.A., Lausanne, Switzerland, a corporation of Switzerland
Filed May 2, 1966, Ser. No. 546,680
Claims priority, application Switzerland, May 10, 1965, 6,531/65
Int. Cl. E01b *27/00, 29/00, 31/00*
U.S. Cl. 104—8 **20 Claims**



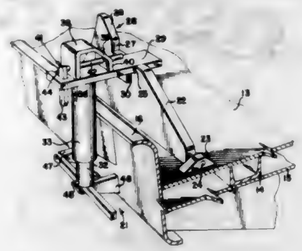
A trackwork machine for railroad tracks incorporating two frame units which are articulated to one another, with such frame units bearing upon the railroad track at least at three axially spaced locations. At least one of such frame units carries tool means at a location intermediate the outermost bearing locations of such frame units upon the railroad track, and means are provided for applying a force to at least one of said frame units to cause said frame units to arch in order to selectively relieve the bearing pressure exerted upon the railroad track at least at the bearing location in the neighborhood of the aforesaid tool means. The invention also pertains to an improved method of operating such trackwork machine wherein there is applied a force to at least one of the articulated frame units in order to cause the aforesaid frame units to arch so as to selectively relieve the bearing pressure in the manner explained above.

3,444,823
SUSPENDED WHEELED VEHICLE HAVING AUXILIARY AIR CUSHION AND AIRFOIL RUNNING GEAR
Cyril Akmentin, 136 Minnechaug Drive, Glastonbury, Conn. 06033
Filed Nov. 15, 1966, Ser. No. 594,576
Int. Cl. B60v *3/04;* **B61c** *11/06;* **B61b** *13/04*
U.S. Cl. 105—64 **9 Claims**



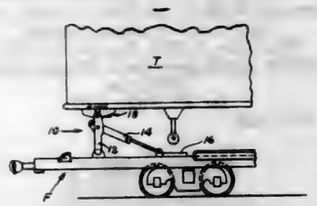
This disclosure pertains to a suspended vehicle including a jet engine providing the motive force for the vehicle and including the usual air compressing stage from which quantities of air under pressure are bled and utilized to support the weight of the vehicle from its supporting monorail structure by means of an air cushion, movement of the vehicle along its supporting rail structure being guided by more positive means but also assisted by said air cushion.

3,444,824
MOUNTING ARRANGEMENT FOR DEMOUNTABLE CONTAINERS ON RAILWAY CARS
Jack E. Gutridge, Dyer, Ind., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed Aug. 23, 1967, Ser. No. 662,825
Int. Cl. B65j *1/22*
U.S. Cl. 105—366 **8 Claims**



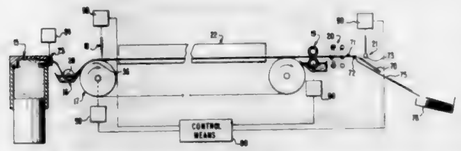
A railway car having upstanding side sills providing tire guides for highway trailers carried thereon includes container mounting brackets which are movable from a rest position to an erect operative position wherein they coact with the four corner brackets of a container carried on the car. The brackets include supporting beams which cooperate with the upstanding side sills of the car and which may be disposed in a non-used or rest position lying flat on the deck of the car so as to permit loading and unloading of trailers with the mounting brackets providing a minimum obstruction relative to the rolling of the wheels.

3,444,825
AUDIBLE SIGNAL MEANS FOR TRAILER HITCHES ON RAILWAY CARS
Dallas W. Rollins, St. Charles, Mo., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Feb. 13, 1967, Ser. No. 615,611
Int. Cl. B65j *1/22;* **B60q** *5/00*
U.S. Cl. 105—368 **1 Claim**



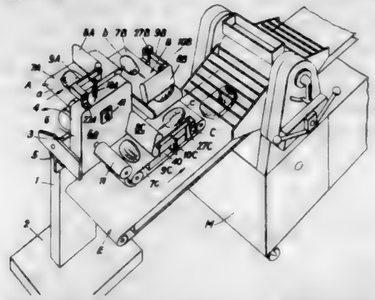
An audible signal device indicates the positive locking of a trailer kingpin on a railway flat car when the kingpin is engaged by the jaws of a trailer hitch mounting plate. The audible signal device is operatively connected to latch means and operable upon movement of the latch means to locked position to emit an audible signal to the tractor operator for indicating a positive locking of the kingpin and a positive securing of a trailer on a railway flat car for transit.

3,444,826
METHOD AND APPARATUS FOR MAKING A BAKED EDIBLE TUBULAR PRODUCT
Wilhelm A. Seeder, Aerdenhout, and Franciscus H. van Zijl, Zaandam, Netherlands, assignors to Koninklijke Vekade Fabrieken N.V., Zaandam, Noord Holland, Netherlands, a limited-liability company of the Netherlands
Filed Mar. 29, 1967, Ser. No. 626,778
Int. Cl. A21c *3/04, 11/10*
U.S. Cl. 107—4 **9 Claims**



An alimentary dough having a water insoluble ingredient is extruded through heated nozzles to form tubes; the tubes are partially cut at predetermined locations to form steam vents and to produce weakened sections; the tubes are then baked and the baked tubes are broken by pressure action at the cuts to form the product; coloring material may be applied; flavoring and gloss coating material may be applied.

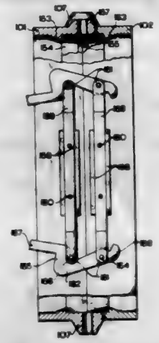
3,444,827
DOUGH FORMING DEVICE
Willy Chapuis and Willy Kuhner, Burgdorf, Switzerland, assignors to Gustave A. Seewar, Burgdorf, Bern, Switzerland
Filed May 5, 1967, Ser. No. 636,299
Claims priority, application Switzerland, May 6, 1966, 6,585/66
Int. Cl. A21c *3/00*
U.S. Cl. 107—9 **4 Claims**



A dough forming device in which each unit of a series of forming units comprising a conveyor with an endless belt and a forming plate extending transversely over same from a supporting arm loaded by a spring. In each unit the piece of dough is at first slightly upset when it encounters the forming plate, then lifts same and, as it passes beneath same, is slightly rolled in.

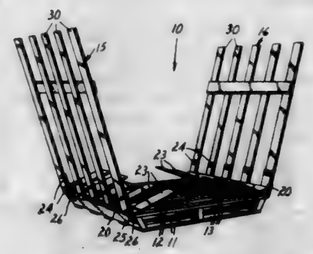
3,444,828
MOULD FRAME
Roland Hörnlein, Schwabisch Gmund, and Gerold Domhan, Waldstetten, Kreis Schwabisch Gmund, Germany, assignors to Walter Hornlein Metallwarenfabrik KG., Schwabisch Gmund, Germany
Filed Oct. 19, 1965, Ser. No. 497,728
Claims priority, application Germany, May 29, 1965, H 56,181, H 56,182
Int. Cl. A23g *1/22*
U.S. Cl. 107—19 **9 Claims**

A mould frame, especially of the type including two frame halves hinged together, for use in the production of figures from chocolate or the like, wherein elastic bars are provided on each mould frame, each bar being secured, at least at the central portion thereof, to a frame half and having at least one free end which may be



elastically connected to a corresponding bar on the opposite frame half by suitable connecting means, whereby the two frame halves are resiliently pressed together in the closed condition.

3,444,829
PALLET CONSTRUCTION
Orlan H. Mork, 6705 Southdale Road, Edina, Minn. 55435
Filed Jan. 15, 1968, Ser. No. 698,043
Int. Cl. B65d *19/38*
U.S. Cl. 108—53 **4 Claims**

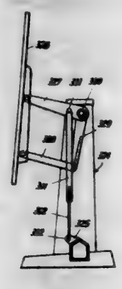


A pallet having generally L-shaped side members pivotally attached to two opposite sides thereof each having one arm extending generally upwardly and the other arm extending inwardly to overlie a portion of the upper surface of the pallet and means attached to the side members for limiting the pivotal movement thereof so that with no load on the pallet the side members pivot outwardly a sufficient distance to allow a plurality of pallets to be stacked up in nesting relationship. Upon piling a load on the pallet the side members are pivoted inwardly by the weight of the load and form substantially upright side members so that loaded pallets can be stored in side-by-side relationship.

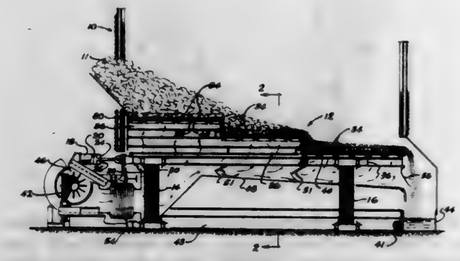
3,444,830
ADJUSTABLE GAS SPRING SUPPORTED DRAWING TABLE
Hans Peter Doetsch, Altdrossenfeld, Germany, assignor to Stabilus Industrie-und Handelsgesellschaft m.b.H., Koblenz-Neuendorf, Germany
Filed Dec. 12, 1966, Ser. No. 601,153
Claims priority, application Germany, Dec. 10, 1965, N 18,198; Apr. 27, 1966, St 25,286
Int. Cl. A47b *9/02;* **F16f** *13/00, 9/02*
U.S. Cl. 108—136 **11 Claims**

A gas spring for a drawing table which has a cylinder, a piston in the cylinder, and a piston rod projecting from

the piston through one end wall of the cylinder, the other end wall being imperforate. Gas under pressure fills the cylinder and may be released from the chamber adjacent the piston rod if the latter is almost fully expelled from the cylinder against a compression spring through a channel having orifices in the piston and in the piston rod. Additional gas is admitted to the cylinder of a modified spring when the piston rod is almost fully retracted into the cylinder and the piston strikes a normally closed valve separating the cylinder cavity from a storage chamber.



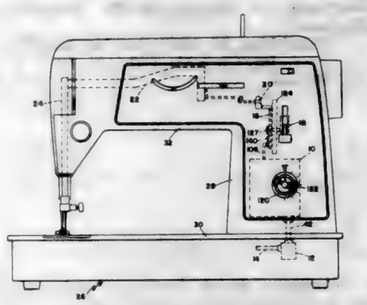
3,444,831
FURNACE GRATE AND AIR SUPPLY THEREFOR
David R. Pearl, West Hartford, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Aug. 24, 1967, Ser. No. 663,130
Int. Cl. F23b *1/22*; F23h *11/00*; F23g *5/00*
U.S. Cl. 110—33 4 Claims



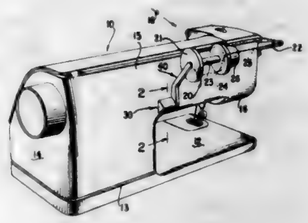
An incinerator furnace for burning refuse having an inertial grate for causing the burning refuse to move from the inlet end to the ash discharge end of the grate. The grate is mounted on leaf springs, and a motor pulls the grate towards its inlet end and releases it suddenly so that the action of the leaf spring causes it to move toward its original position until it comes into contact with a stop member. The inertia of the burning refuse moves it along the grate. The grate plates are held in place on a support member by a hooking arrangement to prevent them from being jarred out of place. The air duct for supplying underfire air is integral with the grate so that ash particles falling thereinto will also be moved towards the discharge end of the grate.

3,444,832
INTEGRAL BUTTONHOLING MECHANISM
George I. Gray, 962 Ednabelle Court, El Cajon, Calif. 92021
Filed July 31, 1967, Ser. No. 657,355
Int. Cl. D05b *3/02*, *3/06*
U.S. Cl. 112—158 7 Claims

The buttonholing mechanism is incorporated into a conventional type of zig-zag sewing machine and controls the action of the existing forward and reverse feed and the lateral needle motion in a set sequence to operate the machine automatically through a complete buttonhole cycle, without any changes in control settings once the cycle is started. The buttonhole produced is round ended and the stitch width and spacing are constant as preset to suit the specific buttonhole, regardless of the length of the buttonhole, which is also preselected.



3,444,833
FOLD-AWAY SPOOL HOLDER FOR A SEWING MACHINE
John Blackwood, Linden, George D. La Police, Somerville, and Joseph G. Rakacs, Cranford, N.J., assignors to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Mar. 27, 1967, Ser. No. 626,278
Int. Cl. D05b *43/00*; B65h *75/00*
U.S. Cl. 112—218 5 Claims



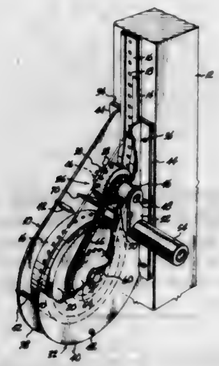
A spool holder for a sewing machine rotatable into an exposed position when the machine is to be operated and into a stored position in a cavity in the sewing machine when the machine is to be stored or moved.

3,444,834
BATTEN POCKET FOR SAILBOAT SAILS
Donald L. Bever and John W. Bennett, San Diego, Calif., assignors to North Sails
Filed Apr. 18, 1968, Ser. No. 722,354
Int. Cl. B63h *9/06*
U.S. Cl. 114—102 2 Claims



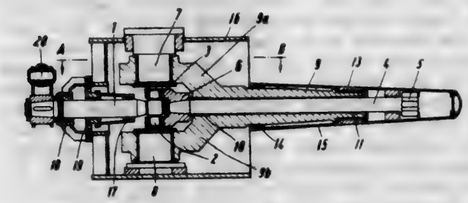
A pocket to retain battens on the sails of sailboats is provided with a transverse batten entry slot and elastic means to prevent loss of batten through the slot.

3,444,835
POSITIVE MOTION EXTENDABLE AND RETRACTABLE STRIP ACTUATOR AND/OR SUPPORT
Alvin I. Meyersahm, 8805 SE. 39th, Mercer Island, Wash. 98040, and William F. Rehmke, 14915 28th SW., Seattle, Wash. 98166
Filed Jan. 10, 1968, Ser. No. 696,891
Int. Cl. B63h *9/08*
U.S. Cl. 114—112 3 Claims



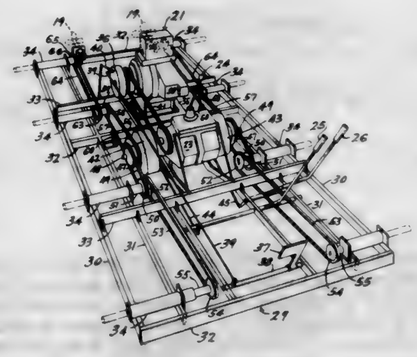
An action strip is moved along a partially encompassing guiding track by a powered transmission which positively engages portions of the action strip as portions move by the transmission. The end structure of the action strip is removably secured to whatever is to be moved positively on the track. Preferably, upon retraction, the action strip is coiled around an active storage drum after leaving the powered transmission. Where necessary, the active storage drum is also powered at selected speed ratios which match the roll up and take off action strip speeds with the action strip speed occurring at the powered transmission. A preferred embodiment of this positive motion extendable and retractable action strip actuator and/or support is adapted to raise, hold, and lower sails on a sailboat.

3,444,836
APPARATUS FOR CONTROLLING ROLLING OF WATERCRAFT
Willy Rieprich, Grosshansdorf, Germany, assignor to Blohn & Voss A.G., Hamburg-Steinwerder, Germany
Filed Jan. 17, 1968, Ser. No. 698,482
Claims priority, application Germany, Jan. 24, 1967, B 90,877
Int. Cl. B63b *43/04*, *39/06*
U.S. Cl. 114—126 11 Claims



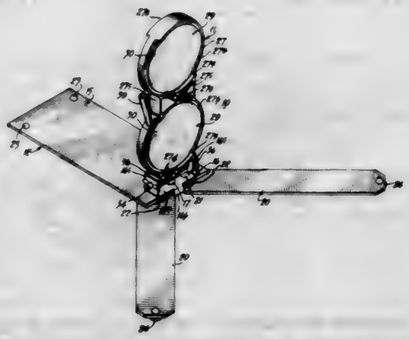
The bilge keels in a watercraft are rotatable on sleeves each of which has an end portion rotatable in a housing provided at one side of the hull to move with the respective keel between an extended and a retracted position so as to respectively extend laterally from and to be accommodated in the housing. The keels are turnable with reference to their sleeves to and from a neutral position and the drive which effects such movements of keels is operated only when the respective sleeves assume their extended positions. Prior to moving with the sleeves to retracted positions, the keels must be moved to neutral positions.

3,444,837
UTILITY VEHICLE
William T. Donofrio, Toledo, Ohio, assignor to Donofrio & Company, Toledo, Ohio, a corporation of Ohio
Filed Sept. 18, 1967, Ser. No. 668,532
Int. Cl. B60f *3/00*
U.S. Cl. 115—1 3 Claims



An eight wheeled vehicle capable of traveling on dry land, in swamps and in deep water. The four wheels on each side of the vehicle are driven from a separate transmission. The inner two wheels on each side are vertically spaced at a level below the outer two wheels. Steering and braking is accomplished by locking either one or both of the transmissions.

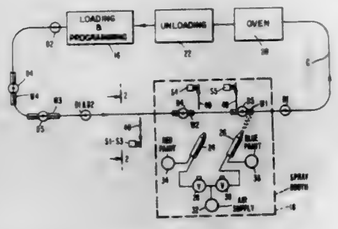
3,444,838
HIGHWAY WARNING SIGNAL
George T. Harkins, Wichita, Kans., assignor to Miro-Flex Company, Inc., Wichita, Kans., a corporation of Kansas
Filed Dec. 15, 1965, Ser. No. 513,928
Int. Cl. E01f *9/04*
U.S. Cl. 116—63 4 Claims



A signal flare for highway use and the like includes a base and a pair of support legs, with a hinged support

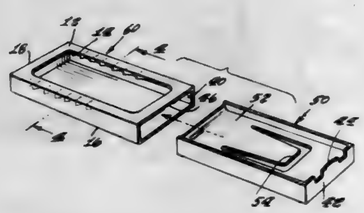
yoke carrying a pair of axially spaced apart reflecting lenses having reflecting surfaces on their confronting faces. The yoke is hermetically sealed to close the space between the lenses.

3, 444,839
AUTOMATIC SPRAY PAINTING MACHINE
Joseph M. Ellul, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Dec. 27, 1965, Ser. No. 516,438
Int. Cl. B05c *11/14, 11/10;* G05b *19/00*
U.S. Cl. 118—2 14 Claims



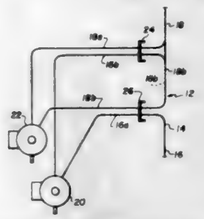
A paint spraying system has a conveyor line for carrying different sized workpieces through a spray booth past a plurality of sprayers. Each sprayer is selectively operated in accordance with a program element carried by the conveyor in conjunction with each workpiece to be operated upon. Operation of the sprayers is controlled by a series of timers each designed so that, when conditioned and activated, it will operate the selected sprayer for a different predetermined period of time. The workpieces are arranged on the conveyor in different series whereby the workpieces in each series are to be sprayed for the same period of time. Program elements are arranged on either end of each series so as to selectively condition and de-condition the timer that operates the sprayer for the desired period. Additional program elements are mounted on the conveyor next to each workpiece to be sprayed for selectively activating the conditioned timer and sprayer.

3,444,840
POSTAGE STAMP DISPENSER
Frank De Marco, Newburgh, N.Y.
(199 Springdale Ave., Meriden, Conn. 06450)
Filed Nov. 22, 1965, Ser. No. 509,126
Int. Cl. B05c *1/02*
U.S. Cl. 118—236 1 Claim



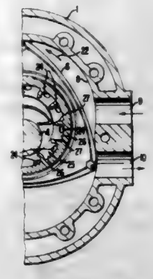
A dispenser for stamps in the form of a flat elongated container slightly larger than the usual stamp dimension having an open cavity for the reception of stamps which are dispensed through a slot in an end wall by means of thumb or finger pressure.

3,444,841
VAPOR GENERATOR SEAL ARRANGEMENT
Jacob Cooper, Livingston, and Carl E. Corbett, Westfield, N.J., assignors to Foster Wheeler Corporation, Livingston, N.J., a corporation of New York
Filed Oct. 11, 1967, Ser. No. 674,549
Int. Cl. F22b *37/06, 37/24*
U.S. Cl. 122—6 6 Claims



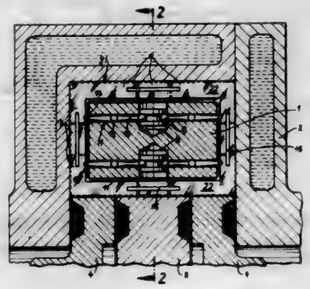
A seal arrangement for a pressurized wall of a vapor generator in which tubes penetrating the wall or entering the wall at an angle thereto pass through and are seal welded to a tube sheet or channel spaced from the wall, and seal plates extend between the channel and wall.

3,444,842
ROTARY PISTON INTERNAL COMBUSTION ENGINE
Wolf-Dieter Bensinger, Stuttgart-Riedenberg, and Karl-Walter Schmidt, Rommelshausen, Germany, assignors to Daimler-Benz Aktiengesellschaft, Stuttgart-Untertürkheim, Germany
Filed Oct. 3, 1967, Ser. No. 672,515
Claims priority, application Germany, Oct. 6, 1966, D 51,253
Int. Cl. F02b *55/04*
U.S. Cl. 123—8 20 Claims



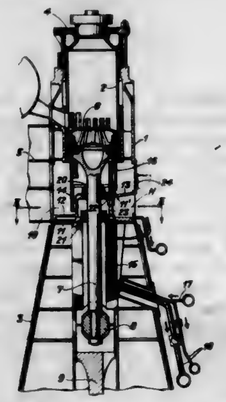
A rotary piston internal combustion engine particularly of trochoidal construction in which a piston is rotatably supported on the eccentric of an eccentric shaft so as to rotate relative to the eccentric and to the housing, and which includes drive mechanism spaces within the area of the hub of the piston on both sides thereof; the engine is further provided with an annular space open in the direction toward the respective drive mechanism space at one or both sides of the piston within the area of its hub, whereby each annular space is subdivided into several individual partial spaces by means of walls; the free ends of the walls subdividing the annular space into individual partial spaces extending approximately tangentially opposite the direction of rotation of the piston with the wall surfaces thereof trailing in relation to the direction of rotation of the piston; a collecting screen which is secured to the eccentric shaft, is arranged within the area of the associated end wall of the eccentric to collect the oil leaving the partial spaces, and in its turn, conducts the thus-collected oil substantially in the axial direction of the internal combustion engine out of the respective drive mechanism space.

3,444,843
ROTARY SEALING ELEMENT HAVING CENTRIFUGAL FORCE COMPENSATION
Huschang Sabet, Eduard-Pfeiffer Str. 67, 7 Stuttgart, Germany
Filed Nov. 16, 1967, Ser. No. 683,636
Claims priority, application Germany, Nov. 22, 1966, S 107,065
Int. Cl. F01c *19/04*
U.S. Cl. 123—8 5 Claims



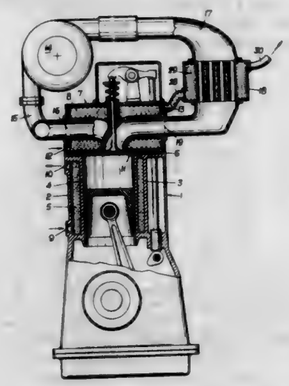
A sealing arrangement for a machine having at least one rotary part arranged to rotate adjacent at least one surface and at least one sealing element mounted on the rotary part to form a seal between the part and the surface, and means for at least partially counteracting the centrifugal forces to which the sealing element is subjected when the rotary part rotates, which means include at least one inertial member arranged to rotate with the rotary part and to be displaced in a radial direction under the influence of such centrifugal forces and at least one lever pivotal at an intermediate point along its length and operatively connected between the inertial part and the sealing element so that any centrifugal force to which the inertial member is subjected is converted by the lever into a counteracting force applied to the sealing element.

3,444,844
CROSSHEAD-TYPE INTERNAL COMBUSTION PISTON ENGINE HAVING LIQUID-COOLED PISTONS
Hans Hofmann, Zurich, Switzerland, assignor to Sulzer Brothers Limited, Winterthur, Switzerland
Filed Mar. 24, 1967, Ser. No. 625,812
Claims priority, application Switzerland, Mar. 31, 1966, 4,687/66
Int. Cl. F01p *3/10*
U.S. Cl. 123—41.36 1 Claim



There is disclosed an engine of the type set forth in the title in which the piston rod or rods and conduits for piston coolant pass through two spaced partitions disposed between the crosshead and the lower end of the engine cylinder or cylinders. Together these partitions close off the engine crankcase from the under side of the pistons, where compressed air for supercharging and/or scavenging may be generated or stored, and in addition they define a space closed off from both the crankcase and underside of the pistons but open to the exterior of the engine. Through this space there may be observed the portion of the piston rods and coolant conduits between the partitions and also the seals at which the piston rods and conduits pass through the partitions. For replacement of the seals in the upper partition an access door may be provided (e.g., at each cylinder if there are more than one) through the engine housing above the upper partition.

3,444,845
INTERNAL COMBUSTION ENGINE
Andreas Schelterlein, Graz, Austria, assignor to Hans List, Graz, Austria
Filed Feb. 3, 1967, Ser. No. 613,812
Claims priority, application Austria, Feb. 23, 1966, A 1,681/66
Int. Cl. F02b *29/04;* F01p *3/02*
U.S. Cl. 123—41.82 4 Claims

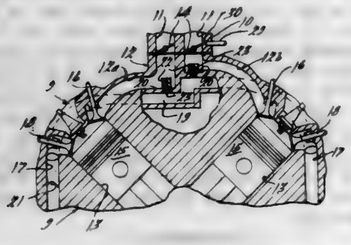


An exhaust turbosupercharged internal combustion engine is provided with two separate cooling-water systems. One system services the engine head and supercharger aftercooler whereas the other system services the engine block.

3,444,846
ENGINE EXHAUST RECIRCULATION
Jorma O. Sarto, Orchard Lake, and Paul G. Fouts, Jackson, Mich., assignors to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Apr. 24, 1967, Ser. No. 633,188
Int. Cl. F02m *25/06;* F02b *75/22*
U.S. Cl. 123—119 8 Claims

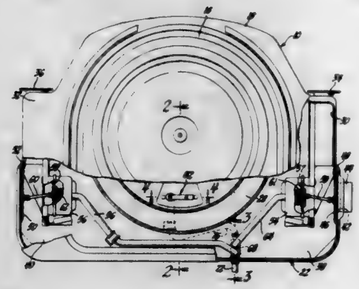
A restricted bypass duct connecting the fuel-air inlet header and exhaust header of an internal combustion engine extends in heat exchange relationship through the hot spot of the inlet header into the fuel-air induction conduit and terminates in a nozzle to direct combustion products against the throttle valve in a direction opposing the fuel-air flow and at a controlled rate responsive to pressure conditions in the headers and the restriction in the bypass duct, which may be variable in response to said pressure conditions, thereby to dilute the fuel-air inlet mixture with hot exhaust products and enhance vaporiza-

tion of fuel in said inlet mixture as well as to reduce throttle icing by heating the hot spot, inlet mixture, and throttle valve, and to reduce the formation of noxious



oxides of nitrogen in the exhaust by reducing the combustion temperature in consequence of dilution of the inlet mixture with the admixed combustion products.

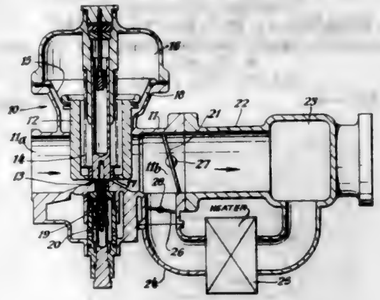
3,444,847
TEMPERATURE CONTROL ARRANGEMENT
Jack B. King, Royal Oak, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 29, 1966, Ser. No. 583,022
Int. Cl. F02m *31/06*; F16k *17/00*
U.S. Cl. 123—122 **5 Claims**



An internal combustion engine air cleaner and silencer assembly having a pair of inlets for air at ambient temperature is connected to a source of heated air. A primary valve controls the flow of heated air into the air cleaner and the flow of ambient air through one inlet. The primary valve is positioned by an induction vacuum operated motor; the vacuum sensed by this motor is varied by a thermostatically operated air bleed. A secondary valve, operated by a motor responsive solely to induction vacuum, controls the flow of ambient air through the other inlet.

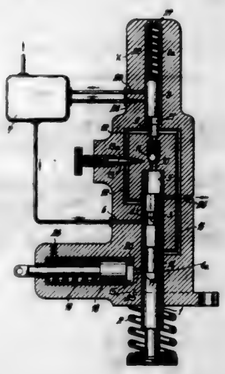
3,444,848
FUEL-AIR MIXTURE INTAKE SYSTEMS FOR INTERNAL COMBUSTION ENGINES
Geoffrey L. Lawrence, Stanmore, England, assignor to The Zenith Carburetter Company Limited, Stanmore, England
Filed Dec. 7, 1966, Ser. No. 599,874
Claims priority, application Great Britain, Dec. 15, 1965, 53,251/65
Int. Cl. F02m *3/04, 17/00, 15/02*
U.S. Cl. 123—122 **12 Claims**

A fuel-air mixture supply and intake system for an internal combustion engine comprising an air valve carburetter and primary and secondary induction conduit systems for the passage of fuel/air mixture from the carburetter to the engine cylinders, the flow in the said conduit systems being controlled by two throttle valves interconnected to provide progressive opening of the



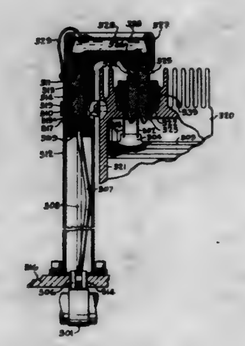
primary induction conduit system to a predetermined degree before opening of the secondary induction conduit system commences.

3,444,849
HYDRAULIC REGULATOR PARTICULARLY FOR FUEL INJECTION PUMPS OF INTERNAL COMBUSTION ENGINES
Pierre Etienne Bessière, Paris, France, assignor to Robert Bosch G.m.b.H., Stuttgart, Germany, a corporation of Germany
Filed Dec. 27, 1967, Ser. No. 693,885
Claims priority, application France, Jan. 2, 1967, 89,726
Int. Cl. F02d *1/04, 1/06*
U.S. Cl. 123—140 **9 Claims**



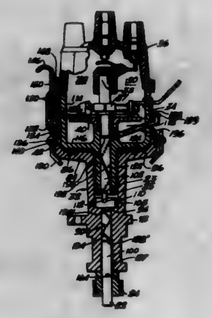
An r.p.m.-dependent regulator for varying the fuel quantities delivered by fuel injection pumps, including a control element formed as a piston that reciprocates in a bore with a frequency depending upon the r.p.m. of an internal combustion engine associated with said fuel injection pumps; an accumulator into which liquid is displaced by the control element during each pressure stroke, a spring-biased accumulator piston which, during each suction stroke of the control element, forces the liquid out from the accumulator; conduit means which are opened and closed by the control element in such a coordinated manner that during each suction stroke, provided the frequency of reciprocation of the control element exceeds a predetermined r.p.m., the liquid displaced from the accumulator is allowed to expand into a cylinder displacing to a varying extent a regulating piston connected to the fuel quantity control members of the fuel injection pump.

3,444,850
VOLTAGE-GENERATION APPARATUS AND IGNITION SYSTEMS
John J. Horan, 420 Quigley Ave., Willow Grove, Pa. 19090
Continuation-in-part of applications, Ser. No. 498,359, and Ser. No. 498,549, Oct. 20, 1965. This application Aug. 8, 1967, Ser. No. 659,095
Int. Cl. F02p *3/12*; F02b *23/08*
U.S. Cl. 123—148 **18 Claims**



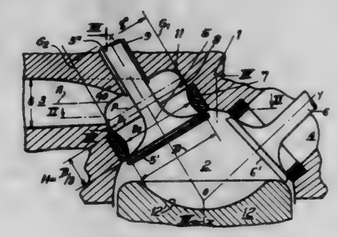
This invention teaches simplified alternating voltage generators and ignition systems that are particularly applicable to ignition service in small internal-combustion engines, which generators utilize piezoelectric devices, cyclically compressed by force-limited means, for producing high voltages, the discharge of which may be timed by a piston or pistons.

3,444,851
TWO-PART IGNITION DISTRIBUTOR HOUSING
Albert Sieger, 4180 SW. 9th St., Miami, Fla. 33134
Filed May 17, 1967, Ser. No. 639,150
Int. Cl. F02p *5/02*
U.S. Cl. 123—164 **5 Claims**



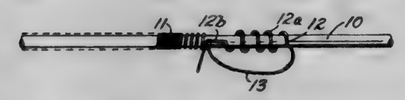
For use on an internal combustion engine including a cam shaft with a drive gear for driving a distributor shaft and having an access opening for the distributor shaft, the improvement comprising a mounting means for the distributor casing, the distributor shaft being in two portions which are inter-connected by a connection of common eccentricity, with one portion of the shaft being captivated in the mounting means and with the other portion being captivated in the casing, and which includes relative adjustment means to advance or retard the spark with respect to the predetermined angular position of the distributor shaft.

3,444,852
INTERNAL-COMBUSTION ENGINE
Edmond Henry-Biabaud, Paris, France, assignor to Société Anonyme André Citroen, Paris, France, a corporation of France
Filed Feb. 16, 1967, Ser. No. 616,702
Claims priority, application France, Feb. 17, 1966, 49,923
Int. Cl. F01l *3/06*
U.S. Cl. 123—188 **10 Claims**



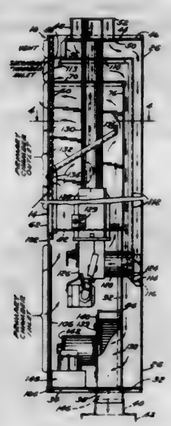
A cylinder head of an internal-combustion engine has an intake port of circular cross-section with an axis inclined at an acute angle to the cylinder axis and a venturi defined by an annular insert received in this port to form a seat for a control valve; an inlet passage disposed in a plane perpendicular to the cylinder axis terminates in a portion of elliptical cross-section substantially conforming to the elliptical projection of the inlet port upon a plane transverse to the axis of this terminal portion, the latter being connected to the port by way of a transition zone of elliptical or oval cross-section.

3,444,853
BOW STRING WITH IMPROVED WHIPPING THREAD WRAP
Russell N. Hofmeister, Waseca, Minn., assignor to Herter's Inc., Waseca, Minn., a corporation of Minnesota
Continuation-in-part of application Ser. No. 551,725, May 20, 1966. This application Aug. 24, 1966, Ser. No. 584,289
Int. Cl. F41b *5/00*
U.S. Cl. 124—30 **4 Claims**



A whipping or serving thread is applied to a bow string to strengthen and reinforce it by wrapping the serving thread around the bow string in a first direction, turning the free end of the thread around in a loose loop and forming a series of reverse, intermediate windings, with a portion of the free end of the thread lying along the bow string, then wrapping the loose looped portion around the bow string in said first direction over the portion of thread lying along the bow string. The free end of the thread is then drawn tight to pull the thread windings snugly against each other. This process is repeated to form an additional set of thread windings which are pulled tightly against the first thread wrapping in interlocking engagement therewith.

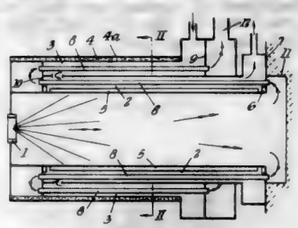
3,444,854
GRAVITY AND FORCED HOT AIR FURNACE
Clinton W. Fraim, Sturgis, Mich., assignor to Motor Wheel Corporation, Lansing, Mich., a corporation of Ohio
Filed Nov. 20, 1967, Ser. No. 684,359
Int. Cl. F24h *3/06, 3/00*
U.S. Cl. 126—110 10 Claims



A hot air furnace of the sealed combustion space heater type fueled by gas or oil which can be operated as a gravity or forced circulation system, or both. The furnace is adapted for upright recessed mounting in a side wall of the principal room to be heated and has a sealed duct combustion system which includes a combustion chamber surrounded at its sides and rear by a primary air heating chamber. The primary chamber communicates with the room through upper and lower openings in the front panel of the furnace to permit gravity induced air circulation from the room into the heater, upwardly past the combustion chamber and thence outwardly back into the room again to thereby heat the room by gravity convection heating as well as by radiant heating. The furnace also has a blower connected to the lower outlet end of a secondary air heating chamber which surrounds the primary air chamber. The inlet of the secondary chamber is positioned directly above the room outlet of the primary air chamber. When the blower is in operation, a portion of the hot air convection currents issuing from the outlet of the primary chamber into the room is immediately sucked from the room back into the furnace via the inlet of the secondary air chamber and is then drawn downwardly therethrough to the blower, in counter flow heat exchange relation with the heated air flow in the primary chamber, and is then forced into a sub-floor distribution duct system to heat other spaces in the trailer or home. The sealed duct combustion system includes a combustion air intake chamber separating the secondary chamber from the exterior of the furnace to provide both insulation and economizer operation.

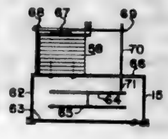
3,444,855
HEAT EXCHANGER AND HEAT EXCHANGE ELEMENT THEREFOR
Ernest Horace Priest and Gordon Michael Priest, both of Beverley House, London Road, Horsham, Sussex, England
Filed Jan. 23, 1967, Ser. No. 611,056
Claims priority, application Great Britain, Jan. 31, 1966, 4,102/66
Int. Cl. F24h *3/00*; F28d; F28f *1/14*
U.S. Cl. 126—116 4 Claims

The invention is directed to a heat exchanger including a plurality of individual extruded heat exchange elements, means joining the elements together along the generally longitudinally extending sides thereof for defining a first duct means substantially surrounding a longitudinally extending second duct means so that a first fluid may be passed through the first duct means in a heat exchange



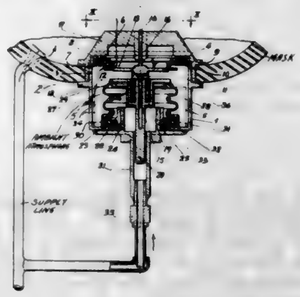
relationship with a second fluid passed through the second duct means and with at least a substantial proportion of the heat transferred between the first and second fluids passing through wall portions of the heat exchange elements.

3,444,856
BLOOD PRESSURE MONITOR
Morris Settler and Bert Settler, Winnipeg, Manitoba, Canada, assignors to Harco Electronics Ltd., Winnipeg, Manitoba, Canada
Filed June 24, 1965, Ser. No. 466,602
Int. Cl. A61b *5/10*
U.S. Cl. 128—2.05 2 Claims



An occluding cuff having a transducer connected to preamplifier and multi-vibrator circuits to produce impulses for actuating systolic and diastolic aneroid gauges. The gauges have electro-mechanical means for locking the same at systolic and diastolic pressures as a function of the generated impulses.

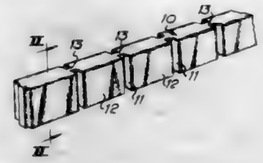
3,444,857
COMPENSATED ACTION NONRETURN EXHALATION VALVE, MORE PARTICULARLY FOR RESPIRATORY MASK
Edouard Paul Victor Raoul Godel, 16 Rue du Champ-Renie, Saint-Maur, Val-de-Marne, France
Original application Mar. 19, 1962, Ser. No. 180,741, now Patent No. 3,228,409, dated Jan. 11, 1966. Divided and this application Oct. 11, 1965, Ser. No. 494,709
Int. Cl. A62b *7/02, 23/06*
U.S. Cl. 128—142 4 Claims



Exhalation valve associated with a respiratory mask comprising a bellows supplied with a gas at a pressure

corresponding to the respiratory pressure, a spring placed in series with said bellows at the exterior thereof and a flat valve urged together by said spring and said bellows against a seat to close an opening through which exhaled air escapes to atmosphere.

3,444,858
METHOD AND MEANS FOR ADMINISTERING DRUGS
Higham S. Russell, 29 Camberley Drive, Rochdale, Lancashire, England
Filed May 11, 1966, Ser. No. 549,381
Claims priority, application Great Britain, May 14, 1965, 20,377/65
Int. Cl. A61m *31/00*; A61f *7/02*; A61l *15/00*
U.S. Cl. 128—260 5 Claims



A vehicle for administering a drug comprising an elongate sectionalized strip of resiliently flexible gelatinous material of a section which enables a length thereof conveniently to be inserted into the buccal sulcus so as to adhere to the gum thereat, the vehicle containing a drug having a capacity to be absorbed through the user's buccal mucous membrane, the strip being so formed at intervals therealong as to facilitate its being subdivided to provide individual sections of a desired drug dosage.

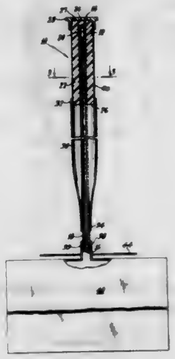
3,444,859
ABSORBENT FIBROUS BATT WITH LONGITUDINAL BARRIER AREAS
Frank Kalwaites, Somerville, N.J., assignor to Johnson & Johnson, a corporation of New Jersey
Original application July 14, 1964, Ser. No. 382,516. Divided and this application Nov. 30, 1967, Ser. No. 687,050
Int. Cl. A61f *13/18*; B29j *1/02*; B32b *3/02*
U.S. Cl. 128—284 5 Claims



An absorbent product of a fluffy batt of fibers having a length of less than ¼ inch and an adhesive bonding material. The center portion of the batt having bonding material on the surfaces of the portion and not interiorly of the batt and the longitudinal edge portions of the batt having greater fiber density than the center portion and having adhesive bonding material on the surfaces of the longitudinal edge portions.

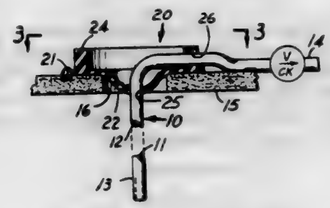
3,444,860
ASEPTIC CATHETER ASSEMBLY WITH HOLDER INTRODUCER
Osmah E. Harrell, 2217 Laurel Road, Jacksonville, Fla. 32207
Filed June 6, 1966, Ser. No. 555,551
Int. Cl. A61m *25/00*
U.S. Cl. 128—349 8 Claims

An aseptic catheter assembly including a lubricated catheter tube with a collection bag connected to one of the tube end portions and an elongated hollow, open-ended semi-rigid holder-introducer surrounding the tube at its opposite end portion with the tube being slideable therethrough. The assembly further includes a flexible elongated tubular membrane surrounding the tube with one of the membrane end portions being attached to and outwardly around the holder-introducer between the ends



of the holder-introducer and the other membrane end portion being attached to and externally around the tube adjacent the tube and bag connection. A removable cap is provided closing the exposed end of the holder-introducer to maintain aseptic integrity of the assembly.

3,444,861
DRAIN TUBE WITH ADJUSTING FRICTION LOCK
Rudolf R. Schulte, 3328 Calle Fresno, Santa Barbara, Calif. 93105
Filed Mar. 15, 1966, Ser. No. 534,311
Int. Cl. A61m *27/00*
U.S. Cl. 128—350 3 Claims

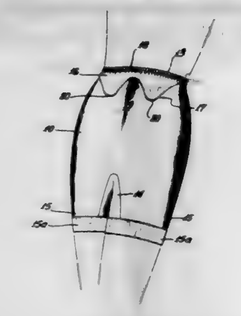


This invention relates to the combination of a drainage tube for use in the human body and a lock member adapted to fit in a hole formed through cranial bony structure, and to be engaged by the bony structure for lateral support. The lock member has a flange, and a pair of nonaligned openings through which the tube passes whereby to make a frictional engagement with the tube, thereby to hold the tube against axial motion. Both the lock member itself and the tube lie flat against the bony structure so as to cause minimal cosmetic distortion.

3,444,862
GIRDLE HAVING COMFORT WAIST
Olga Erteszek, Los Angeles, Calif., assignor to Olga Company, Van Nuys, Calif., a corporation of California
Filed Dec. 22, 1966, Ser. No. 603,863
Int. Cl. A41c *1/02*
U.S. Cl. 128—528 5 Claims

A girdle construction having a localized tensional relief

feature in the girdle body portion generally about the abdomen by provision, illustratively, of a lightweight, limp



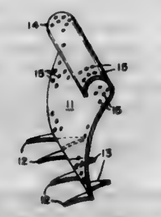
and relatively inelastic material at such portion, below the waistband at the midriff of the wearer.

3,444,863
TOBACCO SMOKE FILTER
John William Soehngen and William Sherwood Wagner, Berkeley Heights, and Saunders Eliot Jamison, Summit, and Dale Kelley Canfield, Chatham, N.J., assignors to Celanese Corporation, a corporation of Delaware
Filed Sept. 21, 1966, Ser. No. 580,993
Int. Cl. A24d *1/04, 1/06;* A24f *13/06*
U.S. Cl. 131—267 7 Claims



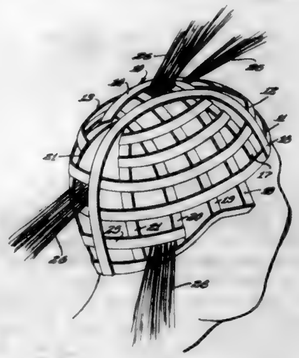
Cigarette filters are prepared from a random array of continuous spray-spun synthetic filamentary material, the filaments of said filamentary material varying in diameter with the periodicity characteristics of the filament being such that the change in diameter occurs over a relatively long distance along the filament length.

3,444,864
HAIR STYLING DEVICES
Herbert N. Glushakow, 1426 Reistertown Road, Pikesville, Md. 21208
Filed June 1, 1966, Ser. No. 554,413
Int. Cl. A45d *2/12, 2/18, 2/26, 2/32*
U.S. Cl. 132—38 8 Claims



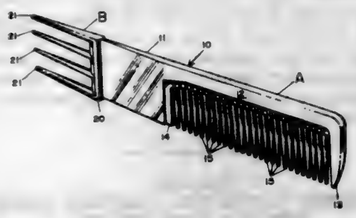
A hair styling device in the form of a perforated sheet of stiff waterproof material having at one end comb-like fingers which project generally at right angles to the sheet to engage the scalp and hair adjacent the scalp. The opposite outward end of the sheet is arcuate to shape the hair in a desired form such as a wave or a curl. In case of the curl the outer end is shaped to provide a spiral passageway and a slender bar having fluted edges is provided to insert the hair in the spiral passageway.

3,444,865
TRANSFORMATION WIG
Guy F. De Vita, 4900 W. Irving Park Road, Chicago, Ill. 60641
Filed Nov. 10, 1966, Ser. No. 593,421
Int. Cl. A41g *3/00*
U.S. Cl. 132—53 4 Claims



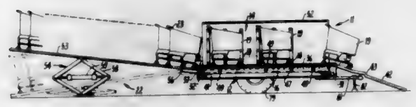
In carrying out the invention I form an open framework in the general form of a cap, conforming to the head of the wearer of the wig, and made from a flexible or elastic material, to accommodate the wig to be placed over the human head. I then secure wefting pieces made from human or synthetic hair to the open framework and provide sufficient open area in the open framework to accommodate a person wearing the wig to draw his own hair through the open portions of the framework to blend with the hair of the wig.

3,444,866
HAIR STYLING COMB
Anthony Battaglia, 17030 NE. 21st Ave., Miami, Fla. 33162
Filed Mar. 2, 1966, Ser. No. 531,148
Int. Cl. A45d *2/44, 24/04*
U.S. Cl. 132—126 2 Claims



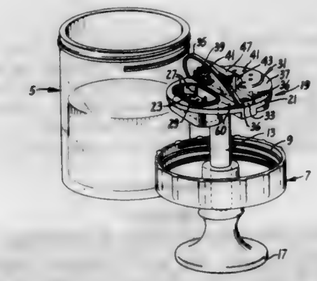
A hair styling comb for building a base for a hair styling having a plurality of teeth lying in a common plane and spaced from each other with ridge portions extending from the base of the teeth on both sides thereof in coplanar relation with the teeth, the ridge portions of one ridge in each space between the teeth having transverse grooves for engaging the hair and pushing the hair toward the scalp as a person combs the hair in the direction of the scalp.

3,444,867
MOBILE CART WASHER
Charles R. Thornton, 775 Victoria Ave., San Leandro, Calif. 94577
Filed Sept. 11, 1967, Ser. No. 666,596
Int. Cl. B60s *3/04*
U.S. Cl. 134—123 11 Claims



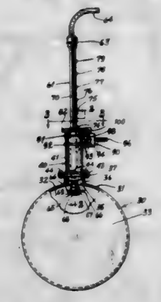
A washer for grocery shopping type carts, having a wash station with nozzles mounted to spray a heated wash fluid at the cart, a continuous conveyor chain running through a track along the floor of the station with fingers for engaging the lower front part of the cart, a reservoir located below the station to receive wash fluid drained from the station, a recirculating pump for the wash fluid, and an elevating mechanism including a platform having one end pivotally attached near the floor of the wash station at the entry end and the distal end raised by a scissors-jack mechanism to lift a nested group of carts to the level of the floor of the wash station, where they feed by gravity toward the chain. When the foremost cart engages the chain, the engaged part of the cart is below the level of the beginning of the chain flight through the wash station, so that the cart is slightly lifted by the finger as it is pulled off the platform to disengage it from the remaining carts. The fingers are pivotally attached to the chain and constrained by the track to stand up from the chain to engage the cart. The track terminates at the exit of the wash station, removing the constraint on the fingers to assure positive release of the cart. A ramp having a bump in it to shake off water conducts the carts back to ground level.

3,444,868
LENS WASHING MACHINE
Richard C. Hungerford, Sunnyvale, and Frank E. Brown, Burbank, Calif., assignors to Barnes-Hind International, Inc., a corporation of California
Filed Sept. 22, 1966, Ser. No. 581,253
Int. Cl. B08b *3/02*
U.S. Cl. 134—143 3 Claims



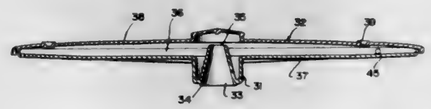
A washing device for contact lenses is provided having a piston with a pair of cavities therein with a cover member which is hinged at the center to provide an individual cover for each of the cavities with holes through the piston and cover member and with means for holding the cover member in contact with the piston whereby the piston can be reciprocated in a fluid, providing a jet washing action over the surfaces of the contact lenses.

3,444,869
JET CLEANING DEVICE
John E. Guignon, Helen G. Guignon, and John E. Guignon, Jr., all of 12 Chipper Road, St. Louis, Mo. 63131
Filed Nov. 4, 1965, Ser. No. 506,353
Int. Cl. B08b *3/02*
U.S. Cl. 134—167 4 Claims



A tank cleaning machine having nozzles oscillatable about multiple axes to direct optimum-pressure cleaning streams from different nozzles against different parts of a tank according to the distance of the parts of the tank from the nozzles. A plurality of streams of cleaning liquid are directed to various parts of the tank, the sizes of the streams varying with the distances of parts of the tank from the nozzles.

3,444,870
ARTICLE WASHING APPARATUS
John B. Lyman, Bloomington, Minn., assignor to Whirlpool Corporation, a corporation of Delaware
Filed Dec. 12, 1966, Ser. No. 601,014
Int. Cl. B08b *3/02;* B05b *1/06, 3/16*
U.S. Cl. 134—179 2 Claims



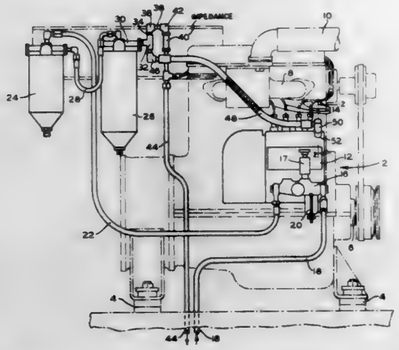
A dishwasher or similar article washing apparatus comprising an article holder for retaining the articles during the washing thereof and a hollow spray arm that receives liquid on its interior and sprays the liquid under pressure on the holder and the articles held therein in which the spray arm comprises parts separably joined at their peripheries to form the arm, the separable parts having interengaging fastening means at the peripheries, some of which are distortable by the liquid pressure on the interior of the arm into more secure engagement with the other fastening means.

ERRATUM

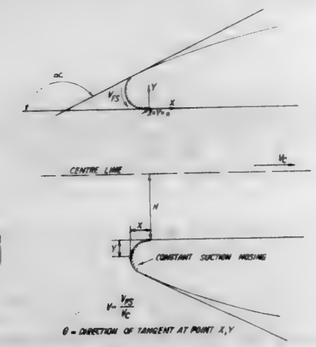
For Class 137—14 see:
Patent No. 3,444,941

3,444,871
DIESEL FUEL SYSTEM
Harold E. McClure, Wayzata, Minn., assignor to Thermo King Corporation, Minneapolis, Minn., a corporation of Delaware
Filed May 2, 1966, Ser. No. 546,893
Int. Cl. F02m *33/00, 37/20*
U.S. Cl. 137—15 **4 Claims**

Air or other gases are removed from the injection pump of a Diesel fuel feeding system by circulating the fuel in a closed circuit with respect to the source of supply, and feeding a portion of the fuel from said circuit in a downwardly sloping path to an upper limit of the injection pump in a confined path of sufficient capacity to allow any gas to flow in an opposite or counter-current direction to a high point in the closed circuit for disposal therefrom.



3,444,872
FLUID FLOW ENTRIES
Ellis Joseph Gabbay, 384 Cedar Ave., Ridgewood, N.J. 07450
Filed Feb. 19, 1964, Ser. No. 345,973
Claims priority, application Great Britain, Feb. 20, 1963, 6,914/63
Int. Cl. F02k *11/00;* **F02b** *27/00;* **F02m** *35/10*
U.S. Cl. 137—15.1 **3 Claims**



1. A fluid flow entry comprising a duct having a wedge shaped exterior cowl merging with a leading edge having local contours determined by the rectangular coordinates X, Y according to the equations:

$$\frac{X}{H}=\frac{2}{\pi V}\left(\frac{A\alpha}{\pi}\sin\theta+B\cos\theta-C\right)$$

$$\frac{Y}{H}=\frac{2}{\pi V}\left(\frac{A\alpha}{\pi}\cos\theta-B\sin\theta\right)$$

where:

H=the half width of the duct interior in the plane $X=0$ of the nose shape;
α=exterior complement of the cowl wedge angle;
θ=the angle of the tangent at each point X, Y;
V=the highest value compatible with the requirement that the requirement that the local mach at the boundary is not greater than 1.2;

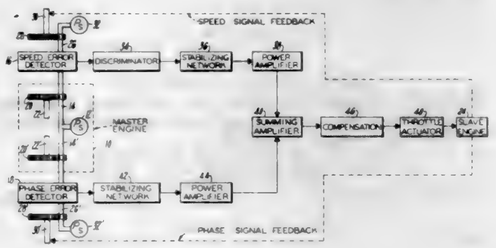
$$A=\sum_{j=1}^{j=\infty}\frac{V^{-j\frac{\pi}{\alpha}}}{j^2-\left(\frac{\alpha}{\pi}\right)^2}\sin\frac{j\pi}{\alpha}\theta$$

$$B=\sum_{j=1}^{j=\infty}\frac{jV^{-j\frac{\pi}{\alpha}}}{j^2-\left(\frac{\alpha}{\pi}\right)^2}\cos\frac{j\pi}{\alpha}\theta$$

$$C=\sum_{j=1}^{j=\infty}\frac{jV^{-j\frac{\pi}{\alpha}}}{j^2-\left(\frac{\alpha}{\pi}\right)^2}$$

j being the enumerating and variable integer=1, 2, 3 etc. and then deriving the shape intermediate said local contours by means of fairing lines.

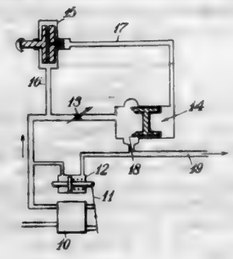
3,444,873
FLUID SYNCHRONIZING SYSTEM FOR ROTATING DEVICES
Francis R. Preli, East Hartford, and Robert E. Olson, Vernon, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Apr. 3, 1967, Ser. No. 628,014
Int. Cl. G05d *13/30;* **F15c** *1/04*
U.S. Cl. 137—26 **10 Claims**



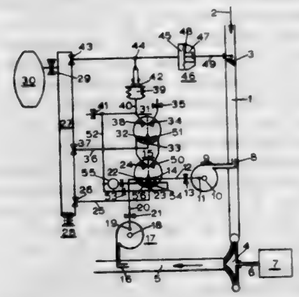
A synchronizing and synchrophasing system for speed and phase control of rotating devices such as propellers utilizing pure fluid components. Fluid amplifiers sense the speed and phase difference between a master device and the slave device, produce an error signal in response to any deviations, and provide an output signal to correct the error.

3,444,874
FUEL SUPPLY CONTROL SYSTEMS
Brian Edmund Sparks, Shrewley Common, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England, a British company
Filed June 21, 1966, Ser. No. 559,225
Int. Cl. F02c *9/08;* **G05d** *13/32*
U.S. Cl. 137—36 **2 Claims**

A fuel supply control system for a gas turbine engine comprising a variable output pump, a manually controllable throttle valve and a further valve in series between the pump and the engine and an hydraulic signal generator arranged to produce an engine speed responsive signal applied to the further valve to control the supply of fuel flowing therethrough to the engine.



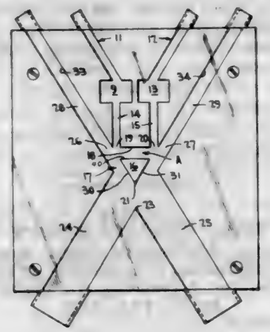
3,444,875
FLUID PRESSURE RATIO CONTROL DEVICES
Owen D. Furlong, Alan C. Rowe and Eric F. Wright, Yeovil, Somerset, England, assignors to Westland Aircraft Limited, Yeovil, England
Filed Mar. 25, 1966, Ser. No. 537,446
Claims priority, application Great Britain, Apr. 2, 1965, 14,077/65
Int. Cl. F15b *3/00;* **G05b** *16/18*
U.S. Cl. 137—37 **16 Claims**



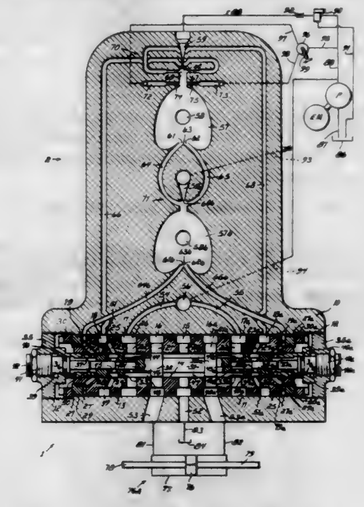
In a system for fluid pressure ratio control, first and second pressures are sampled, and each is used to create a vortex flow of fluid in independent vortex chambers. Sensing flows, taken from a position disposed within the vortex flow in each of the vortex chambers, are compared in a pure fluid system such as a deflection type fluid amplifier, and an output signal, indicating for example the degree of a pressure increase across a turbine, is transmitted to an actuator which changes the pressure ratio to a predetermined level, such as by reducing the flow to the turbine.

3,444,876
PROPORTIONAL COMPARATOR
Leonard M. Sieracki, Beltsville, Carl J. Campagnuolo, Chevy Chase, and Francis E. Blodgett, Silver Spring, Md., assignors to the United States of America as represented by the Secretary of the Army
Filed Sept. 19, 1966, Ser. No. 580,554
Int. Cl. F15c *1/12, 1/14*
U.S. Cl. 137—81.5 **9 Claims**

A means for receiving plural pressure signals and for producing a fluid output proportional to the difference in the fluid signals. If the flow pressure in one input channel exceeds that of another input channel a low pressure area will be created by entrainment in a channel connecting the two input channels causing more fluid to be directed out one output channel than the other. Auxiliary channels are used to further control the proportionality of the output flow.



3,444,877
HYDRAULIC FLUID AMPLIFIER CONTROLLED SERVOVALVE
Raymond D. Atchley, Los Angeles, Calif., assignor to Abex Corporation, a corporation of Delaware
Filed Mar. 16, 1966, Ser. No. 534,745
Int. Cl. F15c *3/02*
U.S. Cl. 137—81.5 **8 Claims**

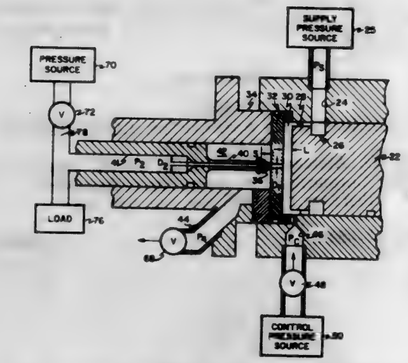


A feedback value is associated with each of two feedback passages communicating between the bore of a spool-type work valve and the interaction chamber of a hydraulic amplifier. Each of the two feedback streams intersect the amplifier's one control stream so as to deflect the control stream in a direction opposite to the deflection imparted by its related regulator stream, the difference of regulator stream momenta impinging on the control stream being determined by the setting of a control valve so as to position the spool as desired within the bore. When the setting of the control valve is changed to reposition the spool within the bore, movement of the spool causes each feedback valve to open or close as required to stop and maintain the spool at the new position indicated by the new control valve setting by effecting an equilibrium between the feedback streams and

regulator streams acting on the control stream at that new control valve setting.

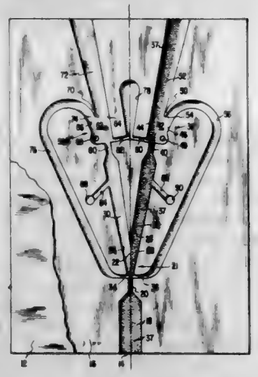
Each feedback valve includes an axial passage toward one end of the spool to which work fluid is constantly provided. The axial passage has an outlet port in the spool that communicates with the feedback passage, and receives a piston slidable in that passage relative to movement of the spool. Thus, each feedback valve is operated by movement of the spool within the bore, such movement being initiated when the control stream signal received from the hydraulic amplifier changes in response to a new control valve setting.

3,444,878
FLUID CONTROL DEVICE
Endre A. Mayer, Birmingham, Mich., assignor to The Bendix Corporation, a corporation of Delaware
Filed Apr. 4, 1966, Ser. No. 539,761
Int. Cl. F15c *1/08*
U.S. Cl. 137—81.5 11 Claims



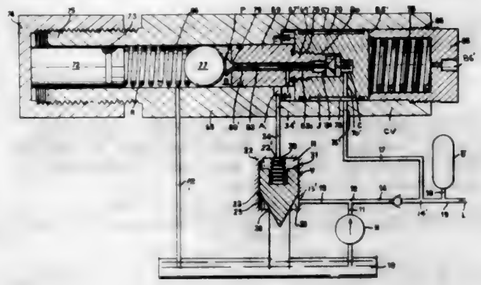
The pressure amplifier having a vortex chamber with a centrally located outlet hole in combination with a probe axially displaced downstream of the outlet hole connected to a source of counterflow fluid.

3,444,879
FLUID PULSED OSCILLATOR
Paul C. McLeod, Jr., Little Rock, Ark., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed June 9, 1967, Ser. No. 645,035
Int. Cl. F15c *1/08*
U.S. Cl. 137—81.5 7 Claims



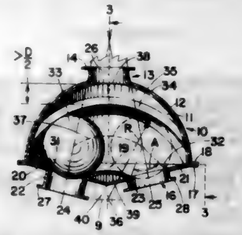
A fluid pulsed oscillator comprising a bistable fluid amplifier having a monostable device coupled to the downstream end of each fluid amplifier outlet passage, each monostable device having a nonstable outlet, a feed-back passage between each nonstable outlet and respective fluid control ports for said fluid amplifier and means for delivering fluid control pulses simultaneously to said monostable devices to cause the power stream to move momentarily into a nonstable outlet and thereby effect switching thereof from one fluid amplifier outlet passage to the other.

3,444,880
PRESSURE CONTROL UNIT FOR HYDRAULIC SYSTEMS
Jean Mercier, 501 Bloomfield Ave., Caldwell, N.J. 07006
Original application Jan. 31, 1963, Ser. No. 255,401, now Patent No. 3,294,104, dated Dec. 27, 1966. Divided and this application Nov. 9, 1966, Ser. No. 593,114
Int. Cl. F15b *21/00*
U.S. Cl. 137—108 9 Claims



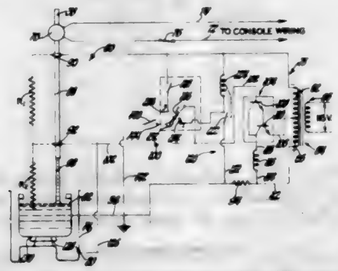
This invention relates to the art of control units, and more particularly to a control unit which includes a discharge valve that is controlled by a pilot valve, and resilient means are provided which react against the pilot valve normally to retain the latter in closed position at which time the discharge valve will also be closed. As the pressure in the system rises toward a first predetermined value, the force exerted by the resilient means against the pilot valve will be reduced and when the system pressure reaches such first predetermined value the pilot valve will be actuated to effect opening of the discharge valve. When the discharge valve has opened to relieve the pressure in the system, the force exerted by said resilient means against the pilot valve will be inincreased whereby when the system pressure has fallen to a second predetermined value, the pilot valve will again be actuated to effect closing of the discharge valve.

3,444,881
LARGE FREE BALL CHECK VALVE
Winston J. Harper, Rexdale, Ontario, Canada, assignor to The Technequip Company Limited, Weston, Ontario, Canada
Filed Dec. 11, 1967, Ser. No. 689,411
Int. Cl. G05d *11/03*; F16k *21/08*; F16l *7/00*
U.S. Cl. 137—112 7 Claims



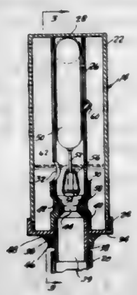
This specification discloses a ball check valve of the free fall type comprising: a valve body, a plurality of inlet fittings defining ball valve inlet seats; an outlet fitting, at least one ball valve member of a diameter substantially greater than that of said inlet seats, and ball race means within said body spaced a ball clearance distance and extending support for said ball throughout a path of travel thereof from one inlet to an adjacent inlet seat.

3,444,882
BALANCED BRIDGE FILL SYSTEM FOR CLOTHES WASHER
Homer W. Deaton, Centerville, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 2, 1966, Ser. No. 598,691
Int. Cl. E03b; F16h *21/18*; F17d
U.S. Cl. 137—392 15 Claims



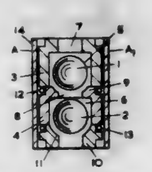
In preferred form, a domestic washer fill system using the resistance of a free-falling column of fill fluid into the washer tub to terminate the supply of fluid thereto when said fluid reaches a predetermined level. The free-falling column of fluid forms one leg of a bridge circuit which produces an output signal when the bridge is unbalanced. When the fluid in the tub is at a desired operating level, the free-falling column of fluid is a desired length from a spatially placed inlet means to the top of the fluid level in said tub. The electrical resistance of the said free-falling column of fluid at this point is of a magnitude such that the bridge does not produce an output signal. Said control means, in the absence of an output signal, in combination with said fluid supply system terminates fluid flow to the said tub.

3,444,883
LIQUID STORAGE SYSTEM
William M. Slaughter, P.O. Box A–265, Fuquay Varina, N.C. 27526
Filed Feb. 3, 1967, Ser. No. 613,948
Int. Cl. B67d *5/06, 5/54*; F15b *1/04*
U.S. Cl. 137—207 6 Claims



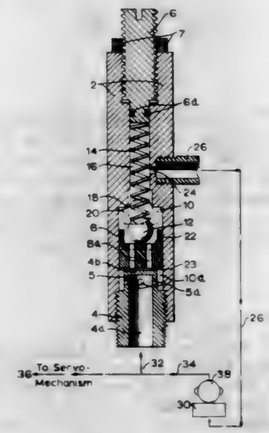
A liquid storage system having a valve, a pre-charged storage vessel, a pump, and a tap. The storage vessel is connected to the upstream side of the valve and the precharge dispenses liquid through the valve to the tap located at the downstream side of the valve. The discharge line of the pump has a common union with the tap at the valve. When the pressure in the pump line is slightly greater than the pressure of the precharge on the remaining liquid in the system, the valve will close to trap the precharge. As further liquid is removed, the pressure in the pump line decreases and the pump is automatically activated to open the valve and replenish the liquid supply in the vessel through the valve.

3,444,884
ASSEMBLY UNITS
Francis Godfrey Huddle, Purley, England, assignor to The Distillers Company Limited, Edinburgh, Scotland, a British company
Filed Jan. 23, 1967, Ser. No. 611,012
Claims priority, application Great Britain, Feb. 19, 1966, 7,403/66
Int. Cl. F16k *43/00, 51/00*; F16l *55/18*
U.S. Cl. 137—316 8 Claims



The invention relates to assembly units comprising a deformable sleeve having retained therein a plurality of components such as elements of ball or disc valves or disc filters the components assembled in positions relatively to each other which they are required to occupy in the unit, the undeformed sleeve having an elliptical or other such non-circular internal cross-sectional profile whose smallest width is less than the maximum cross-sectional width of the assembled components, the sleeve capable of being deformed so as to fit over the assembled components without extension of its internal perimetral dimensions and having sufficient elasticity when so fitted as to tend to regain its undeformed shape thus gripping and retaining the components.

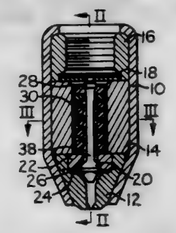
3,444,885
AUTOMATIC REDUCER OF FLUID FLOW AT LOW PRESSURE
Gildardo G. Sanchez, Mexico City, Mexico, assignor to Impulsora de Patentes Industriales, S.A., Mexico City, Mexico, a company of Mexico
Filed Dec. 27, 1965, Ser. No. 516,328
Int. Cl. F16k *17/04, 15/00*
U.S. Cl. 137—504 2 Claims



This invention is directed to a bypass flow reducing valve for pump-supplied fluid ducts operating under al-

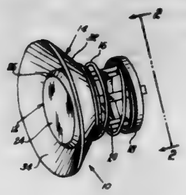
ternating and intermittent conditions of normal and reduced pressures. The valve is so constructed that the duct is under normal pressure no fluid will be bypassed through the valve, yet when the duct is under reduced pressure the valve will open to bypass fluid back to the sump of the supply pump. Fluid always remains in the duct.

3,444,886
FUEL INJECTION VALVE
John M. Bailey, East Peoria, and Marion R. Joy, Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed May 16, 1966, Ser. No. 550,407
Int. Cl. F16k *15/06;* **B05b** *1/32;* **F02m** *61/04*
U.S. Cl. 137—541 **1 Claim**



A fuel injection valve assembly in which the valve has a stem with an enlarged end and a spring seat for the valve which is annular and has a central orifice to slide over the enlarged end. A two part member fits around the stem to prevent the valve seat from passing over the enlarged end of the stem and each of the two parts has a semicylindrical part fitting inside the spring seat to prevent separation of the two parts.

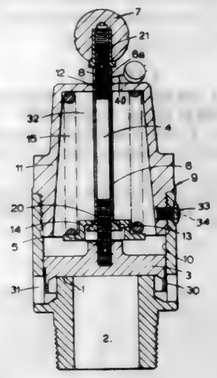
3,444,887
CHECK VALVE
Roy Forrest Davis, Jr., 704 Winegardner Road, Des Moines, Iowa 50317
Filed Aug. 26, 1966, Ser. No. 575,368
Int. Cl. F16k *15/12, 17/04, 21/16*



A spring-loaded check valve having multiple parts susceptible of fabrication on a press and die for individual replacement. Includes a housing with a flow opening having a valve seat on opposite sides thereof and valve means mountable selectively relative to either valve seat for effective valve action from either of two opposite directions. The valve means is also adjustable for flow control.

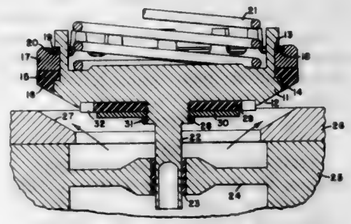
3,444,888
RELIEF VALVES
Andrew Sidney Madden, Bristol, England, assignor to Seetru Limited, Bristol, England, a British company
Filed Nov. 21, 1966, Ser. No. 595,689
Int. Cl. F16k *15/06, 17/06*
U.S. Cl. 137—542 **8 Claims**

The relief valve comprises an annular valve seat surrounding an inlet port. The seat is integral with an upward extending housing which has an opening in its upper end. The housing encloses the closure member resting on the seat. A sleeve enclosed stem is secured to the closure and both stem and sleeve extend slidably through



the opening in the housing. The lower end of the sleeve carries an abutment for a compression spring which has its upper end abutting the upper end wall of the housing.

3,444,889
PUMP VALVES
Othar M. Kiel and Harold L. Graham, Houston, Tex., assignors to Esso Production Research Company, a corporation of Delaware
Filed Aug. 18, 1966, Ser. No. 573,418
Int. Cl. F16k *15/12, 17/196*
U.S. Cl. 137—547 **9 Claims**

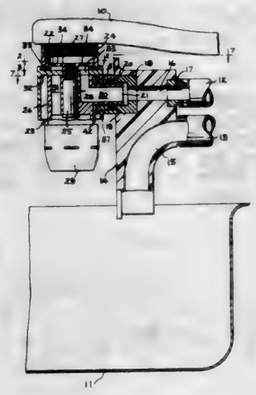


A valve body for a reciprocating pump for handling fracturing fluids or similar liquids containing suspended particles of predetermined size including a perforated skirt that extends below the valve body into the seat as the valve closes so that suspended solids are excluded from the terminal portion of the discharged fluid and particles that might otherwise be trapped between the body and seat are swept away by fluid from which the solids have been excluded.

3,444,890
MEANS TO CONNECT AN AUTOMATIC WASHING MACHINE TO A WATER FAUCET
Bobby J. Ralston, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed May 26, 1966, Ser. No. 553,238
Int. Cl. E03b *7/07;* **F16k** *13/00;* **F16l** *29/00*
U.S. Cl. 137—562 **7 Claims**

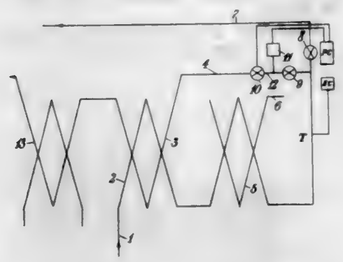
Improved coupling means for connecting an automatic washing machine to a faucet. The improved means comprises a body portion adapted to be secured to the faucet. At least one passageway extends through the body portion and is adapted to receive liquid from the faucet.

The passageway extends to a coupling spout on the body portion that is adapted to be coupled to a washing machine liquid inlet hose. A valve element is provided that is movable relative to the body portion and has an opening that is adapted to be selectively moved into and



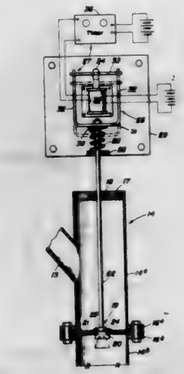
out of registry with the passageway. Latching means is provided on the movable valve element that is movable with the element to latch the hose against dislodgment from the body portion when the element is in registry with the passageway.

3,444,891
FLOW DIVERSION CONTROLS
Harry Christopher Cooper, Crawley, England, assignor to The A.P.V. Company, Limited, Crawley, England, a British company
Filed Jan. 27, 1966, Ser. No. 523,395
Claims priority, application Great Britain, Jan. 27, 1965, 3,522/65
Int. Cl. F17d *3/00;* **G05d** *11/02*
U.S. Cl. 137—608 **5 Claims**



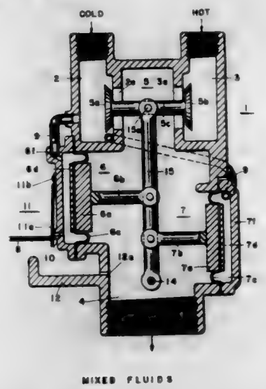
The invention provides a novel arrangement of simple valves in a thermostatically controlled flow diversion arrangement in a liquid product heat treatment plant. Instead of the conventional complex valve which opens a diversion line and closes the normal output line in one operation there is provided an arrangement of three simultaneously operable valves, one of which is thermostatically controlled to open and close the diversion line and the other two are in series in the output line and operable simultaneously with the said one valve. The space between the two valves is pressurized when they are closed to prevent leakage of a completely sterilised product into the output line.

3,444,892
DISPENSING DEVICE FOR METERING THE FLOW OF PARTICULATE MATERIALS
George W. Doyle, Middletown, and Robert A. Johnson, Long Branch, N.J., assignors to National Lead Company, New York, N.Y., a corporation of New Jersey
Filed June 9, 1966, Ser. No. 556,515
Int. Cl. F16k *1/04, 1/34, 1/42*
U.S. Cl. 137—624.15 **9 Claims**



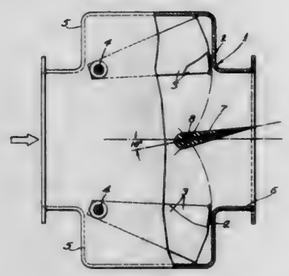
The present invention relates in general to a dispensing device and more especially to an improved foil-safe valve-means for metering the flow of finely divided solid materials from a supply source to a treatment zone and in particular to a pressurized system involving the same.

3,444,893
SERVOCONTROLLED DUAL FLUID MIXING VALVE HAVING A PAIR OF ACTUATING PISTONS
John F. Taplin, 15 Sewall St., West Newton, Mass. 02165
Filed July 11, 1966, Ser. No. 564,384
Int. Cl. G05d *11/16;* **F16k** *11/04, 31/165*
U.S. Cl. 137—625.4 **3 Claims**



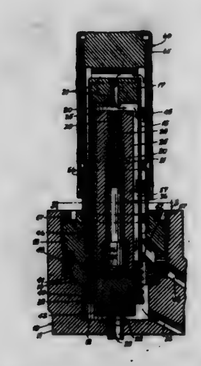
A servocontrolled mixing valve includes a pair of separate fluid motors both energized by one of the two fluids to be mixed which operate movable valve element means by the intermediary of a pivotable valve-operating lever.

3,444,894
DEVICE FOR GOVERNING THE PRESSURE OR QUANTITY OF A FLOWING GASEOUS MEDIUM
Einar Norelius, Jonkoping, Sweden, assignor to Aktiebolaget Svenska Flaktfabriken, Stockholm, Sweden
Filed Jan. 10, 1967, Ser. No. 608,335
Claims priority, application Sweden, Jan. 13, 1966, 400/66
Int. Cl. F16k *3/22*; F24f *13/10*
U.S. Cl. 137—625.28 4 Claims



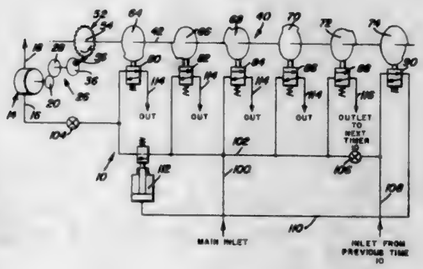
A device for governing the pressure or quantity of a flowing gaseous medium, including two damper blades positioned on opposite sides of an intermediate central body and movable substantially perpendicular to the flow of gaseous medium, into and away from engagement with said body to regulate the flow, said central body having a rounded upstream end from which the central body tapers towards a pointed downstream end. The central body is arranged to form an angle of about 10° with the main direction of the medium flow through the device to minimize the sound level generated in the device.

3,444,895
THREE-WAY SOLENOID VALVE
William E. Schnittker, Crestwood, Mo., assignor to Alco Valve Company, Creve Coeur, Mo., a corporation of Missouri
Filed July 1, 1966, Ser. No. 562,369
Int. Cl. F16k *11/06, 31/08*
U.S. Cl. 137—625.65 4 Claims



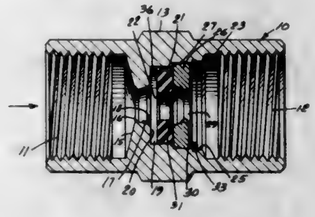
A three-way solenoid valve in which all three ports are supplied in a base portion with the solenoid coil secured removably to a tubular projection from the base portion whereby the magnetic coil may be removed for servicing without interfering with the fluid connections. Also the tubular projection consists of an inner and an outer tubular sleeve, the inner one containing a magnetic core to operate valves at each of its opposite ends, the inner and outer tubular portions being fixedly mounted in a plug and removably insertable into a base portion so that the plug with the tubular parts may be removed from the base to give access to the plunger for servicing of the valves. This latter also can be done without upsetting the fluid connections and by use of a thin spanner wrench can be done without removing the solenoid coil if desired.

3,444,896
HYDRAULIC INTERVAL TIMER
William R. Van der Veer, San Antonio, Tex., assignor, by mesne assignments, to William B. Wilson, Iraan, Tex.
Filed Jan. 18, 1967, Ser. No. 610,146
Int. Cl. G05b *19/00*; F15c *3/00*; A01g *25/02*
U.S. Cl. 137—624.2 10 Claims



A hydraulically actuated timer including a plurality of pilot valves for sequentially operating a plurality of associated irrigation valves without having to resort to an external source of power other than that derived from the pressure and/or flow of the water being used for irrigation purposes.

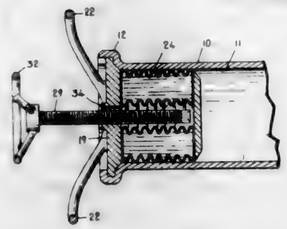
3,444,897
REVERSIBLE FLOW CONTROL DEVICE
Howard L. Erickson, Bensenville, Ill., assignor to The Dole Valve Company, Morton Grove, Ill., a corporation of Illinois
Filed Feb. 28, 1967, Ser. No. 619,224
Int. Cl. F15d *1/02*
U.S. Cl. 138—45 3 Claims



Reversible flow control device including a casing in the form of a pipe fitting having a flow control chamber intermediate the ends of the fitting. The flow control chamber contains a resilient flow control annulus. Facing seats are provided at opposite ends of the chamber having converging passageways leading from the chamber. The flow control annulus flexes along an associated seat in accordance with the direction of flow of fluid through the fitting,

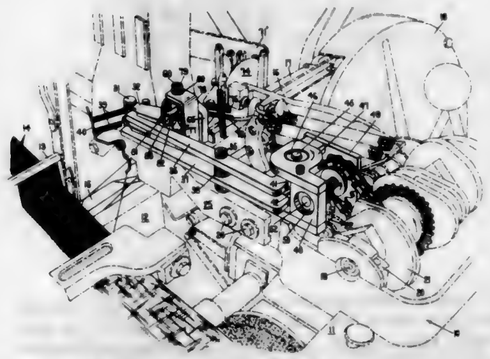
to restrict the cross-sectional area of the orifice through the flow control annulus as pressure drop through the orifice increases.

3,444,898
RELEASABLE FLUID SEAL FOR CONDUITS
Donald Caple, Downsview, Ontario, Canada, assignor, by mesne assignments, to Orenda Limited, Toronto, Ontario, Canada, a company
Filed Apr. 3, 1967, Ser. No. 627,831
Claims priority, application Great Britain, Apr. 4, 1966, 14,864/66
Int. Cl. F16l *55/12*; B65d *39/12*; E21b *33/12*
U.S. Cl. 138—89 4 Claims



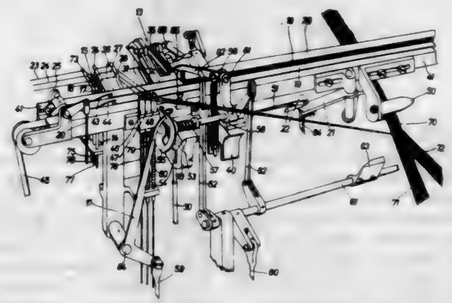
In a releasable sealing means for a conduit, a bellows unit is attached at one end to the inner face of a closure plug, the bellows unit extending into the bore of the conduit. The bellows unit, which is preferably a double bellows, is partially filled with liquid and is compressed axially by the fluid pressure within the conduit so as to expand radially into sealing engagement with the conduit wall.

3,444,899
FILLING YARN MIXING MECHANISM
Ralph H. Brown, Jr., Hopedale, Mass., assignor, by mesne assignments, to John Donald Marshall and Horace L. Bomar as trustees of The Carolina Patent Development Trust
Filed May 29, 1967, Ser. No. 641,871
Int. Cl. D03d *47/08*
U.S. Cl. 139—122 2 Claims



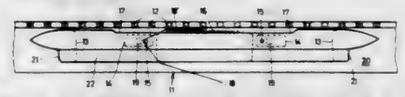
A filling yarn mixing mechanism for shuttleless looms of the type adapted to insert filling in the form of pairs of interconnected picks, and fabric formed thereby, having means for alternately inserting separate picks into the warp sheds which are individually guided and drawn from separate sources of supply.

3,444,900
ARRANGEMENT ON A LOOM FOR SELECTING AND DRAWING OFF WEFT YARN TO A PREDETERMINED LENGTH
Heinrich Schaffer, Werther, near Bielefeld, Germany, assignor to Ruti Machinery Works Ltd., Ruti, Zurich, Switzerland, a corporation of Switzerland
Filed June 12, 1967, Ser. No. 645,130
Claims priority, application Switzerland, June 22, 1966, 9,067/66
Int. Cl. D03d *47/40, 47/46, 47/48*
U.S. Cl. 139—122 18 Claims



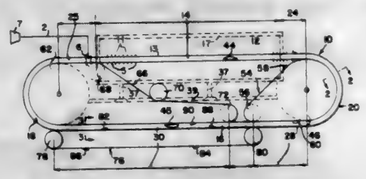
An arrangement on a loom for selecting and drawing off weft yarns to a predetermined length suitable for picking into a shed comprising an extractor member for drawing out yarns, which is moveable along a path with the yarns extending from a yarn supply via a yarn feeding means to a selvedge of a fabric being formed and adapted to be separately displaced by the yarn feeding means into the path of the extractor member and yarn withdrawing means operating to draw a portion of the yarn offered by the yarn feeding means in a direction opposite to that of the extractor member. The yarn feeding means comprises a plurality of separate yarn feeders which are selectively moved towards positions located approximately on a path extending between the extractor member and the yarn withdrawing means in their outermost extraction positions.

3,444,901
WEAVING SHUTTLE
Heinrich Schaffer, Werther, near Bielefeld, Germany, assignor to Ruti Machinery Works Ltd., Ruti, Zurich, Switzerland, a corporation of Switzerland
Filed Apr. 24, 1967, Ser. No. 633,108
Claims priority, application Switzerland, May 11, 1966 6,873/66
Int. Cl. D03j *5/22, 5/02*
U.S. Cl. 139—125 6 Claims



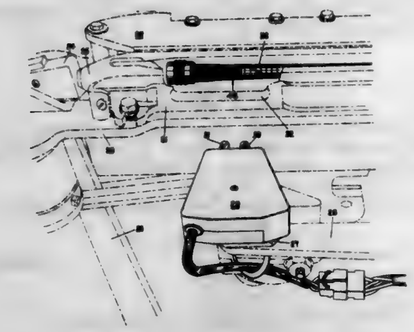
A weaving shuttle for picking weft threads into the shed on a loom, which comprises an elongated body, a passage extending through said body, thread-holding means positioned in said passage whereby a weft thread, upon being inserted into the shed by the shuttle, is held within said passage, so that a free end of the thread extends from the side wall of the shuttle on the reed side of the loom, and a recess on the reed-side wall of said body, the recess extending over the entire width of said body and extending, in the longitudinal direction of the said side wall, over at least the zone on the body covered by the free end of thread projecting from the shuttle during its movement through the shed.

3,444,902
APPARATUS FOR CONTROLLING THE SHUTTLE OF A WEAVING LOOM
Albert Moessinger, 1066 Epalinges, Switzerland
Filed Oct. 22, 1965, Ser. No. 500,810
Int. Cl. D03d *47/24, 47/00*
U.S. Cl. 139—125 18 Claims



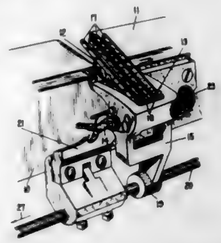
This invention relates to a novel carrier means for a shuttle adapted to be used in a weaving machine for controlling the velocity of the shuttle passing through a weaving loom, which carrier means comprises a closed channel means, a shuttle member adapted to travel through said channel means and a series of shuttle drive means with carrier members extending into said channel means to control the speed of travel of said shuttle. The invention further encompasses a novel method of weaving, utilizing a continuously moving shuttle which is adapted to move at various speeds.

3,444,903
PHOTOFEELER SYSTEM AND METHOD FOR FILLING DETECTION IN LOOMS
Roger G. Papelian, Milford, and Walter James Budzyna, East Douglas, Mass., assignors, by mesne assignments, to John Donald Marshall and Horace L. Bomar as Trustees of the Carolina Patent Development Trust
Filed July 28, 1966, Ser. No. 568,441
Int. Cl. D03d *45/10*
U.S. Cl. 139—273 7 Claims



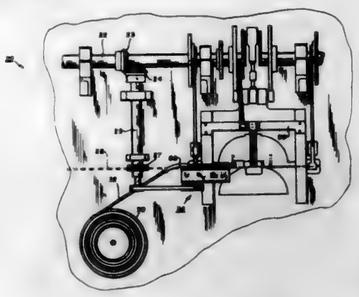
1. A filling bobbin detecting system for a loom replenishment mechanism which includes a light source being directed toward said filling bobbin, electronic sensing means for differentiating the range of intensity of light rays reflected from said filling bobbin, said sensing means reacting differently to light rays falling within one portion of said range than from rays falling within a second portion of said range, and pulse inducing means coupled with said sensing means for signalling said replenishment mechanism only when light rays which fall within one of said portions are reflected from bobbin, a photocell-resistor bridge having one photocell disposed to receive light rays reflected from said bobbin, and a second photocell providing compensation for changes in intensity within said light source, said light source comprising a low-voltage lamp being fixed within a housing, a transparent light pipe endwise adjacent said lamp for transmitting light rays longitudinally therethrough, and a second light pipe directed toward said one photocell and extending outwardly from said housing for transmitting the light rays being reflected from said filling bobbin.

3,444,904
LOOM STOP MOTION
Joseph M. Budzyna, East Douglas, and Rocco H. Muccierone, Franklin, Mass., assignors, by meme assignments, to John Donald Marshall and Horace L. Bomar as Trustees of the Carolina Patent Development Trust
Filed Sept. 22, 1967, Ser. No. 669,792
Int. Cl. D03d *51/36*
U.S. Cl. 139—376 3 Claims



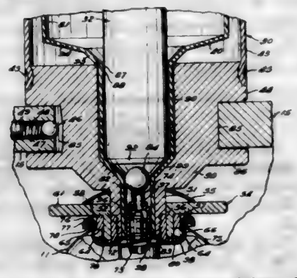
A stop motion for looms of the center fork type having means for temporarily holding the feeler tines of the center fork in a fixed position during the intial movement of the loom's lay from its extreme forward position, thereby preventing premature pivoting of said center fork and the damaging interference thereof with filling yarns and the fabric being formed by the loom.

3,444,905
METHOD AND APPARATUS FOR APPLYING PLASTIC GRIPS TO WIRE BAIL HANDLES
Raymond A. Heisler, 657 Dakota Trail, Franklin Lakes, N.J. 07417
Filed Apr. 3, 1967, Ser. No. 628,085
Int. Cl. B21f *23/00, 45/00*
U.S. Cl. 140—75 17 Claims



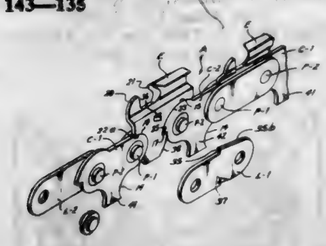
A method and apparatus for mounting a grip portion of plastic tubing on wire bail handles applied to containers. Plastic tubing is fed from a coil and in response to the actuation of a bail-forming and applying mechanism a determined length of tubing is moved into a cut-off and transfer arm whereupon the determined length of tubing is cut. The cut length of tubing is transferred and brought in the way of a wire being moved into the cutting, bending, and applying station of the bail-applying mechanism.

3,444,906
APPARATUS FOR FILLING AEROSOL CANS
William Moonan, Shaker Heights, and Richard H. Skidmore, Lyndhurst, Ohio, assignors to Sprayon Products, Inc., Bedford Heights, Ohio, a corporation of Ohio
Filed Oct. 30, 1964, Ser. No. 407,771
Int. Cl. B65d *1/04, 3/04*
U.S. Cl. 141—20 6 Claims



1. An apparatus for charging material to be sprayed into an aerosol can containing a liquified propellant gas under pressure, the can having a normally closed discharge valve at the top thereof, the apparatus comprising a base, a cylinder member supported on the base and having a main working bore communicating at its lower end with a bore of reduced diameter that closely surrounds the discharge valve of a can disposed in the apparatus, means for forming a seal between the interior of the bore of reduced diameter and the exterior of the discharge valve of an aerosol can disposed in the apparatus and a reservoir for supplying material to be injected into the aerosol can to the working bore, a piston operable in the working bore for injecting material into the can and a valve member in the bore of reduced diameter for preventing leakage of material from the apparatus when the discharge valve is disengaged from the bore of reduced diameter, the means for forming a seal between the bore of reduced diameter and the exterior of the discharge valve also constituting a seat that is engageable by the valve member to prevent leakage from said bore when there is no aerosol can disposed in the apparatus and being lifted from its seat by direct engagement with the upper end of the discharge valve of an aerosol can that is positioned in the apparatus for charging.

3,444,907
SAW CHAIN
Earl L. Chadwick, P.O. Box 4484, Portland, Oreg. 97208
Filed Mar. 10, 1967, Ser. No. 622,350
Int. Cl. B27b *33/14*
U.S. Cl. 143—135 8 Claims



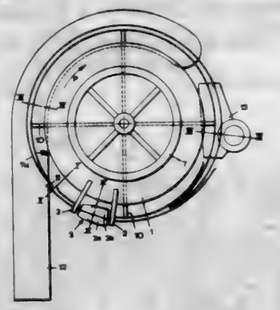
A saw chain having removable cutter teeth each of which is individually locked in place by the adjacent parts of the chain without rivets and each of which may be individually removed for replacement or repair by a manual manipulation of the saw chain and without any tools. The cutter teeth are locked in the saw chain so as to inhibit sloppy jumping of the cutter teeth as the saw chain moves at high speeds, thereby substantially eliminating gouging by providing substantially uniform cutting with all of the cutter teeth in the saw chain.

3,444,908
ADJUSTABLE HAMMER
Louis C. Roth, Torrance, Calif., assignor to Tandy Leather Company, Fort Worth, Tex., a corporation of Texas
Filed Oct. 17, 1966, Ser. No. 587,024
Int. Cl. B25d *1/00*
U.S. Cl. 145—36 5 Claims



A hammer specifically adaptable for hobby use wherein the head has recesses to selectively receive weights of different mass and wherein a generally cross sectional oval handle is insertible in the head with the latter optionally at right angles to either the major or minor cross sectional axes of the handle.

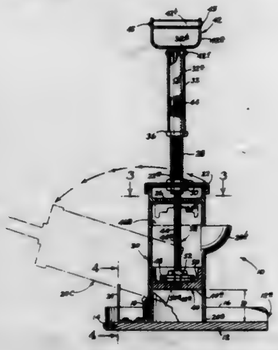
3,444,909
EGG BREAKING MACHINE
Cornelis Sol, Westzaan, Netherlands, assignor to Gerrit Timmerman, Landsmeer, Netherlands
Filed Oct. 10, 1966, Ser. No. 585,495
Int. Cl. A47j *43/14*
U.S. Cl. 146—2 1 Claim



An egg breaking machine is described with a series of egg carriers moving around a circular path and cooperating at portions of the path with a guide web. The shape of the egg carriers is such that an egg when inserted rolls down to a predetermined invariant position. As the carriers move around the path, egg hold-down means which are provided are raised, permitting introduction of an egg, and at the next station come down to hold the egg firmly in the carrier. At the next station an egg breaking hammer is introduced between the pivoted portions of the eggs and breaks the egg. In the next station the egg carriers encounter a guide web which moves them apart sufficiently to form a drainage channel for the egg yolk and egg white into suitable receptacles. This part of the guide

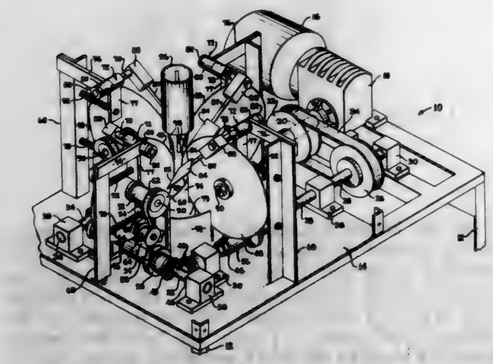
web holds the eggs shells from falling out during drainage. At the next section the guide web moves the pivoted portions of the egg carriers still further apart, permitting an empty egg shell to drop in a suitable container. This portion of the guide web moves the pivoted sections apart but has no shell breaking knives.

3,444,910
CRACKING APPARATUS
Gardello F. Webb, P.O. Box 335, Dallas, Oreg. 97338
Filed Feb. 13, 1967, Ser. No. 615,661
Int. Cl. A23n; A47j *43/26;* B30b *7/00*
U.S. Cl. 146—16 9 Claims



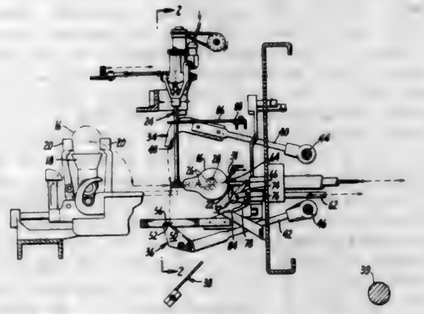
A cracking apparatus for cracking nutshells and like articles having a base, a plunger which is movable toward the base to crack articles positioned between the base and plunger, and stops for limiting the travel of the plunger including a movable stop which may be adjusted to vary the amount of travel permitted the plunger toward the base.

3,444,911
PEACH PITTING AND QUARTERING MACHINE AND THE LIKE
Frederic H. Land, Greenville, S.C., assignor to Bevis Industries, Inc., Providence, R.I., a corporation of Florida
Filed Mar. 10, 1967, Ser. No. 622,150
Int. Cl. A23n *3/12*
U.S. Cl. 146—28 7 Claims



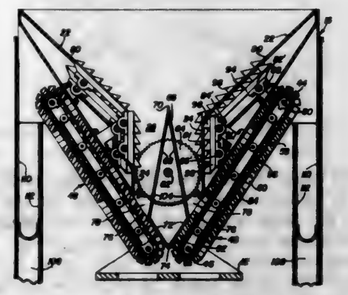
This invention relates to fruit pitting and quartering machines and more particularly to a device adapted to subdivide generally spherical or ovaloidal shaped fruit or vegetables into preferably quarters or other fractional parts while simultaneously depitting the fruit, without fracturing the pit, at a fast and continuous pace. Specifically, the instant invention provides a simplified machine which comprises cutting means including four rotary toothed blades resiliently mounted and with their planes angularly disposed generally in a convergent nearly intersecting manner at 90° apart, driven by suitable means in a common direction whereby the fruit is quartered and said fruit and the ejected pits are given a downward thrust; and the device further comprises a like number of resiliently mounted fruit stripping finger sub-assemblies all of which cooperate in a novel manner to aid in the removal of the fruit quarters away from a central pit collection tube.

3,444,912
PEAR QUARTERING DEVICE
Roland F. Blakewell and Robert H. Lanzinger, Oakland, and Malcolm W. Loveland, Orinda, Calif., assignors to Atlas-Pacific Engineering Company, a corporation of California
Filed Apr. 25, 1967, Ser. No. 633,614
Int. Cl. A23n *7/08, 3/12;* A47j *17/16*
U.S. Cl. 146—34 7 Claims



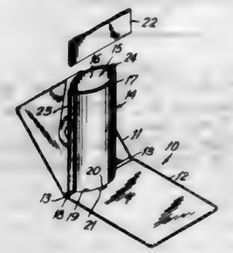
A quartering device for pear peeling machines having a single knife making one radial quartering cut and a T-shaped knife making three additional quartering cuts. The invention includes a novel folding finger push off device so there is no interference with the rotary peeling knife. A double finger is provided which bears against all four quadrants of the pear. A novel cam action is provided so that the rotary knife clears the erect push off finger on its return stroke and also includes means whereby all of the cams on a machine can be positioned with a single adjustment to accommodate different sizes of fruit.

3,444,913
SUGAR CANE PLANTER
James G. Arceneaux, Sr., Rte. 1, Box 138, Port Allen, La. 70767
Filed May 27, 1966, Ser. No. 553,444
Int. Cl. A01d *55/18;* B02c *13/00*
U.S. Cl. 146—98 20 Claims



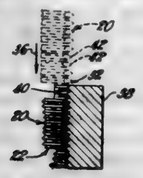
An upwardly opening receptacle for receiving cane stalks therein and including downwardly convergent lower sidewall portions defining a downwardly opening throat area therebetween. The receptacle includes cutting means operable to cut stalks advanced downwardly through the throat area and conveying means operable to engage and intermittently advance groups of stalks disposed in the lower portion of the receptacle downwardly through the throat area and into registry with and for cutting by the cutting means.

3,444,914
CREDIT CARD CARRIER
Walter K. French, Montrose, and Richard Taylor, Yorktown Heights, N.Y., assignors of twenty percent each to George M. Jaffin, Scarsdale, and Mark T. Basseches, Pleasantville, N.Y.
Filed Nov. 9, 1967, Ser. No. 681,708
Int. Cl. A45c *11/18*
U.S. Cl. 150—39 6 Claims



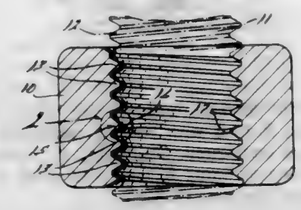
A credit card carrier including mechanism for reminding the owner to reinsert credit cards, characterized by providing a container which is three dimensional and which is rendered two dimensional, and hence compact, when the credit card is inserted therein.

3,444,915
THREAD LOCKING DEVICE AND METHOD
Richard E. Gerhardt and Raymond L. Thurston, Oakland County, Mich., assignors to Republic Industrial Corporation, New York, N.Y., a corporation of Delaware
Filed June 18, 1964, Ser. No. 376,143
Int. Cl. F16b *39/34, 39/28;* B21d *53/24*
U.S. Cl. 151—14 12 Claims



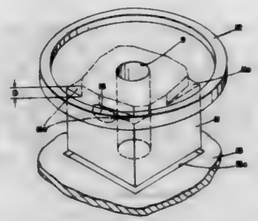
1. In a wire coil screw thread insert having a plurality of convolutions of helical form extending between opposite ends of the coil, the wire being of generally diamond-shaped cross-section, the improvement wherein over at least a portion of a convolution of the coil all portions of cross sections of the wire are deflected in a single direction beyond their elastic limit relative to the orientation of the wire over the remainder of the convolution so that the twisted portion has a permanent set and so that each twisted convolution has a cross-section wherein two opposed apices of the wire are displaced axially of the coil relative to each other and relative to the corresponding apices of the cross-section of the wire over the remainder of the convolutions of the coil, the deflected portion of the coil comprising a lead-in deflected portion, a fully deflected portion, and a lead-out deflected portion, said lead-in and lead-out portions being defined by surfaces which progressively blend from non-deflected portions of the coil to said deflected portion.

3,444,916
NONDIRECTIONAL LOCKNUT
Raymond L. Thurston, Dearborn, Mich., assignor to Republic Industrial Corporation, New York, N.Y., a corporation of Delaware
Continuation of application Ser. No. 542,186, Apr. 12, 1966. This application Feb. 12, 1968, Ser. No. 704,953
Int. Cl. F16b *37/28;* B21d *53/24*
U.S. Cl. 151—22 1 Claim



A nut having conventional internal threads at each end thereof with a pair of diametrically opposed axially deflected locking deformations intermediate the ends, whereby the nut can be assembled with a screw without regard to end for end orientation.

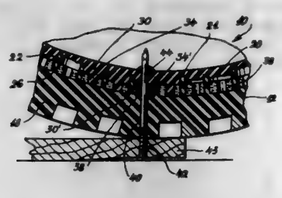
3,444,917
FASTENING DEVICE
Alan J. Bennett, Pontypridd, Wales, assignor to Tinnerman Products, Inc., Cleveland, Ohio, a corporation of Ohio
Filed June 14, 1966, Ser. No. 557,422
Claims priority, application Great Britain, June 16, 1965, 25,410/65
Int. Cl. F16b *39/00, 39/24*
U.S. Cl. 151—41.76 14 Claims



A rotary, fractional turn fastening device made from polymeric material including a head and a nut portion having a bore adapted to be inserted into the opening in a support member and adapted to be secured in place upon insertion of a threaded member through the bore. The head being connected to the nut portion by an intermediate portion adapted to be disposed in the opening in the support member having a plurality of relief surfaces to provide clearance upon rotary turning of the device

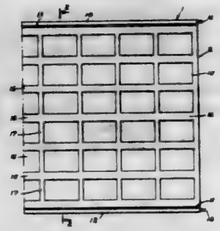
and a plurality of stop surfaces adapted for abutting engagement with the marginal edges of the opening to limit such rotary turning movement of the device with respect to the support member.

3,444,918
SELF-SEALING SAFETY TIRE
Franklin Goggins, White Plains, N.Y., assignor to True Car Value, Inc., White Plains, N.Y., a domestic corporation
Filed Apr. 24, 1967, Ser. No. 632,956
Int. Cl. B60c *5/12*
U.S. Cl. 152—347 **10 Claims**



The disclosure describes a safety tire having an outer or inner casing formed with pockets containing a fluid, puncture-sealing compound. Overlaying the inside of the casing is a facing or lining formed with plugs which extend into the pockets in the casing.

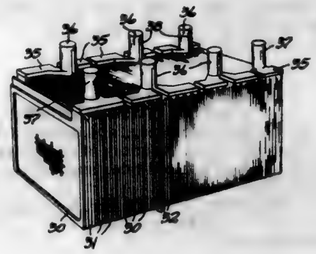
3,444,919
MULTIPLE PANEL SCREEN
Paul Karoll, 1552 Westgate Ave., Apt. 16, Los Angeles, Calif. 90025
Filed Aug. 5, 1968, Ser. No. 750,069
Int. Cl. E05d *15/00;* **E06b** *9/00, 9/24*
U.S. Cl. 160—184 **7 Claims**



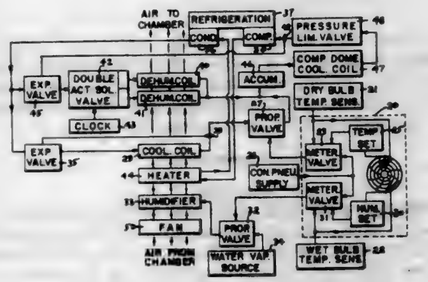
A multiple panel screen for regulating the visibility and the amount of light and air to be admitted through the same by passing air and light through a plurality of apertures arranged in opaque panels in vertical columns, separated by horizontal strips, and by staggering said panels vertically and bringing them closer in relation to each other for closing said apertures by said strips to a desired degree.

3,444,920
METHOD OF CASTING INTERCELL CONNECTIONS FOR BATTERIES
Charles H. McAlpine, Coloma, and Kenneth G. McGowan, Lawrence, Mich., assignors to Mac Engineering and Equipment Company, Benton Harbor, Mich., a corporation of Michigan
Filed May 2, 1966, Ser. No. 546,717
Int. Cl. B22d *19/00*
U.S. Cl. 164—108 **6 Claims**

A method of completely interconnecting a multicell battery by casting, which includes the casting of the lug straps within a single cell of a lead-acid battery while simultaneously casting intercell connectors for interconnecting the cells of a complete battery by a one-step casting operation for a complete battery unit suitable for dropping into a multicell container.

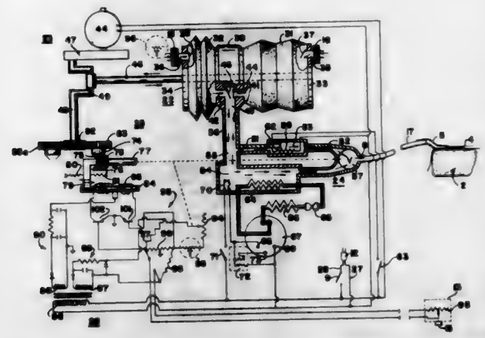


3,444,921
ENVIRONMENTAL CONTROL SYSTEM
Frank Carapico, Jr., 3025 Hermosa Lane, Havertown, Pa. 19083
Filed Sept. 5, 1968, Ser. No. 757,675
Int. Cl. F25b *25/02;* **F24f** *3/14*
U.S. Cl. 165—21 **14 Claims**



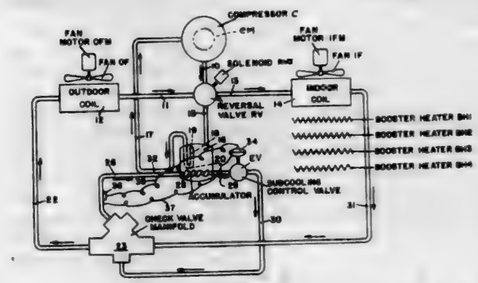
An environmental chamber control system including apparatus for automatically cooling, heating, humidifying and dehumidifying the chamber atmosphere in response to the settings of manually settable temperature and humidity controls utilized in conjunction with dry-bulb and wet-bulb temperature sensors. One system uses continuous dehumidification and heating combined with continuous'y modulated variable rate cooling and variable rate humidification, and a variant system uses continuous dehumidification with modulated variable rate humidification, variable rate cooling and variable rate heating, the cooling and heating apparati being controlled in a see-saw system. Dehumidification is effected by a refrigeration system of thermal absorption capacity less than the thermal input capacity of the heating apparatus to achieve dehumidification without affecting chamber temperature. Humidification is achieved with water vapor injection, and heating is preferably achieved by utilization of the heat content of the hot refrigerant gas discharged by the refrigeration system compressor. The temperature and pressure of the refrigerant gas returning to the compressor are monitored at the compressor inlet and regulated to prevent compressor overheating and overpressure, and liquid slugback is prevented by use of an accumulator in the suction line.

3,444,922
APPARATUS FOR PASSING FLOWING AIR ABOUT A BED OCCUPANT AT SELECTIVE TEMPERATURES
Edward H. Dingman, 8290 Chatfield Ave., Littleton, Colo. 80120
Filed Dec. 6, 1966, Ser. No. 599,429
Int. Cl. F25b *29/00*
U.S. Cl. 165—26 **4 Claims**



A method and apparatus for regulating the conditions of the air surrounding a bed occupant where there is produced a low volume of air flow which is selectively heated or cooled and then directed at a controlled rate in a diffused pattern under a covering and about the body of a bed occupant in a progressive flow to provide a continuous air exchange at a selected temperature about the bed occupant's body.

3,444,923
HEAT PUMPS WITH ELECTRIC BOOSTER HEATERS
William K. Kyle and Erik H. Jensen, Staunton, Va., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 2, 1968, Ser. No. 695,243
Int. Cl. F25b *29/00*
U.S. Cl. 165—29 **4 Claims**

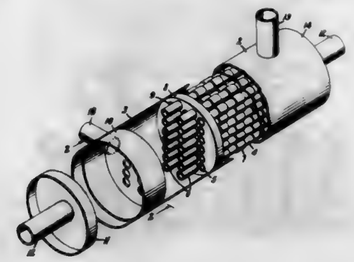


A heat pump has four electric booster heaters for adding heat to that from an indoor coil operating as a condenser coil, for heating indoor air when the outdoor temperature is low. An indoor heating control thermostat has two stages, the first one of which cycles the compressor of the heat pump. The second stage of the thermostat cycles the first booster heater, and cycles through a first outdoor thermostat, the second booster heater. The third and fourth booster heaters are cycled by second and third outdoor thermostats respectively.

ERRATUM

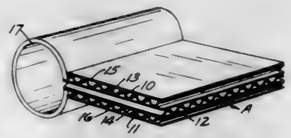
For Class 165—39 see:
Patent No. 3,445,317

3,444,924
HEAT EXCHANGER
Edward L. Lustenader, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed Nov. 25, 1966, Ser. No. 596,986
Int. Cl. F28d *7/00*
U.S. Cl. 165—164 **5 Claims**



A tube heat exchanger having thin tubes made of low thermal conductivity material lying adjacent each other and each tube has bands of highly thermal conductive material attached around its circumference to pass heat from tube to tube.

3,444,925
STRUCTURAL ARTICLES AND METHOD OF MAKING
James R. Johnson, White Bear Lake, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Continuation of abandoned application Ser. No. 26,372, May 2, 1960, which is a continuation-in-part of abandoned application Ser. No. 746,263, July 2, 1958, which is a continuation-in-part of application Ser. No. 657,503, May 7, 1957, now Patent No. 2,999,061. This application Dec. 17, 1963, Ser. No. 331,649
Int. Cl. F28f *3/00*
U.S. Cl. 165—166 **21 Claims**

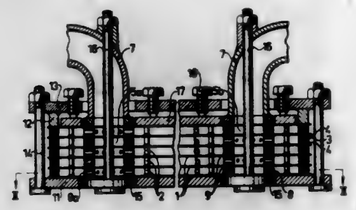


1. A fired ceramic structural article having a high surface area in relation to its size, and comprising at least one ceramic sheet member and at least one thin corrugated web of ceramic having an amplitude of corrugations at least as great as the thickness of said web, said corrugated web being no greater than 50 mils thick and being permanently ceramically bonded to said sheet member in a non-separable manner along at least a portion of some of the ridges on one side of said corrugated web so as to provide at least one set of aligned passages defined by grooves of said corrugated web between adjacent ridges permanently bonded to said sheet member, said article being formed by a process involving ceramically firing to rigidity a self-supporting green ceramic structure of like configuration having firm temporary bonds of green ceramic corresponding in location to said permanent ceramic bonds in said structural article, said green ceramic structure comprising materials convertible into said fired ceramic structural article by said ceramic firing, and said firm temporary bonds of said green ceramic structure being unified continuous material paths of green ceramic material between parts of said green structure so temporarily bonded.

3,444,926
ARRANGEMENT IN HEAT EXCHANGERS OF THE PLATE TYPE

Per Erik Ruben Stålberg, Lingbo, Sweden, assignor to AB Rosenblads Patenter, Stockholm, Sweden, a corporation of Sweden

Filed Nov. 28, 1967, Ser. No. 686,051
Int. Cl. F28f 3/08
U.S. Cl. 165—166 1 Claim

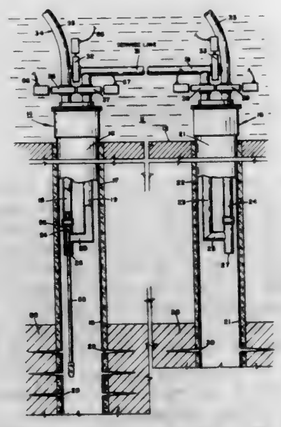


A heat exchanger of the plate type in which sealing rings cooperate with clamps to provide an adjustable, uniform sealing pressure throughout is disclosed. Packing rings of hard sealing material extend around the periphery of the plates and inner packing rings surround through passages within the plate assembly. Independently adjustable clamps acting on the outer and inner series of sealing elements provide an even distribution of sealing pressure.

3,444,927
SERVICING OF WELLS

Thomas W. Childers, Metairie, and Edmond R. Genois, New Orleans, La., assignors to Esso Production Research Company

Filed Nov. 21, 1967, Ser. No. 684,670
Int. Cl. E21b 33/035, 43/01, 7/12
U.S. Cl. 166—.5 10 Claims

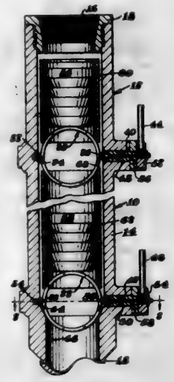


Horizontally spaced apart underwater wells each having at least two pipe strings arranged therein interconnected adjacent their lower ends and each having a flow line connected to the pipe strings and extending to a remote accessible location are serviced by fluidly interconnecting the wells at a point removed from the accessible location and flowing fluid into the first of the wells through its flow line and through the fluid interconnection; the fluid may be used to propel a well tool into one of the wells.

3,444,928
PLUG INJECTOR APPARATUS

Charles A. Pitts, Tulsa, Okla., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Nov. 3, 1967, Ser. No. 680,479
Int. Cl. E21b 33/05; B08b 9/02
U.S. Cl. 166—70 3 Claims

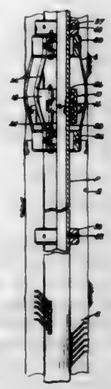


This invention relates to cement plug injector apparatus which is adapted to be rotated if desired. The plugs are enclosed in sleeves in the device which drop into place and seat in alignment with the well casing as the retainer elements are moved to the plug injection position.

3,444,929
CEMENTING METHOD AND APPARATUS

Joe R. Brown and Carl M. Schwab, Houston, Tex.; said Schwab assignor to Brown Tools, Inc., Houston, Tex., a corporation of Texas

Filed Aug. 31, 1966, Ser. No. 576,445
Int. Cl. E21b 37/02
U.S. Cl. 166—173 3 Claims



A method of and an apparatus for wiping the exterior of a well pipe in a well bore clean by reciprocating the well pipe through a wiping surface which is in contact with the well pipe exterior and is held against movement in the well bore.

3,444,930
OIL RECOVERY PROCESS BY MISCIBLE DISPLACEMENT

Robert E. Williams, Robert C. Ayers, Jr., and Claude E. Cooke, Jr., Houston, Tex., assignors to Esso Production Research Company, a corporation of Delaware

Filed Oct. 27, 1966, Ser. No. 590,458
Int. Cl. E21b 43/16, 43/20
U.S. Cl. 166—273 11 Claims



In the recovery of oil from a subsurface reservoir, a bank of polar organic solvent is injected into the reservoir followed by an aqueous detergent solution. The polar organic solvent and aqueous detergent solution are displaced into the reservoir by following flood water. The detergent employed in the aqueous detergent solution is an alkyl benzene sulfonate having one to seven alkyl carbon atoms. The volume of the injected solvent should be from about 3 to 20 percent of the flooded pore volume of the reservoir. The volume of the aqueous detergent solution injected should be about 3 percent to 20 percent of the flooded pore volume of the reservoir.

3,444,931
METHOD OF TREATING CLAY-CONTAINING FORMATIONS WITH GUANIDINE SALT SOLUTION

William B. Braden, Jr., Houston, Tex., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 24, 1967, Ser. No. 685,338
Int. Cl. E21b 43/27, 43/20, 43/22
U.S. Cl. 166—305 18 Claims

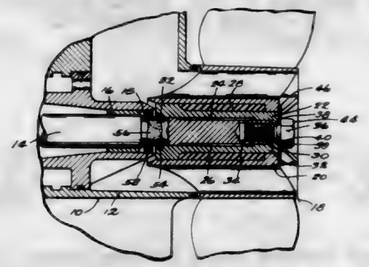
The invention is directed to a method of treating clay-containing formations to improve and/or restore water permeability by contacting the formation with a guanidine salt in a polar oxygenated aliphatic hydrocarbon solvent such as a lower alkanol or a mixture of such alkanols or dimethylsulfoxide or a mixture of dioxane and dimethylsulfoxide, then contacting the treated formation with an aqueous solution of hydrochloric acid, hydrofluoric acid, fluophosphoric acid or mixtures of such acids. The method is particularly applicable in recovering oil from water sensitive clay-containing formations by water or steam flooding as well as in completion and workover operations.

3,444,932
SEAL ARRANGEMENTS FOR MARINE PROPELLERS

Richard A. Wiezien, Niles, Ill., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware

Filed Aug. 17, 1967, Ser. No. 661,389
Int. Cl. B63h 1/12, 3/00; B64c 11/06
U.S. Cl. 170—160.54 7 Claims

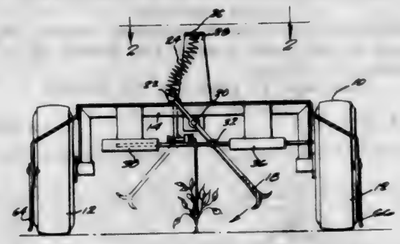
Disclosed herein are seal arrangements for marine propulsion lower units to seal the gear case cavity and the area between the propeller hub and propeller shaft from moisture and dirt. The rearward end of the propeller hub is sealed by a bolt and washer with the bolt extending through the washer and threaded into the propeller shaft. In one seal arrangement the forward end of the propeller hub is sealed by an O-ring located in an annular groove inside the hub. In other sealing arrangements for the forward end of the propeller hub, the seal is located between the hub and the gear case head with a shoulder on the hub securing the seal in place.



3,444,933
SELECTIVE THINNER FOR ROW CROPS

Francis O. Daellenbach, 1304 E. 5th St., Cheyenne, Wyo. 82001

Filed Aug. 4, 1966, Ser. No. 570,212
Int. Cl. A01b 41/02
U.S. Cl. 172—6 1 Claim

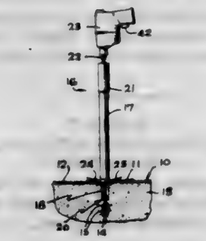


A selective thinner for row crops in which a microswitch and relay system are actuable to operate a cutting element for thinning plants in row crops in which there is a sensor provided for thinning the crops that is responsive by a tripping caused by a tender plant without causing damage or destruction to the plants being acted upon or removed.

3,444,934
LAWN WEEDER

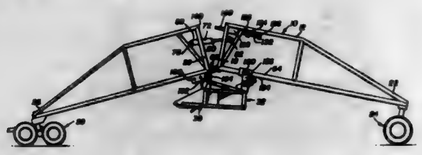
Carmen N. Alberto, 11202 Forbes Ave., Granada Hills, Calif. 91344

Filed Apr. 1, 1966, Ser. No. 539,404
Int. Cl. A01b 33/06; A10b 13/00
U.S. Cl. 172—25 9 Claims



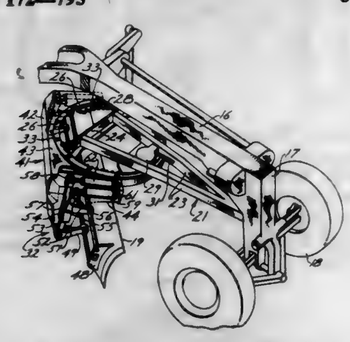
This invention relates to weeding devices and more particularly to a novel weeding device effective to destroy or permanently damage a variety of weed and plant growths regardless of root depth, fibrous texture of the root, or extent of the root system.

3,444,935
LAND SURFACE SHAPING APPARATUS
Glendon M. Purdy, 509 S. 1st St.,
McGehee, Ark. 91654
Filed July 12, 1966, Ser. No. 564,570
Int. Cl. E02f 3/62; A01b 61/04
U.S. Cl. 172—780 11 Claims



A frame assembly having two longitudinally aligned sections hinged connected at confronting portions for swinging movement of the sections from a horizontal position to upwardly raised angular positions. An earth moving blade structure is connected to one frame section in a manner permitting the blade to ride over small obstacles. Contact between the blade and larger obstacles cause the aforementioned swinging movement of the plane sections which permits the blade to ride over these larger obstacles.

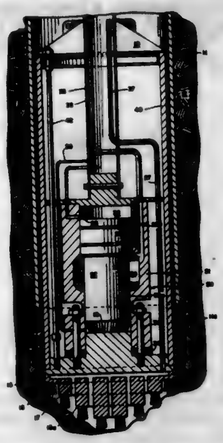
3,444,936
MOTOR GRADER BLADE ADJUSTING MECHANISM
Russell D. Page and Gene B. Easterling, Decatur, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Sept. 19, 1966, Ser. No. 580,472
Int. Cl. E02f 3/12
U.S. Cl. 172—795 8 Claims



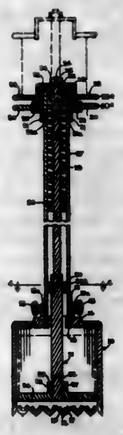
The blade of a motor grader is coupled to the blade circle thereof through a parallelogram linkage and control means are provided whereby the blade elevation may be changed without disturbing the tip setting. Conversely, the tip may be adjusted without changing the elevation. Both adjustments are effected rapidly from the driver's station and without operation of the primary blade position controls.

3,444,937
BORING APPARATUS WITH VALVELESS IMPACTOR
Henry G. Warrington, Palm Beach, and George C. Manning, Riviera Beach, Fla., assignors to Vulcan Iron Works Inc., Chattanooga, Tenn., a corporation of Illinois
Filed June 7, 1967, Ser. No. 644,395
Int. Cl. E21b 1/06, 5/00
U.S. Cl. 175—92 8 Claims

There is provided an improved drilling or boring device for use in a borehole for drilling or boring into rock and having both a drill head carrying conventional cutter bits provided with an impact pintle, and an impactor positioned to impart percussion impacts on the impact pintle. Thus there is provided simultaneous rotation and percussion impacts on the drill bits. The method of boring includes the simultaneous provision of such rotary motion to the drill bits and the imparting of the percussion impacts thereto.



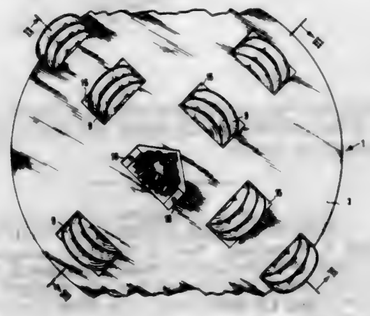
3,444,938
GROUND SOIL CORING IMPLEMENT
Vincent H. Ballmann, 10028 Breckenridge,
St. Ann, Mo. 63074
Filed Nov. 1, 1967, Ser. No. 679,845
Int. Cl. E21b 25/00, 3/02; G01d 21/00
U.S. Cl. 175—173 4 Claims



The specification discloses an implement for cutting a soil core having a core ejection means. The cutter is cylindrical and has a series of teeth on the lower edge adapted to cut in either direction of rotation. The core ejection means includes a piston type plate movably fitted within the cutter and being threadedly connected to a rod having a screw threaded extent for threadedly engaging a nut within a hollow shaft detachably connected to the cutter. Spring means are provided in the space between the rod and shaft which bears upon the nut, thereby

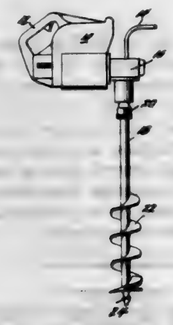
urging the plate downwardly toward cutter closing position. Separate handles are provided on the rod and shaft of the implement to provide for manual operation.

3,444,939
CUTTING ROLLER IN PARTICULAR ROLLER-TYPE ENLARGING BITS
Karl Günther Bechem, Trefendorfer Weg,
Hagen, Germany
Continuation-in-part of application Ser. No. 385,424 July 27, 1964. This application Dec. 11, 1967, Ser. No. 689,608
Int. Cl. E21b 9/24
U.S. Cl. 175—334 1 Claim



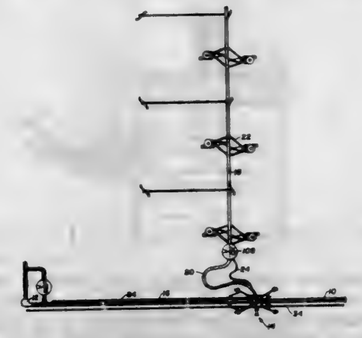
The specification describes an improved form of rock boring tool with cutting rollers projecting through openings in a shield. The shield is conical and the cutting ribs of the rollers make contact with the rock to be cut along lines generally parallel to the shield face.

3,444,940
AUGER AND BIT THEREFOR
Owen H. Thomas and Cecil E. Watson, Medford, Ore., assignors to Southern Oregon Reforestation, Inc., Medford, Oreg., a corporation of Oregon
Filed Aug. 23, 1967, Ser. No. 662,791
Int. Cl. E21c 13/04
U.S. Cl. 175—394 10 Claims



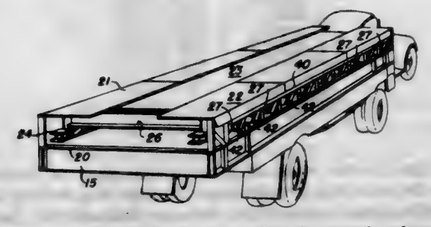
The invention comprises an auger bit for an auger having a leading digging bit, a spiral cutting and deflecting fin formed laterally along the bit, and a split spiral blade having a leading cutting edge and an internal locking groove for receiving the leading end of the auger spiral flight. A rotary power source is provided for the auger, in threaded union with the auger shaft. A torque transmitting collar is inserted about the threaded union for transferring torque from the power source directly to the auger shaft, bypassing the threaded union.

3,444,941
AUTOMATIC IRRIGATOR
Rufus J. Purtell, Brownfield, Tex., assignor, by mesne assignments, to Tri-Matic Inc., Terry County, Tex., a corporation of Texas
Filed June 9, 1966, Ser. No. 561,670
Int. Cl. A01g 25/02; B05b 3/18
U.S. Cl. 137—14 15 Claims



A traveling sprinkler pipe is mounted on vehicles for continuous movement while watering. The traveling pipe is connected by a hose to a valve on a main supply pipe. Periodically the hose is automatically disconnected from the valve on the main supply pipe and moved by a trolley to the next valve on the main supply pipe. A garden hose supplies water under pressure as a source of power to the trolley while it is disengaging the hose from one valve and moving it to the next.

3,444,942
TRANSPORTABLE SCALE WITH EXTENSIBLE DECK
Leslie Roy Murphy, Sacramento, Calif., assignor to L. R. Murphy Scale Company, Sacramento, Calif., a corporation of California
Continuation-in-part of abandoned application Ser. No. 611,014, Jan. 23, 1967. This application May 28, 1968, Ser. No. 738,370
Int. Cl. G01g 21/28
U.S. Cl. 177—126 15 Claims



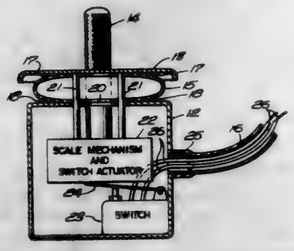
A transportable scale. Outrigger brackets project laterally out from the side of the weighbridge between and spaced from upper and lower flanges. An outrigger, more than twice as long as the brackets, is pivotally supported by each outrigger bracket and the upper flange. The outriggers can be swung out individually in line with cross members that join the side members of the weighbridge frame to extend the effective width of the weighbridge frame or can be swung in individually so as to extend out no further than the outrigger brackets. An outrigger support member extends up angularly at about 45° from the lower flange to the lower surface of the outrigger at a locus well beyond the outrigger bracket, the support member being secured to the outrigger and pivotally mounted on the lower flange. Accuracy in weighing is preserved by matching 45° angle braces for each cross member, generally in line with each 45° support for the outriggers.

3,444,943

WEIGHING SYSTEM WITH SEALED ENCLOSURE

Hulbert T. Tytus, 56 Hancock St., Cambridge, Mass. 02138

Filed Aug. 28, 1967, Ser. No. 663,594
Int. Cl. G01g 21/28
U.S. Cl. 177—180 6 Claims



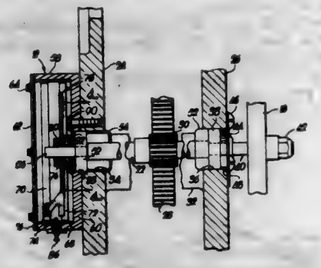
A weighing system having a scale platform and a variable volume sealed enclosure which is provided with an air breather tube to allow the interior of the enclosure to remain at atmospheric pressure despite volume changes. The air breather tube provides a protective conduit for the wires from the electromechanical scale-relay mechanism within the enclosure as well as providing air breathing means remote from the enclosure. The volume of the enclosure varies directly with movement of the scale platform.

3,444,944

SCALE POTENTIOMETER MOUNTING

Don R. Bailey, Webb City, Mo., assignor to Cardinal Scale Manufacturing Co., Webb City, Mo., a corporation of Missouri

Filed Sept. 7, 1966, Ser. No. 577,708
Int. Cl. G01g 7/00, 23/36
U.S. Cl. 177—210 3 Claims



The pointer shaft of a scale dial head is connected to the rotor of a circular potentiometer to provide a linear analog signal representing the scale indication of the dial head. A protruding bearing is employed as a centering guide in the mounting of the housing of the potentiometer to a frame member of the scale mechanism, in order to align the axis of the shaft and the axis of the potentiometer tracks to assure that the increased drag on the scale mechanism will be uniform.

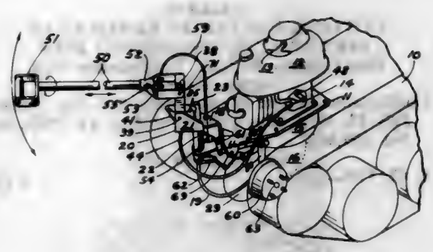
3,444,945

VEHICLE CONTROL

John E. Coordes, Birmingham, and Samuel H. Fuller, Jr., Warren, Mich., assignors to the United States of America as represented by the Secretary of the Army

Filed Feb. 27, 1967, Ser. No. 619,529
Int. Cl. B62d 51/04, 55/00
U.S. Cl. 180—19 7 Claims

An apparatus for vehicle control that may be built as a separate unit and secured to a small tracked load carrying device, or that may be utilized with a wheeled vehicle, whereby the vehicle is controlled by a single control means. The apparatus includes a steering handle, a transmission control, a carburetor control, a steering and parking brake control and an engine kill switch actuated by dropping the handle.

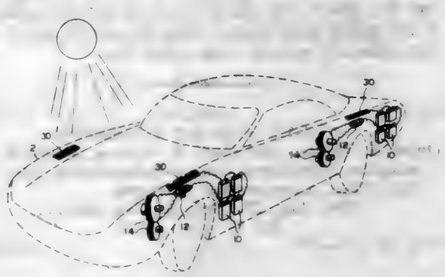


3,444,946

SELF-ELECTRIC-POWERED VEHICLE

Nelson J. Waterbury, New York, N.Y., assignor of one-half to Nicholas R. du Pont, Wilmington, Del.

Filed Oct. 3, 1966, Ser. No. 583,889
Int. Cl. B60k 1/02, 1/04; B60l 11/18
U.S. Cl. 180—65 6 Claims



An electric motor driven vehicle having at least one electric motor to supply power to said vehicle, the improvement which comprises a system associated with each electric motor to supply electric power thereto comprising batteries arranged in series, and either a solar cell supplying energy to said batteries, a power-generating means with paddle wheel and venturi tube or both adapted to supply power to said batteries. The above combination may be used either alone or in conjunction with a conventional internal combustion engine.

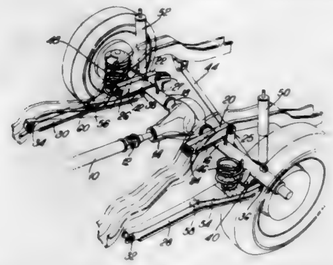
3,444,947

DRIVE AXLE SUSPENSION SYSTEM FOR RESILIENTLY RESISTING ACCELERATION WIND-UP

Harry Ronald Stocks, Dunstable, and Dennis John Gladstone, Luton, England, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Oct. 5, 1967, Ser. No. 673,177
Claims priority, application Great Britain, Oct. 13, 1966, 45,736/66
Int. Cl. B60g 9/02, 11/16
U.S. Cl. 180—71 8 Claims

In a motor vehicle suspension system, an arm rigid with a housing for a rigid drive axle carries a resilient snubber, and wind-up of the axle housing induced by acceleration of the vehicle is resiliently resisted by engagement of the snubber with a pivotal guide link for the axle housing.

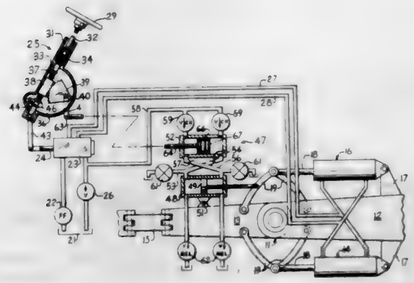


3,444,948

HYDRAULIC FOLLOW-UP FOR VEHICLE STEERING SYSTEMS

Donald L. Bianchetta, Coal City, and John A. Junck and Joseph Kokaly, Joliet, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California

Filed Feb. 1, 1967, Ser. No. 613,253
Int. Cl. B62d 5/00; F15b 13/16
U.S. Cl. 180—79.2 8 Claims



Pivoting of one portion of a vehicle relative to the other for steering purposes is effected by hydraulic jacks controlled with a steering wheel. A hydraulic circuit feedback system senses the pivoting movement and deactivates the jacks when turning of the steering wheel ceases so that the operator may steer the vehicle by manipulating the wheel in a conventional manner.

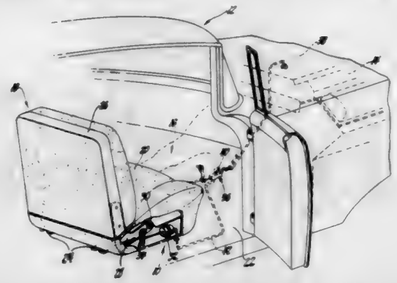
3,444,949

SAFETY LATCH FOR HINGED SEAT BACK

Samuel C. Pollock, Rochester, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed July 28, 1967, Ser. No. 656,797
Int. Cl. B60r 21/00
U.S. Cl. 180—82 2 Claims

A seat back lock for a vehicle seating unit having a forwardly pivoting seat back wherein a vacuum motor, responsive to intake manifold vacuum and regulated by a valving mechanism connected to the transmission, operates a latching mechanism that securely anchors the seat back to the seating cushion whenever the engine is operating and the transmission is conditioned for drive.

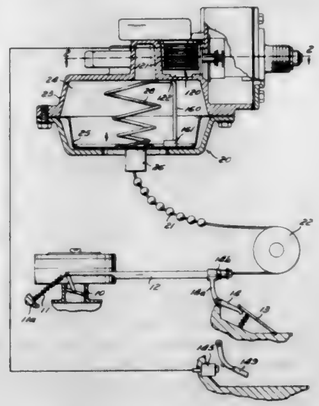


3,444,950

VEHICLE SPEED GOVERNOR

Martin W. Ultvlugt, Battle Creek, Mich., assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio

Filed Aug. 3, 1966, Ser. No. 569,985
Int. Cl. B60k 31/00
U.S. Cl. 180—105 10 Claims



A vehicle control mechanism is controlled by electrically energizable coil means, which coil means is energized by a switch mechanism. The switch mechanism is controlled by a speed sensing means movable in accordance with vehicle speed. The switch mechanism comprises a self-biased over-center snap-acting mechanism operated by the speed sensing means and movable by the speed sensing means against its self-bias to an over-center position in which the switch is closed and which opens when the vehicle speed decreases below the predetermined speed.

3,444,951

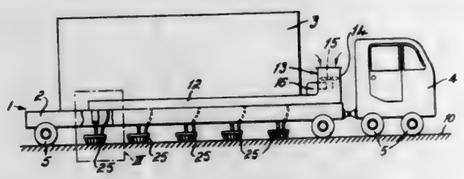
PLURAL CUSHION LOAD TRANSPORTER DEVICE

Leslie Arthur Hopkins, Dibden Purlieu, England, assignor to Hovercraft Development Limited, London, England, a British company

Filed June 7, 1967, Ser. No. 644,182
Claims priority, application Great Britain, June 15, 1966, 26,745/66
Int. Cl. B60v 1/02
U.S. Cl. 180—121 4 Claims

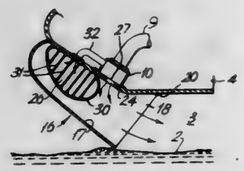
A load transporter comprises a platform supported by a series of ground-following air-cushioned units of

"plenum chamber" form, the cushion of each unit being contained by an inwardly tapering flexible skirt. The units are urged towards the ground by constant load



springs and in normal operation the downward loading of a spring is balanced by the upward thrust of a cushion, the bottom of each skirt being collapsed against the ground.

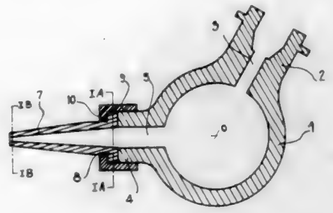
3,444,952
SKIRT RESTORING MEANS FOR GAS-CUSHION VEHICLES
Peter John Clarke, Southampton, England, assignor to Hovercraft Development Limited, London, England, a British company
Filed Mar. 16, 1967, Ser. No. 623,767
Claims priority, application Great Britain, Mar. 30, 1966, 14,131/66
Int. Cl. B60v *1/16, 3/00*
U.S. Cl. 180—127 **11 Claims**



A gas-cushion vehicle for operation over water wherein at least the front end of the cushion is contained by a flexible skirt. To prevent "plough-in" of the vehicle caused by drag loads on the skirt, an inflated bladder is disposed between the skirt and the vehicle body so that inward deflection of the skirt is resisted by resilience of the bladder.

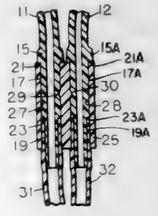
3,444,953
DEVICE TO AVOID THE PULSATION OF THE GAS BUBBLES GENERATED BY UNDERWATER EXPLOSIONS
Jacques Cholet, Rueil Malmaison, Jean Pierre Fail and Gerard Grau, Paris, and Pierre Magneville, Vernouillet, France, assignors to Institut Francais du Petrole des Carburants et Lubrifiants
Filed Sept. 15, 1967, Ser. No. 667,998
Claims priority, application France, Sept. 16, 1966, 76,741; Oct. 4, 1966, 78,782; Nov. 23, 1966, 84,742; Jan. 13, 1967, 91,173
Int. Cl. G10k *10/00*
U.S. Cl. 181—.5 **11 Claims**

A device to avoid the pulsations of the gas bubbles generated by underwater explosions which comprises a container provided with a mouth-piece having an internal pipe for feeding from a surface installation the explosives to the container; the container itself includes at least one resilient closing and opening element which provides in effect an intermittent conection of the interior of the container with the surrounding liquid medium by deformation under the action of the pressure rise within the container as a result of the explosion. The container may be of substantially spherical shape, and the opening and



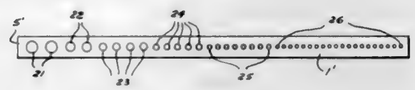
closing element may be constituted by a tubular extension of the sphere.

3,444,954
STETHOSCOPE
Thomas Albert Scanlon, Barrington, R.I., assignor to PM & E Electronics, Inc., East Providence, R.I., a corporation of Rhode Island
Filed Aug. 8, 1966, Ser. No. 571,022
Int. Cl. A61b *7/02*
U.S. Cl. 181—24 **1 Claim**



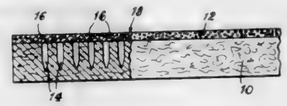
Stethoscope with tubular arms pivotably and removably held in a sleeve.

3,444,955
DIRECTIONAL MICROPHONE WITH SUBSTANTIALLY FREQUENCY-INDEPENDENT DIRECTIONAL CHARACTERISTICS
Otto Hoffmann, Hangelar, Siegburg, Germany, assignor to Sennheiser Electronic, Bissendorf, Hannover, Germany
Continuation of application Ser. No. 450,714, Apr. 26, 1965. This application Nov. 8, 1967, Ser. No. 681,599
Claims priority, application Germany, Aug. 1, 1964, S 92,431
Int. Cl. G10k *13/00*
U.S. Cl. 181—31 **14 Claims**



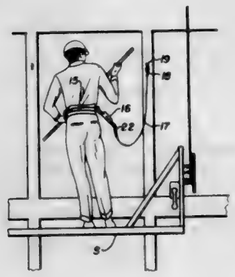
A directional microphone including a mechanical-electrical transducer and a single directional tube for directing sound to this transducer. This tube is positioned with one end adjacent the transducer and having at the opposite end opening means adapted to be located closest to the source of sound. The tube is provided with longitudinally extending acoustic resistance means formed in the wall of the tube and having an acoustic resistance of a particular type.

3,444,956
FOAM SURFACED ACOUSTICAL BODY
Bernard James Gaffney, Stillwater, Minn., assignor to Conwed Corporation, St. Paul, Minn., a corporation of Delaware
Filed Feb. 8, 1966, Ser. No. 525,896
Int. Cl. G10k *11/04;* **E04b** *1/99*
U.S. Cl. 181—33 **7 Claims**



An acoustical panel for use on ceilings, walls, and the like comprised of a body layer of porous material, preferably fiberboard, and a surface layer of open-cell foam and in which there are a multiplicity of acoustical openings through the foam and into the body layer which openings at the surface are closed by the resiliency of the foam.

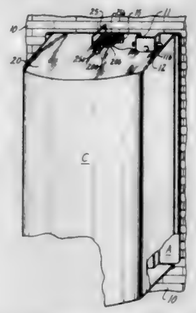
3,444,957
SHOCK ABSORBER FOR SAFETY BELT
Robert Gilpin Ervin, Jr., Denver, Colo., assignor to Rose Manufacturing Company, Denver, Colo., a corporation of Colorado
Filed Dec. 13, 1967, Ser. No. 690,137
Int. Cl. E06c *7/18;* **A62b** *1/16, 35/00*
U.S. Cl. 182—3 **5 Claims**



A shock absorber for a safety belt assembly formed as a folded web connected in tandem with the safety belt lanyard. The folded web is transversely stitched with the stitching being adapted to be ripped apart in checking a fall of a workman wearing the safety belt assembly, the stitching thus producing a shock absorbing effect to decelerate the fall of the workman. As an improved feature, the stitching pattern is arranged to provide for a substantially uniform force of deceleration.

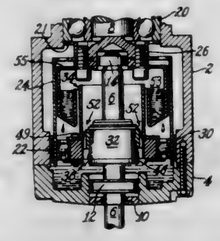
3,444,958
COLLAPSIBLE FIRE ESCAPE LADDER ASSEMBLY
Andrew A. McCall, R.D. 1, Curwensville, Pa. 16833
Filed Nov. 7, 1967, Ser. No. 681,292
Int. Cl. E06c *1/00*
U.S. Cl. 182—93 **12 Claims**

A compact ladder device or construction is provided which is suitable for mounting below a window sill on the outside vertical wall of a building. The construction uses three main parts, a mounting base member, a removable cover, and a collapsible and extensible ladder assembly. The ladder assembly has a telescopic series of interconnected ladder parts that are adapted to be carried in a collapsed position on the base member and to be enclosed



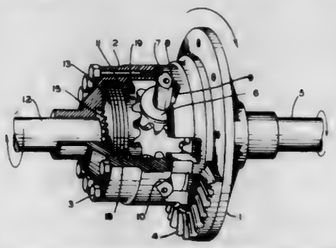
within the cover member for immediate use in an emergency.

3,444,959
LUBRICATION PUMPING SYSTEM
Donald L. Mansfield, South Hamilton, and Peter C. Tappan, Beverly, Mass., assignors to U.S.M. Corporation, Boston, Mass., a corporation of New Jersey
Filed Aug. 1, 1966, Ser. No. 569,414
Int. Cl. F16n *7/36;* **F01m** *1/00;* **F04b** *19/00*
U.S. Cl. 184—6 **8 Claims**



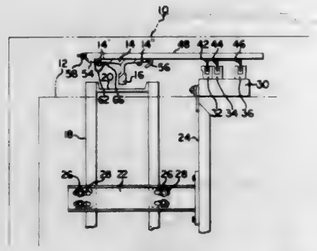
An all-attitude lubrication system for use in a mechanism within a sealed chamber comprising a rotatable shaft within a chamber and at least two pump elements mounted upon the shaft enabling lubricant stored within the chamber to be pumped axially on said shaft independently of the attitude of the mechanism. The pumps are designed so that the pumping section of one of the pumps will be directly opposite a nonopposing section of the adjacent pump.

3,444,960
ANTICHATTER LUBRICATION
Robert Killius, St. Louis, and Roy W. Wiesenborn, Hazelwood, Mo., assignors to Monsanto Company, a corporation of Delaware
Filed Dec. 27, 1966, Ser. No. 604,740
Int. Cl. F01m *1/00;* **F16n** *17/06, 29/00*
U.S. Cl. 184—6 **2 Claims**



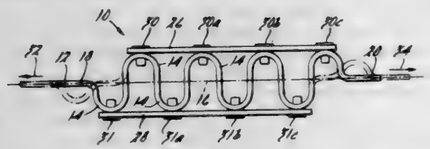
Means and method for reducing clutch plate chatter in a limited slip differential which comprises introducing a controlled flow of oil to the clutch plates.

3,444,961
ELEVATOR HATCH EQUIPMENT MOUNTING BRACKET ASSEMBLY
Donald T. Soule, Toledo, Ohio, assignor to The Reliance Electric and Engineering Company, Cleveland, Ohio, a corporation of Ohio
Filed May 29, 1967, Ser. No. 641,905
Int. Cl. B66b 9/00, 1/00; E04g 3/00
U.S. Cl. 187—1 6 Claims



A bracket assembly for use in elevator systems mountable on a guide rail in an elevator hatchway. The bracket assembly includes a holddown clip means for temporarily retaining the bracket assembly to the guide rail and a J-shaped bolt and cooperating bearing points with means for adjusting the relative spacing therebetween to effect a secure mounting between the guide rail and the bracket assembly in a fixed angular relationship. The bracket may be employed for supporting a switch vane assembly of the leveling mechanism for controlling elevators.

3,444,962
ENERGY DISSIPATING DEVICE
Frederick A. Lech, Melvindale, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed June 14, 1967, Ser. No. 645,937
Int. Cl. F16d 63/00; B60r 21/10; A47d 15/00
U.S. Cl. 188—1 9 Claims

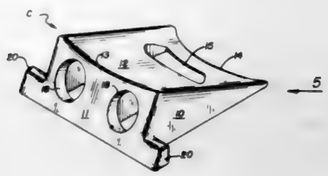


A waved expander energy dissipating device adapted for use in a motor vehicle passenger restraint system. The device includes an elongated metal strap having a shape including a plurality of similar waves extending transversely on both sides of the longitudinal axis of the strap. On both sides of the strap are positioned elongated restraining members that are secured to the apexes of the waves by rivets. Upon a longitudinal tensile or compressive force being applied to the strap, the ultimate shear strength of the rivets is substantially the same as the ultimate bending load of the individual waves.

3,444,963
WHEEL CHOCK
Carl B. Davis, 2333 S. Raleigh St., Denver, Colo. 80219
Filed Aug. 21, 1967, Ser. No. 661,998
Int. Cl. B60t 3/00
U.S. Cl. 188—32 4 Claims

A wheel chock formed as a wedge-shaped unit with triangular sides, an upright heel plate and a web plate forming the inclined surface whereon a wheel will press when chocked. The web plate is adapted to accommodate wheels of diverse size by a trough-like recess of varying curvature from the toe to the top of the heel portion. Each chock includes a handhole grip at the narrowed toe end of the web plate to permit a pair of chocks to be held together in opposition with the two handholes in registration for convenient portage by the pair.

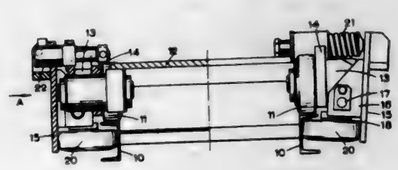
The underside of each chock, at the underside of the heel plate, is provided with a transversely disposed, sharp-cornered bar adapted to bite into the ground, pavement or ice to secure the chock against slipping. This bar is formed



as a square-sectioned rod which is mounted within a trough-like socket at the underside of the heel plate and is removably secured within this socket by an arrangement of machine screws which permit the bar to be rotated from one position to another to advantageously use all four edges of the bar for surface gripping.

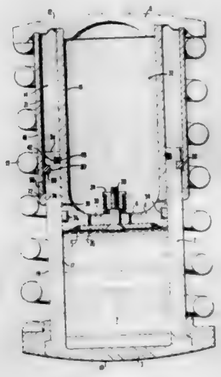
Each end of the heel plate is extended beyond the adjacent triangular side of the chock as a comparatively heavy abutment which is adapted to withstand the blow of a sledge hammer or the like which may be necessary to remove the chock when it is tightly clamped under a wheel, and a simple pry action by inserting a bar into cored holes in the heel plate.

3,444,964
TRACK BRAKING SYSTEM
George Wells Bartley, Newton Aycliffe, England, assignor to Underground Mining Machinery Limited, near Darlington, Durham County, England, a British company
Filed Mar. 2, 1967, Ser. No. 620,079
Claims priority, application Great Britain, Mar. 16, 1966, 11,425/66
Int. Cl. B61h 13/12, 7/00
U.S. Cl. 188—39 6 Claims



A braking system for a vehicle with load-bearing wheels and guide wheels engaging two rails forming a track for the vehicle. The braking system acts solely on the guide wheels and utilizes flat plates to urge the guide wheels against vertical walls of the rail by trapping the guide wheels between the vertical walls and the plates. The guide wheels should continue to rotate during braking and to achieve this the frictional force developed between the periphery of the guide wheels and the vertical walls of the rails is made greater than the frictional force developed between the periphery of the guide wheels and the flat plates.

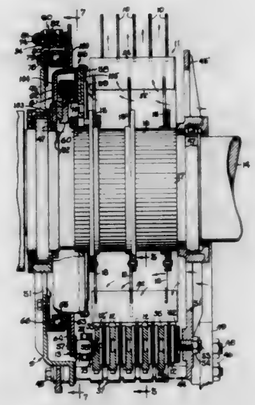
3,444,965
SHOCK ABSORBER AND PISTON GUIDE MEANS
Joe W. Dobkins, Fort Worth, Tex., assignor to Halliburton Company, Duncan, Okla., a corporation of Delaware
Filed Sept. 29, 1967, Ser. No. 671,809
Int. Cl. F16d 57/00; F01b 31/00, 29/00
U.S. Cl. 188—96 4 Claims



A shock absorber which includes a cylinder defined by a cylinder wall having inner and outer peripheral surfaces and one open end defined by a free edge of the cylinder wall. A piston telescopingly received within the cylinder includes a high pressure end in engagement with a body of liquid and a low pressure end facing a cavity. Passage means in the piston means permits passage of fluid between the high pressure end and the low pressure end. Pressure responsive restrictor means connected with the piston means increase and decrease flow of fluid through the passage means during motion of the piston means away from and into the body of fluid respectively. Guiding means for guiding the piston axially of the cylinder includes an inner guide wall fixedly connected with the piston slidably abutting the inner surface of the cylinder wall and a concentric outer guide wall fixedly connected with the inner guide wall overlapping and telescopingly related to the outer surface of the cylinder wall. A window extends through the outer guide wall and the latter may be telescoped to align the window with a groove in the outer peripheral surfaces of the cylinder wall. A plurality of arcuate bearing segments are inserted separately through the window into the groove and extend from the groove into snug sliding contact with adjacent portions of the outer guide wall. The shock absorber also includes two oppositely facing, convexly curved, mounting surfaces one of which is connected with the piston means and the other with the cylinder means. The mounting surfaces are adapted to support the shock absorber between two vertically movable members to permit rolling and sliding movement of the shock absorber relative to the members.

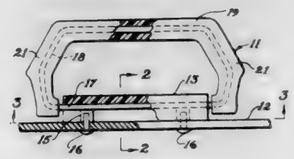
3,444,966
DISK BRAKE WITH BUTTON-TYPE SHOES AND AIR COOLING
Ronald E. Braukhoff, Beloit, Wis., assignor to Warner Electric Brake & Clutch Company, South Beloit, Ill., a corporation of Delaware
Filed July 14, 1967, Ser. No. 653,410
Int. Cl. F16d 65/78, 55/00, 13/60
U.S. Cl. 188—264 6 Claims

A plurality of thin axially spaced friction rings are splined onto radially disposed and angularly spaced fan vanes spanning apertured end disks fixed on a drive shaft thus forming a squirrel cage fan. Pairs of friction buttons engageable with opposite sides of each ring float



axially on two part stationary supports between the backs of adjacent buttons. A power actuator is energized to compress the buttons and rings together axially and thus develop a retarding torque applied to the shaft.

3,444,967
REINFORCED LUGGAGE HANDLE AND MOUNTING MEMBER
Leon Lautin, 43 White Drive N., Cedarhurst, N.Y. 11516
Filed June 21, 1967, Ser. No. 647,737
Int. Cl. A45c 13/26
U.S. Cl. 190—58 2 Claims

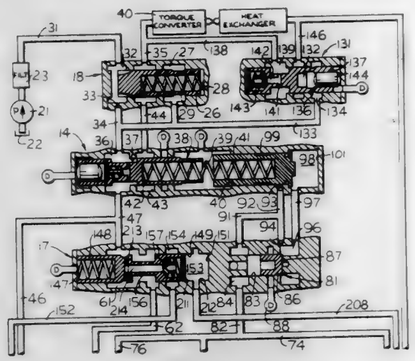


A plastic handle having a continuous loop reinforcing wire frame. A plastic mounting member is utilized for securing the handle to luggage.

3,444,968
FLUID CONTROLS FOR AUTOMATICALLY NEUTRALIZING A VEHICLE TRANSMISSION
Kenneth F. Golan, Pekin, David S. Ohaver, Farmington, Shairyl I. Pearce, East Peoria, and Gerald D. Rohweder, Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Original application Feb. 1, 1966, Ser. No. 523,980, now Patent No. 3,389,770. Divided and this application Feb. 7, 1968, Ser. No. 712,887
Int. Cl. F16d 41/24, 67/00; F16h 57/10
U.S. Cl. 192—4 2 Claims

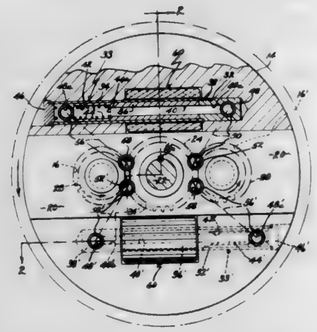
A vehicle transmission including hydraulically actuated friction clutches controlled by a system including a safety valve 17 which automatically closes to disconnect a pressure source from at least some of the clutches so that the transmission will not move the vehicle when its engine is started. A transmission selector valve, when moved to

neutral position, directs fluid to the safety valve to hold it open. A neutralizer valve **201**, which may be operated



by brake pressure, is connected to the safety valve to selectively cause it to open and close.

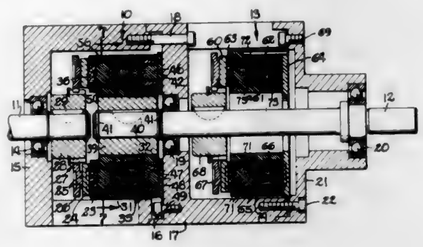
3,444,969
HYDROSTATIC POWER-LOAD COUPLING
Emil Berklege, 30209 Thomas St., Willowick, Ohio 44094
Filed Apr. 24, 1967, Ser. No. 633,177
Int. Cl. F16d *31/04, 23/10, 43/24*
U.S. Cl. 192—61 **4 Claims**



A power-load coupling mechanism including a pressurized fluid circuit, responsive to speed, for coupling a rotary driving member to a rotary driven member. When fluid flows the driving and driven member have relative movement with respect to one another. When no fluid flows the driving and driven members rotate in unison with no relative movement with respect to one another.

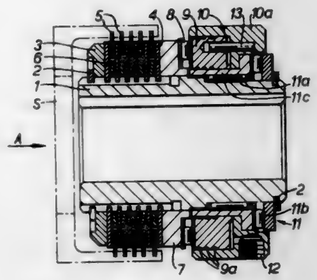
3,444,970
MAGNETIC FRICTION COUPLING WITH PARTLY LAMINATED FLUX CIRCUIT
Robert H. Clark, Stevensville, Mich., and Philip E. Myers, Beloit, Wis., assignors to Warner Electric Brake & Clutch Company, South Beloit, Ill., a corporation of Delaware
Filed May 5, 1967, Ser. No. 636,382
Int. Cl. F16d *27/00, 37/02, 19/00*
U.S. Cl. 192—84 **12 Claims**

A magnet core of U-shaped cross section encloses a winding in the toroidal flux circuit of a friction clutch or brake and comprises pole pieces in the form of concentric laminated cylinders spanned at one end by friction material to form one coupling face and at the other end by a ferromagnetic member which is unlaminated. The cylinders and member are encapsulated in plastic to form with the wear segments a rigid assembly.



Thin ferromagnetic strips are tightly and spirally wound to form and laminate the pole pieces and thus reduce substantially the lags induced by the generation of eddy currents in the flux circuit during rapid energization and deenergization of the winding.

3,444,971
CLUTCH WITH NON-ROTATABLE FLUID MOTOR
John Bruce Davidson, Brechin, Angus, Scotland, assignor to Coventry Gauge & Tool Company Limited, Warwickshire, England, a British company
Filed Apr. 24, 1967, Ser. No. 633,272
Claims priority, application Great Britain, Apr. 29, 1966, 18,840/66
Int. Cl. F16d *25/00, 19/00*
U.S. Cl. 192—85 **1 Claim**

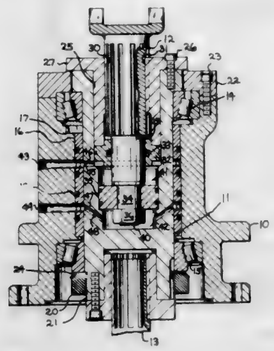


A multi-disc clutch is provided with operating mechanism comprising a fluid pressure actuated annular piston and cylinder. The inner wall of the cylinder directly provides a race for bearing means supporting the piston and cylinder about the hub of the clutch, whereby a compact form of the operating mechanism and clutch is made possible.

3,444,972
FLUID-OPERATED CLUTCH
Walter H. Carstensen, 1415 Sabra Road, Toledo, Ohio 43612, and Donald G. Davey, 3021 Seaman Road, Oregon, Ohio 43616
Filed Apr. 28, 1967, Ser. No. 634,607
Int. Cl. F16d *25/00, 19/00, 21/00*
U.S. Cl. 192—85 **8 Claims**

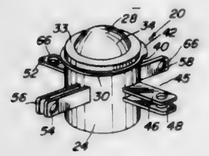
A clutch mechanism for transmitting a high torque. A

clutch shaft rotatable in either direction of which a portion can be extended in an axial direction for engagement



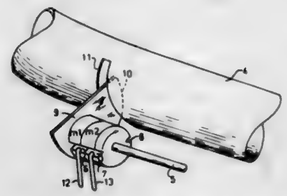
and disengagement with an apparatus that is to be rotated.

3,444,973
LINK FOR A PORTABLE CONVEYOR
Robert H. Nygren, 2310 W. Arthur, Chicago, Ill. 60645
Filed Mar. 9, 1967, Ser. No. 621,840
Int. Cl. B65g *13/11, 39/02*
U.S. Cl. 193—35 **4 Claims**



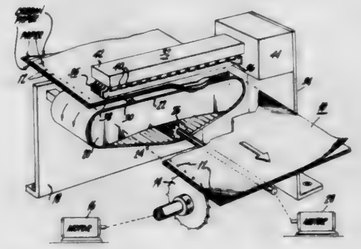
A link for a conveyor having a housing with a ball rotatably positioned therein and including attachment means for connecting a plurality of said links together to form a conveyor for sliding articles thereover in any direction. Said attachment means further enables the link to be operatively connected over curved and inclined surfaces.

3,444,974
COIN FREED BALL STORAGE SYSTEM FOR POOL AND SNOOKER TABLES
Ronald Frank Green, Avalon, New South Wales, Australia, assignor to Davidson Holdings Pty. Limited, Mosman, New South Wales, Australia, a corporation of Australia
Filed Nov. 24, 1967, Ser. No. 685,515
Int. Cl. G07f *5/10*
U.S. Cl. 194—9 **8 Claims**



A coin freed ball storage system for a table for playing games such as pool and snooker for which there is used one or more cue balls and a set of object balls, the system comprising a path for object balls from the pockets of the table to a return receptacle, a displaceable barrier in the path normally closed to obstruct the passage of balls to store object balls as they are pocketed in an inaccessible position within the table, means freed by coin insertion for opening the barrier, and means which responds to the passage of the object ball first pocketed to restore the barrier to closed conditon.

3,444,975
PRINTER WITH PRINT BARS SUPPORTED BY PARALLELOGRAM LINKAGE ARRANGEMENT
Elvin Dean Simshauser, Merchantville, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Mar. 20, 1963, Ser. No. 266,679
Int. Cl. B41j *25/00*
U.S. Cl. 197—1 **6 Claims**

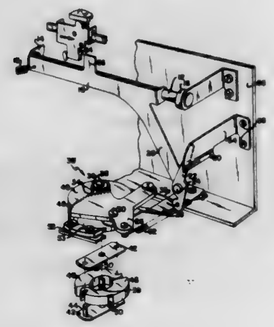


1. A system for printing on a line of a document which comprises:
(a) means for transporting said document along a path transverse to said line,
(b) a plurality of printing members on one side of said path each including an elongated print bar having a longitudinal printing edge substantially parallel to said line and extending the length thereof,
(c) a movable anvil member disposed opposite the printing edges on the other side of said path,
(d) means translating said anvil member in a direction longitudinally of said printing edges,
(e) fixed supporting means,
(f) said printing members also including pluralities of laterally extending legs, oblique to said printing edges, independently connecting said fixed member and the respective said print bars and defining separate parallelogram linkages, each linkage including a different one of said print bars, and
(g) actuating means for applying forces to said parallelogram linkages for changing the inclination between said legs and bars so that said bars move generally longitudinally and toward said anvil member into printing engagement with a document along said path.

3,444,976
TYPEWRITER CARRIAGE DECELERATOR
Carl P. Anderson, Homer, N.Y., assignor to SCM Corporation, organized under the laws of New York
Filed Oct. 10, 1967, Ser. No. 674,308
Int. Cl. B41j *19/02, 29/10, 19/04*
U.S. Cl. 197—64 **5 Claims**

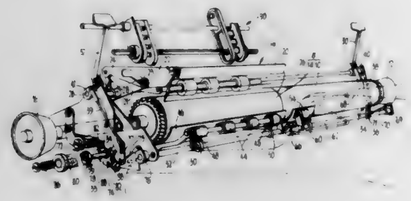
A carriage decelerator for typewriters having a mechanism for accelerating a speed responsive centrifugal governor. The mechanism includes a counterstop slide operable by a carriage supported margin stop, a lever pivotally mounted on the slide, a sector gear connected to the lever and to the governor and a rigid plate having a

curved surface engageable by the lever in a manner to cause the lever to pivot about its axis at an accelerating



rate which accelerates the governor for decelerating the carriage.

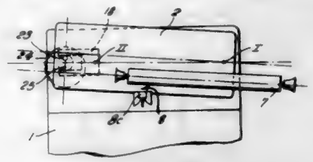
3,444,977
MODE SELECTION FOR THE CONTROL OF A PLURALITY OF WORK SHEETS IN A BILLING MACHINE
Mel E. Kinney, Castro Valley, and Vito Viola, Oakland, Calif., assignors to Friden, Inc., a corporation of Delaware
Filed May 26, 1967, Ser. No. 641,607
Int. Cl. B41j *15/22, 13/074, 13/076*
U.S. Cl. 197—129 **1 Claim**



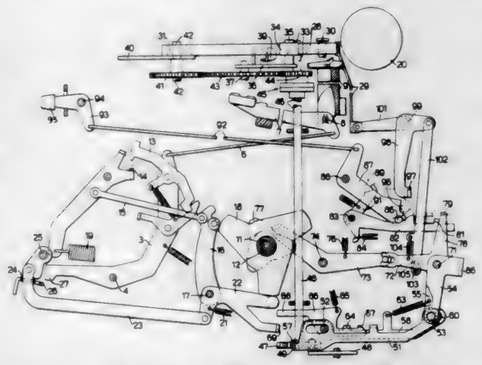
On the paper carriage of a known billing, or accounting, machine having (1) a front feed chute, (2) split controls for the feed rolls to facilitate use of two forms, and (3) two manual levers for controlling the chute and the feed rolls, there is provided an operator-accessible clutch between one manual lever and the control of the feed rolls, to permit alternatively (1) feeding of forms on one side of the platen by tractor feed alone and on the other side by platen feed and (2) platen feed on both sides.

3,444,978
PAPER CARRIAGE MOUNTING ARRANGEMENT
Friedrich Teichmann, Feucht, Germany, and Roscoe L. Jones and Edwin R. Hopkins, Lakeland, Fla., assignors to Max Grundig, Furth, Bavaria, Germany
Filed Dec. 5, 1966, Ser. No. 599,050
Claims priority, application Germany, Dec. 4, 1965, G 45,361
Int. Cl. B41j *11/20, 19/00*
U.S. Cl. 197—149 **9 Claims**

The guide rail structure of the paper carriage of a typewriter is angularly adjusted about a pivot so that the typing area of a platen on the carriage is spaced different distances from types in printing position to accommodate a single sheet or a thick stack of sheets in a position in which the top sheet of the stack is imprinted with the same force as a single sheet.



3,444,979
RIBBON FEEDING DEVICE FOR A VARIABLE SPACING TYPEWRITER
Bernardino Francisco, Fiorano, Turin, Italy, assignor to Ing. C. Olivetti & C.S.p.A., Ivrea, Italy, a corporation of Italy
Filed June 2, 1966, Ser. No. 554,767
Claims priority, application Italy, June 9, 1965, 13,124/65
Int. Cl. B41j *33/18*
U.S. Cl. 197—151 **3 Claims**

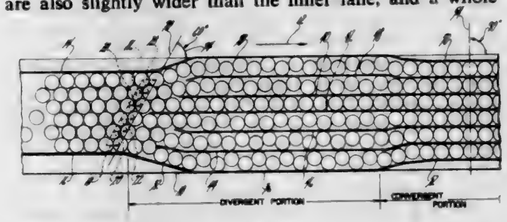


A variable spacing typewriter is provided with a carbon ribbon feeding device adapted to advance the ribbon a minor length when a first group of types is printed and a major length when a second group of types is printed. The ribbon is advanced through a ratchet wheel cooperating with a pair of parallel pawls, which are reciprocated upon printing each type, whereby a first pawl advances the ribbon a first increment during the forward stroke of the pawls, whereas the other pawl advances the ribbon a second increment during the return stroke thereof. A spacing selector is adapted to disable said other pawl upon selecting the spacing of any type of said first group.

3,444,980
METHOD AND MEANS FOR REORIENTING NESTED ARTICLES ON A CONVEYOR TO FORM LATERALLY ALIGNED COLUMNS
John A. Wiseman, Glastonbury, Conn., assignor to Emhart Corporation, Bloomfield, Conn., a corporation of Connecticut
Filed Sept. 27, 1967, Ser. No. 670,846
Int. Cl. B65g *47/26*
U.S. Cl. 198—30 **6 Claims**

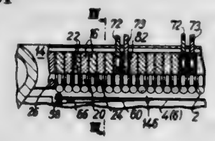
Cans are conveyed between fixed side rails which are spaced laterally to cause the cans to nest in staggered, interfitting, adjacent columns. The side rails form a divergent portion downstream of this nested pattern, and a plurality of guide rails are arranged in the divergent portion to receive the columns of cans in lanes of various widths. An inner lane is just wide enough to accommodate the cans in longitudinally aligned relationship, and the lanes adjacent thereto are slightly wider than said inner

lane so that one-half a can diameter is "made up" in a predetermined lane length in order to align the can columns laterally at the downstream end of said divergent portion. The next adjacent lanes in said divergent portion are also slightly wider than the inner lane, and a whole



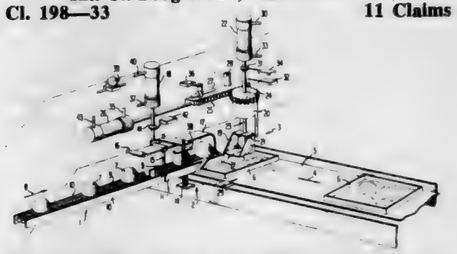
can diameter is "made up" in these latter lanes as a result of the width of the lanes and also as a result of the longer path taken in these outer lanes as a result of the cans having to follow an arcuate path through said divergent portion.

3,444,981
APPARATUS FOR BUILDING BLOCKS OF ROD-SHAPED ARTICLES
Bernhard Schubert, Hamburg-Lohbruegge, Germany, assignor to Hauni-Werke Koerber & Co. K.G., Hamburg-Bergedorf, Germany
Filed June 22, 1966, Ser. No. 559,538
Claims priority, application Germany, June 23, 1965, H 56,380
Int. Cl. B65g *47/28;* **B65b** *19/04*
U.S. Cl. 198—31 **40 Claims**



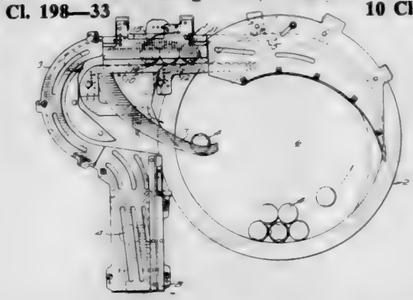
Blocks consisting of stacked rows of cigarettes are formed in an apparatus which assembles successive layers of cigarettes and comprises means for breaking up such layers into shorter rows and for stacking such rows on top of each other to form several stacks which are introduced into the cells of storing devices.

3,444,982
DEVICE FOR HANDLING AND POSITIONING ARTICLES WITHIN CONTAINERS
Rolf Greiner, Stuttgart-Vaihingen, Germany, assignor to Schoko-Buck G.m.b.H., Stuttgart, Germany
Filed Feb. 15, 1967, Ser. No. 616,384
Claims priority, application Germany, Feb. 19, 1966, Sch 38,519
Int. Cl. B65g *47/24;* **B65b** *5/12*
U.S. Cl. 198—33 **11 Claims**



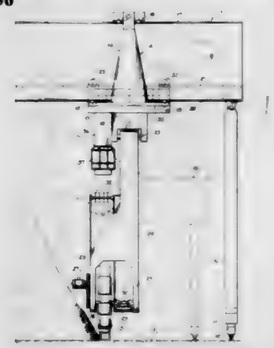
A mechanism for feeding individual articles, especially pieces of candy, in one direction and inserting one article at a time between positioning means in the form of cooperating supports which, if the articles have a noncircular horizontal cross section, are then pivoted at an adjustable angle about a vertical axis, whereupon the supports are separated so as to release the article and to drop the same in a particular position into a container traveling underneath the supports in a direction at an angle to the feeding direction of the articles.

3,444,983
CLOSURE CAP SELECTOR CHUTE
Charles S. Ochs, Lancaster, Ohio, assignor to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware
Filed Apr. 27, 1967, Ser. No. 634,383
Int. Cl. B65g *47/24, 47/00*
U.S. Cl. 198—33 **10 Claims**



A selector is included in a portion of a feed chute of the type used to feed container closure caps from a cap supply source to a container sealing machine. The selector has a pivotally mounted selecting cam mounted at one side of the cap chute having a sensing arm which is engaged and moved by the outer edge of each cap passing through the chute and a spaced ejecting arm which is raised in the path of the cap. Where the caps pass through the chute with their tops uppermost the raised ejecting arm moves within the cap but has no effect on the passage of the cap past the ejector cam. Where the cap is inverted with its cover down, the raised ejecting arm strikes the cap cover thereby tilting the cap so that the cap is removed from the chute by the force of gravity or a spring finger on the opposite side of the chute.

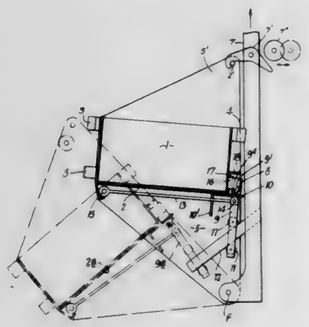
3,444,984
APPARATUS FOR REMOVING BULK MATERIAL FROM A STOCKPILE
Heinrich Degenhardt, Nuremberg-Reichelsdorf, and Werner Quaas, Nuremberg, Germany, assignors to Maschinenfabrik Augsburg-Nürnberg Aktiengesellschaft, Nuremberg, Germany
Filed May 31, 1967, Ser. No. 642,386
Claims priority, application Germany, July 1, 1966, M 70,061
Int. Cl. B65g *65/28*
U.S. Cl. 198—36 **1 Claim**



Material is removable from a stockpile by a gantry spanning the stockpile and carrying a trolley from which

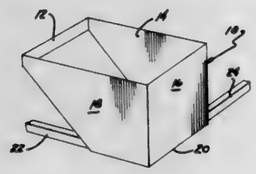
a bucket wheel is suspended for digging the stockpile material.

3,444,985
SELECTIVE DELIVERY CONVEYORS
Richard Percy Stanley Buckle, Kent, England, assignor to Sovex Limited, Kent, England, a corporation of Great Britain
Filed Jan. 30, 1967, Ser. No. 612,591
Claims priority, application Great Britain, Feb. 3, 1966, 4,810/66
Int. Cl. B65g *47/38*
U.S. Cl. 198—38 **8 Claims**



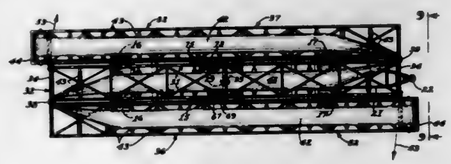
The disclosure relates to a selective delivery conveyor of the kind in which the material to be conveyed is placed in containers which are selectively loaded onto and removed from carriers forming a part of the conveyor. A means is provided which permits delivery of any container only at a selected destination, and there is a locking means provided on each carrier for latching the container to the carrier so as to make it impossible to remove. A further means is provided for automatically releasing the locking means when the container reaches its selected destination.

3,444,986
COMBINATION ANIMAL FEEDER HOPPER AND FEED CONVEYOR CORNER STRUCTURE
Robert L. Van Huis, Zeeland, Mich., assignor, by mesne assignments, to U.S. Industries, Inc., New York, N.Y., a corporation of Delaware
Filed June 12, 1967, Ser. No. 645,328
Int. Cl. B65g *47/18*
U.S. Cl. 198—56 **5 Claims**



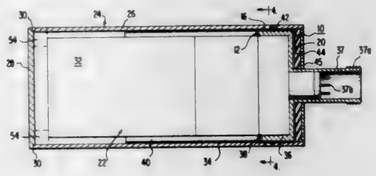
An animal feeder hopper having a pair of openings in its lateral walls near the bottom thereof, through which a feeder conveyor member may enter and leave the hopper, such openings being located in walls of the hopper oriented at an angle to each other, so that the conveyor member enters the hopper traveling in one direction and leaves the hopper traveling in another direction. Inside this hopper structure is a guide wheel located so that it receives the conveyor member on its outer periphery and mounted to rotate with the movement of the conveyor member, to thereby guide the same along a curving path between the angularly disposed entry and exit openings. A hold-down bracket is also mounted within the hopper and has a portion extending over the arcuate path along which the conveyor member travels within the hopper enclosure, to resist any upward movement of the conveyor member as it travels around the guide wheel. Preferably, the hopper is equipped with a means for facilitating the re-entry thereinto of feed which is returned by the conveyor member to the entry opening in the hopper, such means comprising a rotatably mounted cylindrical compacting element which is driven by the movement of the conveyor member.

3,444,987
PORTABLE CONVEYOR STACKER
Marion Leslie Palmer, 1506 W. Campbell, Phoenix, Ariz. 85015
Filed Mar. 22, 1967, Ser. No. 625,115
Int. Cl. B65g *41/00, 37/00*
U.S. Cl. 198—233 **9 Claims**



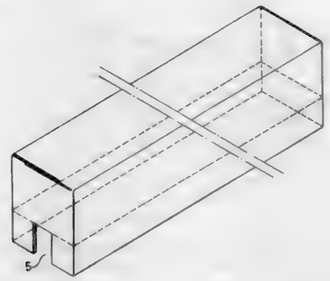
A portable conveyor having a vehicle mounting a central conveyor portion to pivot on a vertical axis thereon, and whereon said central conveyor portion may be moved vertically; and a pair of end conveyor portions pivotally connected to said central conveyor portion to be extended or protracted relative to said central conveyor portion, such that all of the conveyor portions may be foldably disposed relative to each other for transportation on said vehicle.

3,444,988
FASTENER FOR UNSEALED INDICATOR CASES
Richard E. Anderson, Lynn, Mass., assignor to General Electric Company, a corporation of New York
Filed Dec. 30, 1965, Ser. No. 517,759
Int. Cl. F16b *2/00, 5/12, 17/00, 21/00*
U.S. Cl. 206—1 **3 Claims**



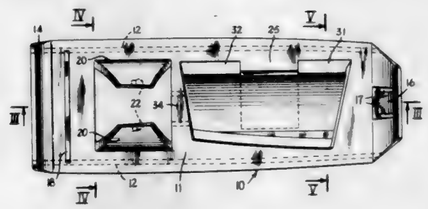
An assembly including a housing having an aperture through its wall, a member in the housing, and a fastener having a medial portion disposed between the wall and the member with a transverse portion extending into the aperture, an anterior portion extending transversely, anteriorly of the member and a posterior portion extending transversely posteriorly of the member.

3,444,989
CASING FOR DEVICES FOR INTRADERMAL APPLICATION
Heinz Wolfgang Hertel, Marburg an der Lahn, and Asmus Reiche, Marbach, near Marburg, Germany, assignors to Behringwerke Aktiengesellschaft, Marburg an der Lahn, Germany, a corporation of Germany
Filed Jan. 2, 1968, Ser. No. 694,621
Claims priority, application Germany, Jan. 5, 1967, B 90,620
Int. Cl. A45c *11/00;* **A61b** *17/20*
U.S. Cl. 206—1 **1 Claim**



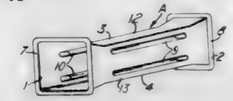
Casing for devices for intradermal application, consisting of a trough-shaped lower part and of a cover.

3,444,990
SAFETY RAZOR HOLDER AND DISPLAY ARTICLE
Paul A. Braginetz, Augusta County, Va., assignor to Philip Morris Incorporated, New York, N.Y., a corporation of Virginia
Filed May 17, 1968, Ser. No. 730,013
Int. Cl. B65d *5/50*
U.S. Cl. 206—45.14 **9 Claims**



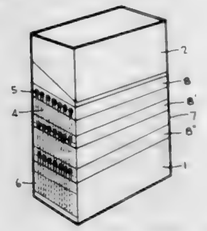
An open face holder for a safety razor and blade magazine combination adapted to display clearly to view the razor and magazine releasably held therein, the holder being an elongated unitary single piece molded plastic member suitably shaped to hold the parts with the razor handle extending longitudinally thereof the holder including an upstanding wall at one end against which the razor head may engage, a support for the opposite handle end of the razor, an elastic clip adapted to releasably grasp the handle adjacent the head and a recess or well underneath the handle in which is supported the magazine with the handle adapted to prevent removal of the magazine when the razor is clamped in position, the recess being such as to support the magazine in a laterally inclined position under the razor handle thereby to expose to view a major portion of the top surface of the magazine unobscured by the handle, the plastic holder further having a pair of parallel supporting ribs or runners depending from the bottom extending longitudinally of the holder.

3,444,991
PACKAGING CONTAINER FOR ARTICLES OF CIRCULAR CROSS-SECTION
Georges Raybois, Paris, France, assignor to Societe Parisienne d'Expansion Chemique S.P.E.C.V.A.
Filed Sept. 7, 1967, Ser. No. 666,082
Claims priority, application France, Sept. 30, 1966, 78,427
Int. Cl. B65d *85/20, 3/04*
U.S. Cl. 206—46 **10 Claims**



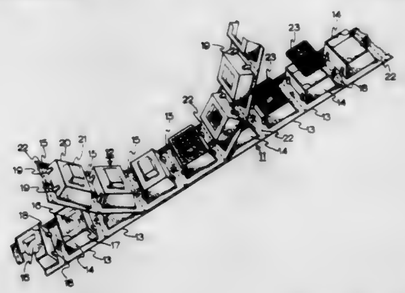
The invention provides a packaging container, e.g. for pharmaceutical ampoules, in the form of an open ended elongate tubular body of thermo-plastic material having a polygonal transverse cross-section. Each of the faces or walls of the polygon is formed with an inwardly projecting fold, which together serve to grip and support an article to be packaged by their resilience.

3,444,992
PACKAGE FOR CIGARETTES
Hans Arthur Kursteiner, 8050 Zurich, Switzerland
Filed Nov. 3, 1967, Ser. No. 680,523
Claims priority, application Switzerland, Dec. 15, 1966, 675/66
Int. Cl. B65d *79/00*
U.S. Cl. 206—48 **2 Claims**



A packing for cigarettes in which the package having four sides, has a plurality of matches attached on one side and a striking surface on the other side. A transparent protective covering is provided with breaking bands on the package.

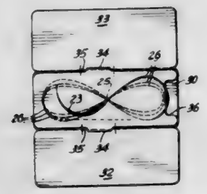
3,444,993
COMPONENT PACKAGE WITH DUST COVER
Thomas J. Lunsford, 378 W. Madison, El Cajon, Calif. 92020
Filed Apr. 23, 1968, Ser. No. 723,390
Int. Cl. B65d *83/00*
U.S. Cl. 206—56 **3 Claims**



A component package with dust cover having first and second package members, one of the members having

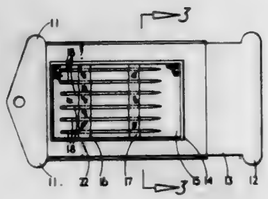
a protrusion and the other member having a complementary recess, said protrusion and recess each having a component recess dimensioned for receiving a component to be packaged, a plurality of latching bubbles for holding said first and second package members together in a press fit relationship, and one or both of said component recesses being perforated for snap-out removal with a component mounted therein for providing a dust cover as an integral part of the component package.

3,444,994
SUTURE PACKAGE
William Albert Kaepernik, Somerville, and Gregory Julius Listner, Kendall Park, N.J., assignors to Ethicon, Inc., a corporation of New Jersey
Filed Feb. 16, 1968, Ser. No. 706,009
Int. Cl. A61l *17/02*
U.S. Cl. 206—63.3 **14 Claims**



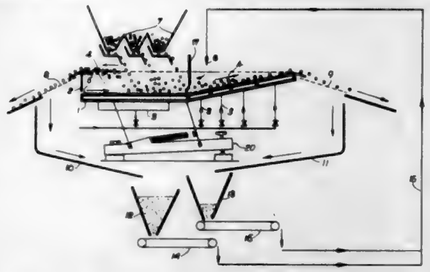
A surgical suture package primarily for relatively stiff sutures which tend to assume a set configuration determined by the physical configuration in which they are packaged, wherein a predetermined sinusoidal configuration is imparted to the suture by the way in which the suture is packaged. The suture is carefully wound in a figure eight coil having successive layers which do not telescope with one another, for this purpose. The coiled suture is positioned and retained in a foldable suture retainer which is adapted to lock the coil in position automatically therein as its parts are folded together. Various other specific functional and structural features of this invention also are disclosed.

3,444,995
HOLDERS FOR NEEDLES AND LIKE ARTICLES
Norman Thomas Sanders, Studley, England, assignor to Needle Industries Limited, Birmingham, England, a British company
Filed June 27, 1967, Ser. No. 649,328
Claims priority, application Great Britain, June 29, 1966, 29,155/65
Int. Cl. B65d *85/24, 73/00*
U.S. Cl. 206—66 **2 Claims**



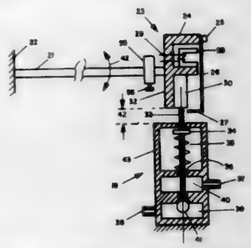
A holder for needles and the like having a base to which the needles are secured and a transparent cover slidable along the base to expose the needles for removal. The base is formed with a crease to enable it to be folded away from the cover to facilitate removal of the needles.

3,444,996
DRY SEPARATION OF MIXTURES OF SOLID MATERIALS
Edward Douglas and Terence Walsh, Stevenage, England, assignors to National Research Development Corporation, London, England
Filed Mar. 13, 1967, Ser. No. 622,641
Claims priority, application Great Britain, Mar. 14, 1966, 11,067/66
Int. Cl. B07b *3/04*
U.S. Cl. 209—44 **10 Claims**



Improved methods and apparatus for separating dry mixtures of solids of different densities using the float-and-sink principle of separation in which instead of a liquid separating medium a solid separating medium in particulate form fluidised by the introduction of low pressure air or other gaseous material into a mass of such medium is employed to effect separation within the mass and vibration of the mass and/or cycling of separating medium from and to the mass is utilized to cause the separated fractions to follow different paths towards spaced outlets.

3,444,997
EXAMINING-SORTING SYSTEM WITH CYCLIC REJECTION MEANS
Daniel Silverman, 5969 S. Birmingham, Tulsa, Okla. 74105
Filed May 1, 1967, Ser. No. 635,106
Int. Cl. B07c *9/00, 5/00*
U.S. Cl. 209—73 **27 Claims**

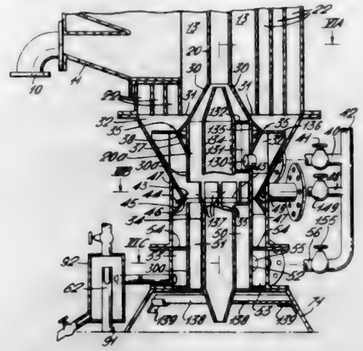


This invention is directed to the provision of object rejection means capable of rapid operation and large rejection force capability.

This is accomplished by providing a high power, high frequency oscillating, pulsating or cyclically moving energy system, a related rejection force generating means, and a coupling means between the two. The coupling means is responsive to the examining or inspection means and is inherently fast-acting so that it can couple the energy means to the force generating means for a single cycle of oscillation or pulsation of the energy means. Control of the geometry between the energy means and the force generating means can determine the fraction of the cycle during which the rejection force will act.

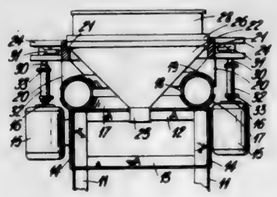
The oscillating system can be mechanical, electromechanical electropneumatic, or pneumatic. The rejection force generating means can be pneumatic or mechanical, and the clutch means can be electromagnetic, fluid-magnetic, fluid-electric, or electric.

3,444,998
CLASSIFICATION OF GRANULAR MATERIALS
Alan Trevor Lovegreen, 16 Church Lane, Wallingford, Berkshire, England
Filed July 20, 1967, Ser. No. 654,875
Claims priority, application Great Britain, July 21, 1966, 32,715/66
Int. Cl. B03d *1/16*
U.S. Cl. 209—159 **10 Claims**



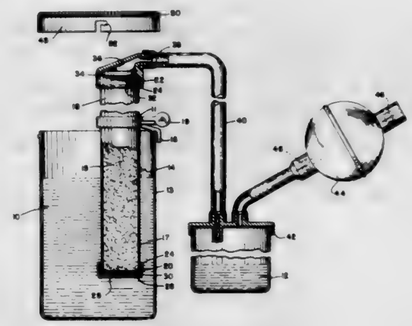
Method and apparatus for classifying granular material in which two or more separate countercurrent flows are established at different levels in a vessel containing the main body of liquid. The rates of flow of these countercurrents are separately controllable so that the gradings of the particles entrained by them can be varied at will. The coarse particles are collected in a weighing hopper at the base of the vessel and are automatically discharged at a rate depending on the settling rate. The hopper is sealed into an outer casing with freedom to move vertically, and the space between the hopper and the casing is kept full of clean liquid so as to balance out the weight of water within the hopper and render its weighing action more accurate and sensitive to the weight of coarse fraction. Sets of vertical baffles within the vessel define the separate countercurrent circuits, and transverse jets of liquid are maintained in the main body of liquid adjacent the levels of entry of the falling particles into the respective countercurrents. A manometer device controls the rate of supply of clean liquid to the vessel so as to maintain the required pressure gradient in the vessel.

3,444,999
VIBRATORY MOUNTING FOR SIEVES AND LIKE APPARATUS
Justin Hurst, Mayfield, England, assignor to Russell Constructions Limited, London, England, a British company
Filed Dec. 20, 1965, Ser. No. 515,057
Claims priority, application Great Britain, Mar. 18, 1965, 11,599/65
Int. Cl. B07b *1/28*
U.S. Cl. 209—316 **8 Claims**



This application discloses a vibratory mounting for a sieve or other vibratory apparatus. A vibratory frame having an annular seating is mounted on a resilient annulus which rests on a similar annular seating on a stationary frame. An out-of-balance weight is mounted on the vibratory frame to vibrate it with circular vibrations having at least a component in the plane of the annulus.

3,445,000
WATER PURIFICATION
Peter S. Litt, Albuquerque, N. Mex., assignor of twelve percent each to Walter B. Hobbs, Evanston, Ralph K. Ball, Kenilworth, and Watson D. Harbaugh, Evanston, Ill.
Application Oct. 15, 1962, Ser. No. 233,996, now Patent No. 3,389,079, dated June 18, 1968, which is a continuation-in-part of application Ser. No. 194,135, May 11, 1962. Divided and this application Apr. 18, 1963, Ser. No. 276,688
Int. Cl. B01j *1/06;* **C02b** *1/16*
U.S. Cl. 210—94 **4 Claims**

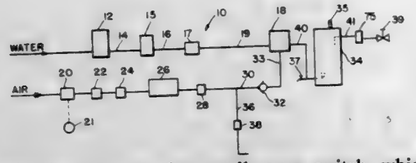


1. An apparatus for reclaiming product water from a feed water solution of ion content comprising:
a container having a body of feed water in it,
an elongated compressible diffusion mass exposed at both end portions, one of said end portions being immersed in said body of water,
said diffusion mass comprising a felt-like matting of inert material defining a labyrinth of minute irregular circuitous capillary-like passages capable of moving water molecules by diffusion faster than ions can travel therethrough,
means for externally sealing the diffusion mass from atmosphere and water over its remaining surface portions,
means connected to the other end portion for subjecting said diffusion mass to negative gauge pressure,
means for collecting the product water passing through said diffusion mass, said one end portion being provided with a cup member having its bottom wall perforated,
said cup carrying an alkali earth compound soluble in water for progressive disassociation into ion particles in the feed water supplied to said diffusion mass.

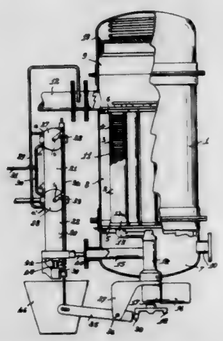
3,445,001
WATER PURIFIER
Julius La Raus, Brighton, N.Y., assignor to Ozonator Corporation, Batavia, N.Y., a corporation of New York
Filed June 2, 1967, Ser. No. 643,095
Int. Cl. C02b *1/38*
U.S. Cl. 210—98 **8 Claims**

Water and ozone are supplied to a tank adapted to be connected to a domestic or household water system. A compressor supplies air to an ozone generator, the output of which is controlled by a normally-closed valve, which

is disposed between the generator and tank. Whenever a faucet in the associated household system is opened, a switch is closed to open the valve electrically to admit ozone to the tank. An electrical timer in the system periodically closes a second normally-open switch, which is in parallel with the first switch, to feed ozone from the generator to the tank periodically, and independently of the faucets.



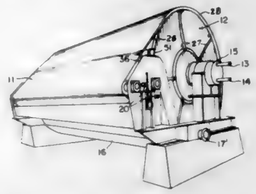
3,445,002
FILTER UNIT WITH AUTOMATIC CLEANING AND AUTOMATIC DISCHARGE OF COLLECTED IMPURITIES
Jacques Muller, 123 Ave.-du-Genl.-de-Gaulle, La Garenne-Colombes, Hauts-de-Seine, France
Filed Sept. 14, 1967, Ser. No. 667,782
Claims priority, application France, Sept. 30, 1966, 78,347
Int. Cl. B01d *29/38, 27/12, 25/22*
U.S. Cl. 210—108 **8 Claims**



A filter device having a plurality of circumferentially spaced columns of stacked grooved filter discs through which flows the fluid to be cleaned, with means being provided for reverse flushing of the filter columns one by one and automatic collection of the impurities or sludge collected by the filter columns and automatic discharge of such impurities or sludge.

3,445,003
VACUUM FILTER WITH A RING-TENSIONED MEDIUM
James C. Paccione, Naperville, Ill., assignor to Chicago Bridge and Iron Company, a corporation of Illinois
Filed Oct. 7, 1966, Ser. No. 586,331
Int. Cl. B01d *25/32*
U.S. Cl. 210—401 **12 Claims**

The filter medium or web of a vacuum filter commonly passes around a suction drum and is drawn away from it for removal of the filter cake, after which the web is returned to the drum. This web is maintained under transverse tension by a spring-biased tensioning ring at each end of the drum having a diameter substantially that of the drum. The web is provided along each edge with an elastomer bead which holds it on the rings, a bead riding outside of each ring. The beads are held adjacent the peripheries of the rings due to the lateral tension of the web. The ring is pushed inwardly contrary to its bias by a stationary roller in the area of departure and return of the web. The tensioning rings are supported by means which leaves them substantially friction free in the area where the web returns. Guide rollers may be provided with disks cooperating with the bead. The web may ride over a bar adjustably stretching its central area.

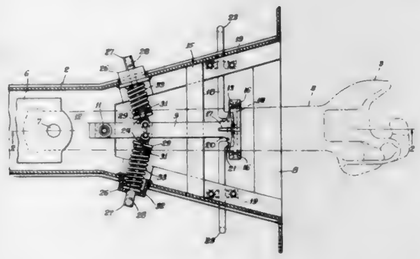


3,445,004
TELESCOPIC CANTILEVERED BOOM
Lyle D. Grider, New Berlin, and Gottfried Reuter and George W. Mork, South Milwaukee, Wis., assignors to Bucyrus-Erie Company, South Milwaukee, Wis., a corporation of Delaware
Filed Feb. 1, 1967, Ser. No. 618,254
Int. Cl. B66c *23/06, 23/62*
U.S. Cl. 212—55 **10 Claims**



After discussing loading problems of hydraulic cranes of cantilevered, telescopic booms, a boom structure is disclosed employing a rectangular steel tube with an external supporting skeleton. Hydraulic cylinders are disclosed for extending and contracting the boom, and these are mounted with the piston rods fastened to one boom section, the rod ends of the cylinders trunnion mounted to one boom section, and the blind ends of the cylinders suspended on the boom by springs with shock absorbers.

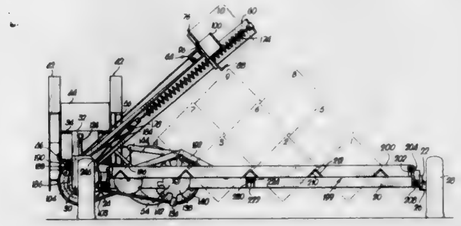
3,445,005
COUPLER CENTERING DEVICE
Frederick C. Kulieke, Jr., Alliance, and Lee G. Wisler, Beloit, Ohio, assignors to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey
Filed July 5, 1966, Ser. No. 562,784
Int. Cl. B61g *7/10*
U.S. Cl. 213—20 **2 Claims**



A railway car coupler pivotally connected to a yoke is located above a centering bar pivotally connected at one end to a striker casting. The bar is resiliently biased in a

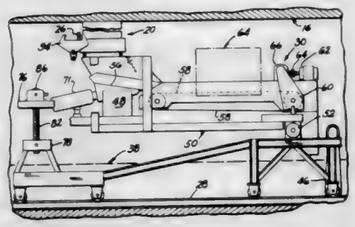
centered position by springs and has a pivotal U-shaped latch at its other end that straddles the sides of the coupler's shank during normal operation thereby retaining the coupler in a centered position. The latch may be pivoted out of contact with the coupler so that the coupler may be freely rotated to either side of center. When the coupler again returns to center, the latch automatically engages the coupler and resiliently retains it for movement with the center bar.

3,445,006
BALE STACKER
Jonathan B. Fleming, Logan, Utah, assignor to Hesston Corporation, Inc., Hesston, Kans., a corporation of Kansas
Filed Jan. 19, 1967, Ser. No. 610,262
Int. Cl. B65g *57/09, 57/16;* **B60p** *1/00*
U.S. Cl. 214—6 **10 Claims**



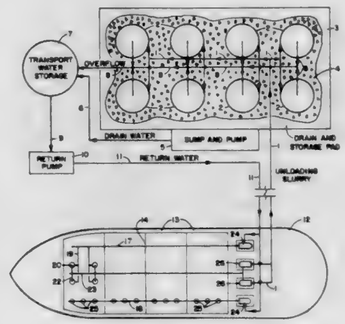
Bale stacking apparatus having a tray for intermittently receiving bales and reciprocable on a track to various bale-discharge positions, the latter being governed by a first index programmer. A second programmer is coupled to the track for varying the height of the latter and is synchronized with the first programmer for building a prismatic bale stack on a carrier disposed along the length of the track. The tray responds to the receipt of each bale to initiate the respective movements of the tray and track.

3,445,007
MATERIAL HANDLING APPARATUS
John G. Hoad, Dearborn, Mich., assignor to John G. Hoad & Associates, Inc., Ypsilanti, Mich., a corporation of Michigan
Filed Dec. 16, 1966, Ser. No. 602,329
Int. Cl. B65g *65/42, 67/14, 37/00*
U.S. Cl. 214—10 **9 Claims**



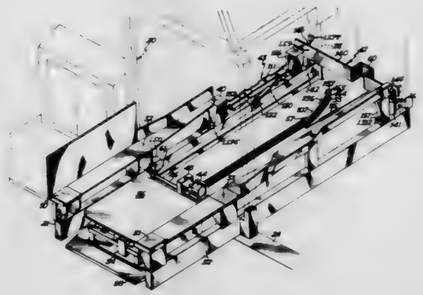
Apparatus for reclaiming bulk material from a storage building surface, a storage pile or the like. The apparatus includes a tube for positioning under the bulk material through which a conveyor extends, and rail means are provided lengthwise in the tube on which a mobile unit is movable for positioning under gate means for receiving bulk material. The mobile unit is operable to open the gate means and to transfer bulk material received through the gate opening onto the conveyor.

3,445,008
HANDLING OF PARTICULATE SHIP CARGO
Ludwig W. Koch, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed Sept. 29, 1966, Ser. No. 582,815
Int. Cl. B63g *53/30, 53/60*
U.S. Cl. 214—14 **7 Claims**



A system is provided for unloading solids from a ship's hold by forming a slurry, wherein a low pressure liquid fluidizes the solids at the bottom of the hold and the resulting fluid is picked up by adjacent eductors operated by high pressure liquid; the system can be readily installed in e.g. an existing oil tanker.

3,445,009
METHOD AND MEANS FOR MOVING MATERIAL-UNITS
Arthur R. Burch, Wayzata, Minn., assignor to Declark, Inc., a corporation of Delaware
Filed Sept. 8, 1966, Ser. No. 577,910
Int. Cl. B65g *63/02, 63/06, 7/06*
U.S. Cl. 214—16.4 **25 Claims**

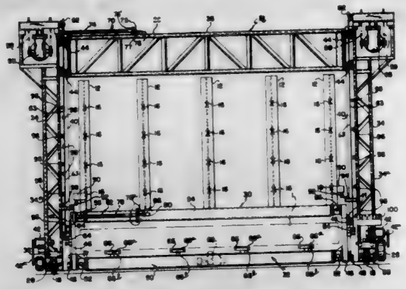


A material handling system that moves materials into bins that are located with aisles therebetween has a transfer vehicle for moving across the ends of the aisles and a stacker vehicle for transferring materials between the transfer vehicle and the bins. The transfer vehicle has a load station accessible to the stacker vehicle and a load station accessible to material handling devices external to the system. Material-units are transferred from the external device load station to the stacker load station on an air film cushion load carrying device.

3,445,010
AUTOMATIC WAREHOUSING SYSTEM FOR BAR STORAGE

William A. Alstedt, Cleveland, and Wayne G. Atwater, Willoughby, Ohio, assignor to The Triax Company, Cleveland, Ohio, a corporation of Ohio

Filed July 10, 1967, Ser. No. 652,102
Int. Cl. E04h 6/00; B66c 5/02, 19/00
U.S. Cl. 214—16.4 14 Claims

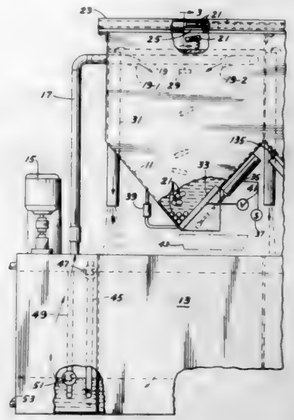


The automatic warehousing system comprises a storage frame for storing long loads, such as elongated bars, tubes, pipes, structural elements or the like, and a load transfer or load carrier mechanism for picking up an elongated load from a starting position and moving it above the storage frame and then down into the storage frame, or for removing a load from the storage frame to a position above the storage frame and then back to a position exteriorly of the storage frame. The storage frame may comprise laterally spaced upright load columns with vertically spaced laterally-extending load supports thereon, adapted to receive the elongated load or loads thereon. A plurality of rows of load columns may be provided defining travel zones or aisles between the rows. The load carrier comprises a gantry-like conveyor frame supported for movement on rails at floor level, with the gantry-like conveyor frame straddling the storage frame during insertion or removal of a load into or from the storage frame. An elongated elevator is supported for vertical movement on the gantry-like frame with an extractor mechanism mounted on the elevator and adapted for lateral movement with respect thereto for moving loads onto and from the laterally-extending load supports of the storage frame. The elevator and associated extractor mechanism are adapted to be positioned adjacent the upper end of the gantry-like conveyor frame during movement of the latter along the storage frame thus providing for passage of the elevator and extractor above the storage frame during movement of the conveyor frame along the storage frame. The extractor is adapted to pick up a load at a pick up and delivery station at one end of the storage frame with the elevator and associated extractor then moving the load vertically on the conveyor frame above the storage frame. Then the conveyor frame moves into the storage frame with the load supported in raised elevation above the storage frame until arrival of the conveyor frame at the desired aisle in the storage frame. The elevator then lowers the load vertically down to the desired level in the aisle and the extractor mechanism deposits the load into the storage frame at the selected level. To remove a load from the storage frame for return to the pickup and delivery station the reverse operation occurs. The vertical and transverse components of the gantry-like conveyor frame are pivoted together and the vertical components are powered for synchronized movement, for obtaining self alignment of the conveyor frame, and the vertical and transverse components of the elevator are likewise pivoted together for obtaining self alignment thereof. Limit switch means are provided for limiting misalignment between the pivoted components of the gantry-like conveyor frame and the components of the elevator.

3,445,011
METHOD AND APPARATUS FOR BULK STORAGE OF OBJECTS

Edward W. Johnson, North Olmsted, Ohio, assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Dec. 22, 1966, Ser. No. 603,855
Int. Cl. B65g 65/32, 51/00
U.S. Cl. 214—17 9 Claims

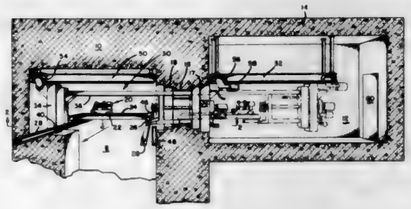


A method and apparatus for the bulk storage of objects in a liquid filled storage zone. The objects are directed to the storage zone from above and fall through the liquid due to gravity. The rate of fall of the objects through the liquid is diminished by turbulence caused in a liquid. This turbulence causes forces on the falling objects acting against the force of gravity.

3,445,012
BRIDGE MOUNTED STRUCTURE FOR HOT CELLS

Robert M. Freeborg, Lafayette, Calif., assignor, by mesne assignments, to Bechtel International Corporation, San Francisco, Calif., a corporation of Delaware

Filed July 25, 1966, Ser. No. 567,473
Int. Cl. B66c 17/08, F23k 3/00
U.S. Cl. 214—18 11 Claims



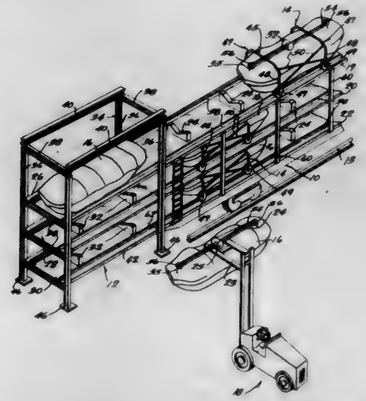
1. A rail mounted device for use in a nuclear cell comprising in combination:
(a) first spaced rails in said cell for supporting said device;
(b) a withdrawal structure for removing the device;
(c) an opening in said cell at one side of and beyond said rails;
(d) second rails mounted on said withdrawal structure, said second rails forming a continuation of said first rails;
(e) first and second closure means mounted on said withdrawal structure near the ends thereof;
(f) traversing means for said withdrawal structure, said traversing means being adapted for movement of the withdrawal means at right angles to said rails and

(g) said first closure means blocking said opening when said withdrawal means is in a first position with the device within the cell and said second closure means blocking said opening when said withdrawal means is in a second position with said device outside the cell.

3,445,013
METHOD AND APPARATUS FOR LOADING MULTILEVEL RAILROAD CARS

Richard R. Scheinert, Waukegan, Ill., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware

Filed Dec. 19, 1966, Ser. No. 602,743
Int. Cl. B65g 67/12; B60p 3/10; B61d 15/00
U.S. Cl. 214—38 9 Claims

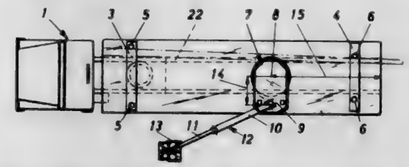


The disclosure involves loading boat hulls on a multilevel railroad car which may be located adjacent to a multilevel loading dock located at one end of the railroad car and having levels corresponding in height to the various levels of the railroad car. Gantries on each level are provided for transporting boats along the railroad car and to and from the dock or other supply means. The gantries are constructed with inverted U-shaped frames having spaced depending legs and wheels to facilitate movement of the gantries over the boats. The railroad car and the loading dock are provided with guide rails located inwardly of the gantry wheels, and on the railroad car, parallel to and adjacent to the longitudinal sides of the car.

3,445,014
VEHICLES WITH CRANE

Ivar Anselm Kullerback, Rattvik, Sweden, assignor to Hiab-Foco Aktiebolag, Hudiksvall, Sweden, a corporation of Sweden

Filed Jan. 26, 1968, Ser. No. 700,880
Claims priority, application Sweden, Feb. 8, 1967, 1,738/67
Int. Cl. B60p 1/48; B66c 23/54
U.S. Cl. 214—77 5 Claims

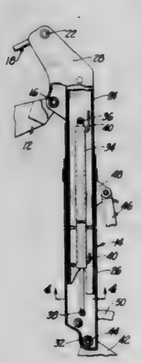


This invention relates to a load-carrying vehicle having on its chassis a turnable ring carrying a crane provided with a foldable lifting arm. The purpose of the invention is to increase the adjustability of the crane and this has been achieved by journalling the crane about a vertical axis on the turning ring and arranging it eccentrically on the same. The distance between the turning axis of the ring and the turning axis of the crane is essentially equal to half the width of the load carrying surface of the vehicle.

3,445,015
RAM-ACTUATED TELESCOPING HOLLOW ARM

Robert A. Sampo, 4842 Ocana Ave., Lakewood, Calif. 90713, and Tony A. Sampo, 4663 Deerboyar, Lakewood, Calif. 90712

Filed Dec. 9, 1966, Ser. No. 600,479
Int. Cl. E02f 3/74
U.S. Cl. 214—138 5 Claims

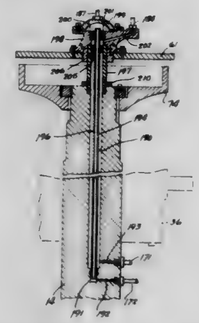


A telescoping backhoe dipper stick comprising telescopically interconnected inner and outer tubular members containing a ram for lengthening and shortening the dipper stick. The inner tubular member is connected to the backhoe boom while the backhoe bucket is connected to the outer tubular member. Thus, the inner tubular member is remote from the bucket to minimize its exposure to dirt, thereby minimizing the possibility of dirt entering the sliding connection between the inner and outer members.

3,445,016
SWIVELLING TOOL SUPPORT FOR EARTH-WORKING MACHINE

Audie B. Tomlinson, Rte. 1, Box 188E, La Grande, Oreg. 97850

Filed July 5, 1967, Ser. No. 651,172
Int. Cl. E02f 3/74, 3/84, 3/86
U.S. Cl. 214—138 5 Claims



A swivelling tool support for an earth-moving machine where the tool support has a shaft which can rotate con-

tinuously without interference from conduits supplying working field to implements carried by the shaft. The support has one or more hydraulic motors gearingly-coupled to the shaft and has a hydraulic brake mechanism acting on the shaft to lock it in an adjusted position. The shaft has passages and rotating seals allowing hydraulic working fluid to be transmitted to the implement mounted on the shaft, such as a scoop, or the like. The brake mechanism may be of the brake-band or brake-disc type.

3,445,017

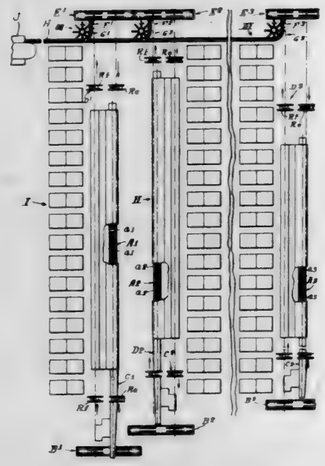
APPARATUS FOR HANDLING PACKS OF PRINTED SIGNATURES

Otho Kile, Homewood, Ill., assignor to R. R. Donnelley & Sons Company, a corporation of Delaware

Application May 14, 1965, Ser. No. 455,841, now Patent No. 3,402,839, dated Sept. 24, 1968, which is a division of application Ser. No. 181,754, Mar. 22, 1962, now Patent No. 3,206,043, dated Mar. 14, 1965. Divided and this application Nov. 28, 1967, Ser. No. 686,143

Int. Cl. B65g *65/02;* **B65b** *35/12;* **B65h** *9/00*

U.S. Cl. 214—309 **3 Claims**



1. Apparatus for handling packs of printed signatures, comprising in combination: a pack conveyor for feeding packs of signatures seriatim to a binder; a first pack handling unit which includes, a plurality of racks, each rack being adapted to retain a predetermined number of packs of signatures in spaced relationship, an unloading station, transfer means for moving racks successively through the unloading station, each of said racks containing said predetermined number of packs, means for unloading packs seriatim from said racks as they move through the loading station and delivering them in a stream to said pack conveyor; a second pack handling unit which includes, a plurality of racks, each rack being adapted to retain a predetermined number of packs of signatures in spaced relationship, an unloading station, transfer means for moving racks successively through the unloading station, each of said racks containing said predetermined number of packs, means for unloading packs seriatim from said racks as they move through the loading station and delivering them in a stream to said pack conveyor; and means for selectively operating said pack handling units so that each pack on the pack conveyor includes a pack from each unit, or so that packs on the conveyor are alternately from the first unit and from the second unit.

3,445,018

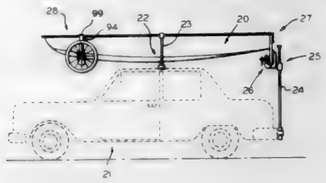
BOAT HANDLING MECHANISM

John E. Reagan, 559 Saylor, Elmhurst, Ill. 60126

Filed Feb. 21, 1967, Ser. No. 617,663

Int. Cl. B60v *9/04;* **B60p** *3/10*

U.S. Cl. 214—450 **10 Claims**



A boat carrying apparatus having a depending plate at the stern of the boat to enable clamping of this plate to an upright supporting member at one end of an automobile so that the boat is carried in upright fashion. A wheel assembly is detachably connected to the underside of the boat at the bow portion thereof which enables support of the boat at the bow portion thereof on these wheels when the boat is being elevated to or taken down from the roof of the carrying automobile and when the boat is manually transported.

3,445,019

FORK LIFT TRUCK HAVING A LIFTING DEVICE MOUNTED FOR PIVOTAL MOVEMENT ABOUT A VERTICAL PIVOTAL AXLE

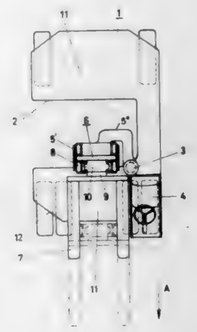
Kurt Steinert, Herzogenaurach, Germany, assignor to Karl Heinz Schmidt, Vorra, Kreis Hersbruck, Germany

Filed May 5, 1966, Ser. No. 547,864

Claims priority, application Germany, May 20, 1965, Sch 37,099

Int. Cl. B66f *9/10*

U.S. Cl. 214—671 **2 Claims**



A fork lift truck capable of both front and side operations in which the vehicle is C-shaped in its ground plan and the lifting means is slewable about a vertical pivotal axle arranged at or adjacent an inner corner of the vehicle. The lifting means is linked with the vertical pivotal axle via an outrigger allowing horizontal displacement of the lifting means relative to the pivotal axle.

3,445,020

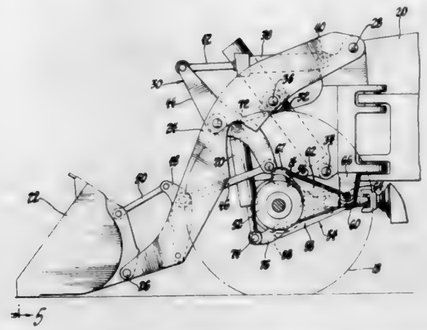
FRONT END LOADER HAVING ADJUSTABLE HEIGHT CONTROL

Leonard H. Chant, Euclid, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Nov. 13, 1967, Ser. No. 682,321

Int. Cl. E02 *3/04, 3/40;* **B62d** *21/14*

U.S. Cl. 214—768 **7 Claims**



A front end loader earth-moving vehicle supported by front and rear axles and having the forward end of the vehicle equipped with a bucket movable vertically between a lowered-dig position and a raised-dump position. The vehicle is characterized by having the front end thereof supported for vertical adjustment relative to the front axle of the vehicle to thereby vary the ground height of the bucket when the latter is in either of the aforementioned positions.

3,445,021

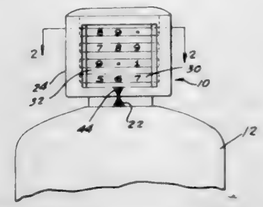
COMBINATION LOCKING CLOSURE FOR CONTAINERS

John R. Johnson, 6849 Hendricks St., Anderson, Ind. 46013

Filed June 27, 1967, Ser. No. 649,260

Int. Cl. B65d *55/12;* **A61j** *1/00;* **F16k** *35/10*

U.S. Cl. 215—9 **4 Claims**



A locking closure for a container having a neck terminating in an open mouth, comprising a tubular cap closed at one end and axially slidable on the container neck to cover and uncover said mouth, the neck being provided with a plurality of annular grooves intersected by an axial slot, said closure having a plurality of dial rings rotatable therein and accessible for turning from the exterior of the closure, each dial ring having a lug movable through said slot and enterable within one of said grooves to lock the closure to the container neck.

3,445,022

CHILDPROOF SAFETY CONTAINER AND CLOSURE

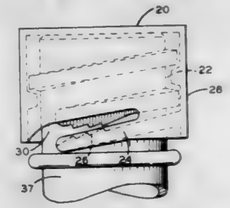
Frank A. Cilluffo, 283 Haverstraw Road, Suffern, N.Y. 10901

Filed Dec. 21, 1967, Ser. No. 692,397

Int. Cl. B65d *55/02, 41/06*

U.S. Cl. 215—9 **10 Claims**

A spiral thread on the neck or spout of the bottle is provided with a ratchet teeth detents on the bottom surface of the lower terminal end of the spiral thread. The closure cap is internally provided with a similar spiral



thread, with ratchet teeth appropriately disposed to engage the ratchet teeth on the spiral teeth on the neck, to normally prevent simple casual or undesired disengagement.

3,445,023

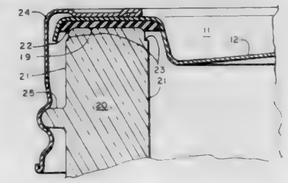
CONTAINER LID

Donald A. Giessler, Muncie, and Laurence E. Lafferty, Jr., Yorktown, Ind., assignors to Ball Brothers Company Incorporated, Muncie, Ind., a corporation of Indiana

Continuation of abandoned application Ser. No. 534,600, Feb. 8, 1966, which is a continuation of abandoned application Ser. No. 378,651, June 29, 1964. This application Apr. 12, 1967, Ser. No. 630,461

Int. Cl. B65d *23/00, 53/02, 45/32*

U.S. Cl. 215—40 **4 Claims**



A lid for use on home canning containers. The lid consists of a central portion, a rim and a short skirt. A gasket of vinyl plastisol is disposed on the interior side of the rim and the skirt extends at an obtuse angle with respect to the rim whereby the skirt is prevented from "hanging" on the forming shoulder of a glass container which would prevent the lid from sealing the container.

3,445,024

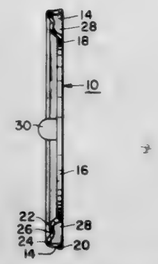
FLEXIBLE SEALING RING

Earl J. Whitney, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed Mar. 14, 1968, Ser. No. 713,187

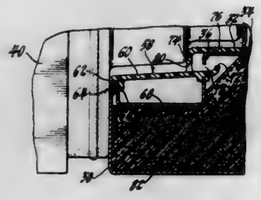
Int. Cl. B65d *53/02;* **F16j** *15/32, 13/02*

U.S. Cl. 215—40 **5 Claims**



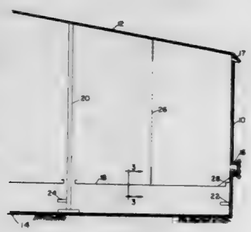
A removable sealing ring of flexible material having a grooved portion backed by an air chamber to compensate for and effectively seal irregular rim surfaces of a glass container.

3,445,025
BREAKER STRIP ARRANGEMENT
Orson V. Saunders, Dayton, and Louis D. Benasutti, Fairborn, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 23, 1967, Ser. No. 677,331
Int. Cl. B65d 25/18
U.S. Cl. 220—9 2 Claims



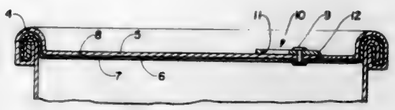
In the preferred form, the bottom of the inner wall is provided at the front with a downturned lip. A plastic breaker strip extends laterally with a portion extending rearwardly beneath the downturned lip and terminating in an upturned edge forming a trough. The breaker strip also has a portion extending upwardly and rearwardly over the front edge of the inner wall. The bottom of the upwardly extending portion is provided with apertures through which any liquid leaking through the joint between the inner wall and the breaker strip will be collected on the trough of the laterally extending portion and flow forwardly over the front edge of the breaker strip. The breaker strip at the front is provided with a longitudinally extending downwardly opening groove which receives the upturned edge of the front upwardly extending leg of a channel member, the other leg of which extends into a second longitudinally extending downwardly opening groove on the bottom of the breaker strip.

3,445,026
FLOATING ROOF STRUCTURE
Donald L. Korn, 1225 Circle Drive, Sapulpa, Okla. 74066
Filed Mar. 22, 1968, Ser. No. 715,271
Int. Cl. B65d 87/20; F16j 9/00; E04h 7/12
U.S. Cl. 220—26 7 Claims



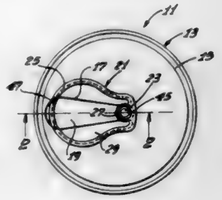
A plastic floating roof for particular use with fixed roof type tanks includes adjustable supports for supporting the roof either at a level for cleaning the tank beneath or at another level representing the lowermost level of liquids within the tank. The roof is constructed to allow for cleaning or repair above and below the floating roof and in addition support persons thereon when the tank is empty.

3,445,027
EASY OPENING CONTAINERS
Charles E. Palmer, Somers, Conn., assignor to Jones & Laughlin Steel Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 18. 1968, Ser. No. 698,859
Int. Cl. B65d 17/24, 7/04, 25/14
U.S. Cl. 220—54 8 Claims



Easy opening containers constructed of tinplate are disclosed. The containers are opened along lines of weakness, provided in either their end closures or body walls. Steel foil is bonded to the inside of the containers at least completely along the lines of weakness and the portions of the containers immediately adjacent thereto.

3,445,028
TAB FOR AN EASY-OPENING CONTAINER
Omar L. Brown, Dayton, Ohio, assignor, by mesne assignments, to Ermal C. Fraze, Dayton, Ohio
Filed Mar. 14, 1968, Ser. No. 713,007
Int. Cl. B65d 17/24
U.S. Cl. 220—54 9 Claims

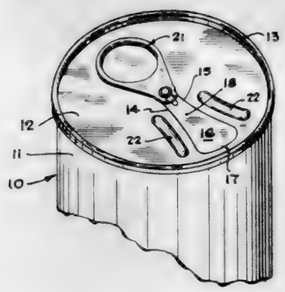


This disclosure describes a tab of the type usable with easy-opening containers to forcibly remove a segment of a wall of the container. The tab is constructed of sheet material and includes a tab body of an attachment portion joined by a connecting wall adjacent one end of the tab body. A marginal portion of the tab body is curled to form a peripheral reinforcing curl which extends along the sides of the tab and engages at least a central portion of the connecting wall to support the latter.

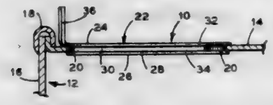
3,445,029
CONTAINER HAVING INTEGRAL TEAR STRIP OPENING MEANS
Richard D. Zenger, Downers Grove, Ill., assignor to National Can Corporation, Chicago, Ill., a corporation of Delaware
Filed May 31, 1968, Ser. No. 733,618
Int. Cl. B65d 17/20
U.S. Cl. 220—54 12 Claims

The present invention relates to an easy opening container end and particularly of the type provided with a weakened score line portion defining a tear out strip to which is connected a pull means wherein the pull means initiates tearing of such tear out strip by means of a second class lever and fulcrum action. The lever fulcrum portion of the present structure is bendable or otherwise somewhat resilient so as to avoid an undesirable creasing and resultant transverse fracture of the tear strip which

may occur with easy open end constructions utilizing rigid second class lever pull means. The tear strip section of the present structure may also be provided with a longitudinally orientated groove or nib which serves to stiffen that area of the tear strip upon which the fulcrum is designed to act.



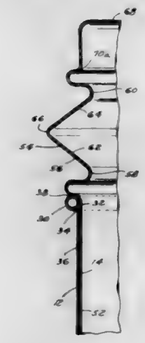
3,445,030
CAN CLOSURE PLUG
Robert S. Lutzker, Scarsdale, N.Y., assignor of one-third to Lawrence D. Lutzker, Scarsdale, N.Y.
Filed Mar. 8, 1968, Ser. No. 711,557
Int. Cl. B65d 39/02, 53/04, 7/04
U.S. Cl. 220—60 10 Claims



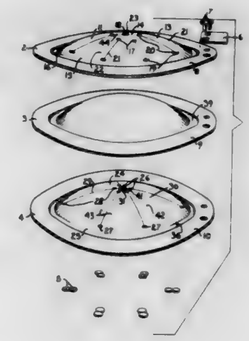
A closure for sealing a can opening defined in the top end wall of the can comprising a substantially resilient member which is provided with a peripheral groove of decreasing depth from front to rear. The front portion is slid into place with the edge walls of the opening received in the groove. The decreasing depth of the groove facilitates snapping the remainder of the member into place to seal the opening.

3,445,031
PLASTIC DRUM LINER WITH CONVERTIBLE TOP FEATURE
Robert A. Dubois, East Setauket, and William H. Gushard, Staten Island, N.Y., assignors to The Greif Bros. Cooperage Corporation, Delaware, Ohio, a corporation of Delaware
Filed Apr. 16, 1968, Ser. No. 721,673
Int. Cl. B65d 25/14, 25/34
U.S. Cl. 220—63 12 Claims

A plastic liner for drums which is supplied in a completely sealed condition and has at least one integral accordion-like projection circumferentially disposed about the side wall adjacent the top and extending outwardly from the side wall. The diameter of the liner at the interfaces between the accordion-like projection and side wall, both distal and proximal the top, is less than the diameter of the reinforcing band or chime at the top of the drum with which the liner is to be ultimately associated so that when the liner is inserted in the drum and the accordion pleat is down-turned over the reinforcing band, the constrictive effect of the interfaces will secure the liner to the drum. The liner may then be converted from a completely sealed to an open top condition by severing the top from the side wall along the apex of the accordion pleat and the lower portion of the liner will remain secured to the reinforcing band thereby preventing the liner from falling into the interior of the drum.

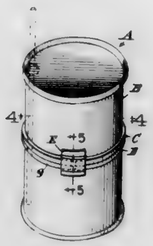


3,445,032
SAFETY PRESSURE RELIEF DEVICE
John H. Raidl, Jr., Mission, Kans., and Robert L. Solter, Blue Springs, and Franklin A. Hansen, Raytown, Mo., assignors to Continental Disc Corporation, Kansas City, Mo., a corporation of Missouri
Filed Nov. 21, 1966, Ser. No. 595,949
Int. Cl. B65d 35/14, 35/24, 35/46
U.S. Cl. 220—89 9 Claims



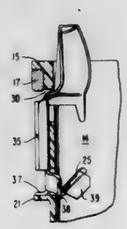
This disclosure relates to pressure relief devices in the form of thin rupture members having dome-shaped bodies with weakened portions therethrough to control rupturing characteristics. The weakened portions include an inner circle of spaced apart apertures near the center of the dome, and an outer circle of more widely spaced apart apertures near the periphery of the dome. Selected apertures in the respective circles form radially aligned pairs of apertures which are joined by radially extending slits. A central aperture is located within the inner circle of apertures and the relationship between the central aperture and inner circle of apertures is such that the periphery of the central aperture is closer to each of the inner circle of apertures than any of the inner circle of apertures are to each other.

3,445,033
DRINKING TUBE ATTACHMENT FOR BEVERAGE CONTAINERS
Alvin H. Sweet, Los Angeles, Calif. (5168 Wood Ave., Apt. B, South Gate, Calif. 90280), and Don A. Sweet, 27026 Freeport Road, Palos Verdes, Calif. 90274
Filed Nov. 2, 1967, Ser. No. 680,090
Int. Cl. A47g 19/22
U.S. Cl. 220—90.2 5 Claims



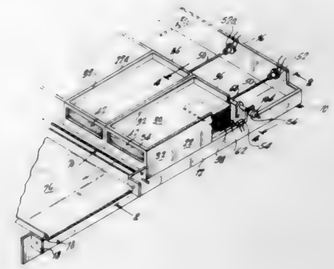
The invention pertains to a particular mode of equipping a beverage container with a drinking tube mounted on the exterior of the container in a manner whereby the tube may be readily detached from the container and utilized in imbibing the liquid content of the latter; the essence of the invention residing in encasing the drinking tube in a disposable protective sheath attached to the container in encompassing relation thereto whereby the drinking tube is protected against contamination while so mounted, yet is conveniently accessible for use, all without involving any modification of the structure of the container to adapt it for mounting of the drinking tube thereon.

3,445,034
PLASTIC CRATE WITH METAL STACKING EAR
Houston Rehrig, 100 Los Altos Drive, Pasadena, Calif. 91105
Filed Apr. 17, 1968, Ser. No. 722,028
Int. Cl. B65d 21/02, 7/44
U.S. Cl. 220—97 9 Claims



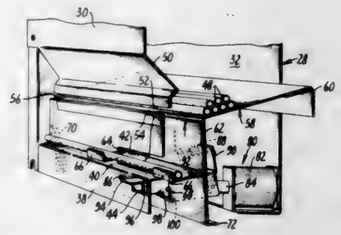
A molded plastic material handling crate having a metal stacking ear rigidly mounted on and projecting above each corner of the crate in position to project into openings in the corners of the bottom of other crates to facilitate stacking of a plurality of crates. The stacking ears each include a body adapted to extend around a corner and overlie a portion of the walls of the crate adjacent the corner. An ear portion projects from the body through an opening in the corner of the crate and upwardly therefrom within and above the corner of the crate to provide the stacking guide. The lower part of the body is rigidly attached to the walls of the crate adjacent the corner.

3,445,035
CARD DISPENSER HAVING A PLURALITY OF SOURCES AND A PLURALITY OF CARD EJECTORS
Harry J. Ackerman, 62—60 99th St., Rego Park, N.Y. 11374
Filed Aug. 23, 1967, Ser. No. 662,730
Int. Cl. B65g 59/06; B65h 3/44, 5/16
U.S. Cl. 221—129 4 Claims



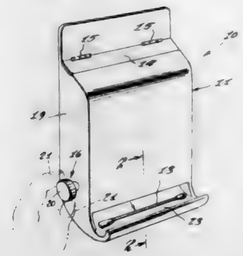
This invention and disclosure are directed to a card dispensing device and the like whereby a card in a stack of cards can be automatically dispensed from the stack. The device includes means for holding the cards in a stack, means for cocking a card dispensing pusher plate, means for projecting the cocked plate forward, and exit means. In an embodiment, means are provided to receive the card and carry it in a longitudinal direction.

3,445,036
APPARATUS FOR DISPENSING STRAWS AND THE LIKE
John C. Sturrock, Lomira, Wis., assignor to Steelmade Inc., Lomira, Wis., a corporation of Delaware
Filed Aug. 24, 1967, Ser. No. 662,948
Int. Cl. B65h 3/34, 3/68
U.S. Cl. 221—191 5 Claims



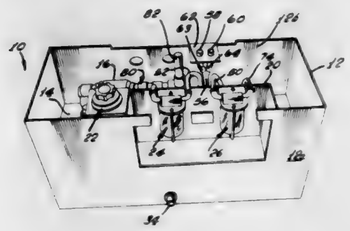
A device for dispensing straws in one-at-a-time fashion designed for incorporation into a coin operated vending machine for beverages so that no more than one straw may be dispensed with each order of beverage supplied by the machine. The apparatus comprises a gate structure adapted to support straws thereabove in stacked parallel relationship with respect to each other and interrelated opening and stop elements operatively associated with the gate structure to permit its selective opening to a degree sufficient to permit but one straw to be dispensed therethrough upon each opening. A lock is also associated with the gate structure so that, when the apparatus is incorporated into a vending machine, the structure can only be opened once for each order supplied by the machine.

3,445,037
ELONGATED ARTICLE DISPENSER HAVING A ROTARY TRAP CHAMBER
Arthur H. Rothbaum, Queens Village, N.Y. (10 Roberta Lane, Commack, N.Y. 11725)
Filed Aug. 7, 1967, Ser. No. 658,945
Int. Cl. B65h 3/00; B65g 59/06
U.S. Cl. 221—196 1 Claim



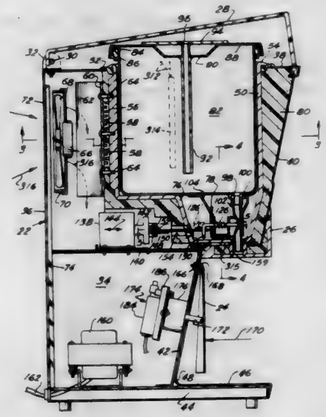
A dispenser for elongated articles including a container having a rotatable dispensing mechanism to dispense articles from the container on to a support positioned beneath the container.

3,445,038
CONTROL UNIT FOR BULK TANK WASHERS AND THE LIKE
William M. Booth, Grand Haven, and George H. Doornbos and Robert H. Rander, Grand Rapids, and John W. Knutson, Spring Lake, Mich., assignors to Werner Machinery Company, Grand Rapids, Mich., a corporation of Michigan
Filed Mar. 22, 1967, Ser. No. 625,196
Int. Cl. B67d 5/08; G01f 11/28
U.S. Cl. 222—56 20 Claims



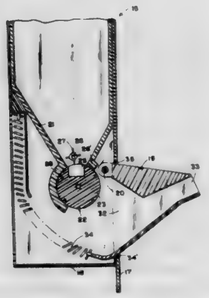
The control unit of the invention has a cabinet or housing defining an internal reservior for holding a predetermined quantity of water fed thereinto from a source through a solenoid-actuated valve means. A pump is provided for supplying liquid from the reservoir to an outlet, and the reservoir has a return, such that the outlet and the return may be connected to a bulk tank or the like and liquid from the reservoir circulated to and from such a tank. Dispensing units are provided for holding desired cleaning and/or sterilizing agents, and the operation of these dispensers is controlled by solenoids actuated by command signals from a timer or programmer, by which the contents of the dispensers are released through hoses or conduits into the aforesaid reservoir, to be dissolved in the liquid contained therein. The contents of the dispensers are carried into the reservoir by water under pressure from the pump, which flushes the agents out of the dispensers. A solenoid-actuated dump valve controlled by the aforesaid timer is provided for emptying the reservoir, and the timer is programmed such that previously-used water is emptied from the reservoir and replaced with fresh water before either of the dispensers is operated. A predetermined quantity of liquid is maintained in the reservoir at all times by sensing means which detect the level of the liquid therein and provide control signals causing added water from the source to be admitted if the level in the reservoir decreases beyond the predetermined minimum.

3,445,039
LIQUID DISPENSER WITH TIMER CONTROL
Benjamin Brodsky, Laverock, and Louis J. Corini, Philadelphia, Pa., assignors to Progressive Metal Equipment, Inc. (also known as Progressive Metal Equipment Incorporated), Philadelphia, Pa., a corporation of Pennsylvania
Filed Oct. 31, 1966, Ser. No. 590,663
Int. Cl. B67d 5/08, 5/62; F16l 55/14
U.S. Cl. 222—70 13 Claims



A dispenser comprising a housing and a vessel mounted within the housing for containing liquid. The vessel includes valve means thereon which are openable by actuating means within the housing. A switch means is provided for opening the valve means. The switch means includes timer means which are adjustable to regulate the amount of time the valve means are open.

3,445,040
SPILLAGE COLLECTING DISPENSERS FOR POWDERS AND THE LIKE
Jacob M. Katz, 225 E. 57th St., New York, N.Y. 10022
Filed Feb. 5, 1968, Ser. No. 702,894
Int. Cl. G01f 11/24
U.S. Cl. 222—108 6 Claims



A rotary bucket below a hopper is arranged to move about a half turn and discharge into an enlarged end of

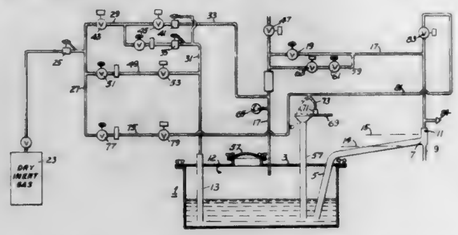
a swingably mounted tubular operating member; such bucket movement occurring when said operating member is swung downwardly at its other end, whereupon the material discharged will come into the palm of the hand manipulating said operating member. Spring means bias the operating member to a normal rest position where its discharge end is upward. Gearing is provided to make the bucket turn when the operating member is swung. An agitator rotatably mounted within the hopper is also turned by the gearing.

3,445,041

LIQUID DISPENSING ASSEMBLY WITH IMPROVED FILLING MEANS

James Samuel Campbell, Orinda, and Wilfred Ernest Willis, San Francisco, Calif.; said Campbell assignor to Campbell Auto-Pour Engineering, Berkeley, Calif., a corporation of California

Filed Oct. 5, 1966, Ser. No. 584,547
Int. Cl. B67d *5/02, 5/54*
U.S. Cl. 222—152 **2 Claims**



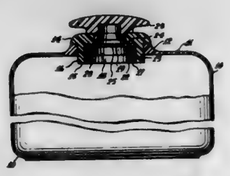
Dispensing of molten metal from a furnace by applying inert gas pressure to said furnace to force the metal out of a tube, and further applying said gas to the tube.

3,445,042

CLOSURE FOR A FLUID DISPENSING CONTAINER HAVING A FLEXIBLE SLITTED DIAPHRAGM

Austin E. Elmore, 4533 N. Scottsdale Road, Scottsdale, Ariz. 85251, and Ernest A. Uhlmann, 5202 N. Saddle Rock Drive, Phoenix, Ariz. 85018

Filed July 17, 1967, Ser. No. 653,788
Int. Cl. B65d *35/50, 25/40;* **F16k** *15/14*
U.S. Cl. 222—212 **1 Claim**



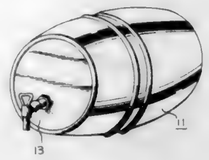
A closure for a resilient flexible container having a diaphragm of rubber or other flexible material across the outlet of the container in which is formed a diametrically disposed slot which is normally closed but which may be opened by pressure on the container to extrude material through the slot and when pressure is released from the container air may be drawn in through the slot as the container returns to its normal shape, ready for the next squeeze to extrude another supply of material.

3,445,043

DISPENSING APPARATUS

Glen C. Bull, 2800 Quebec St. NW., Washington, D.C. 20008

Filed Jan. 12, 1967, Ser. No. 608,820
Int. Cl. B67d *5/50;* **B65d** *25/38*
U.S. Cl. 222—386.5 **9 Claims**



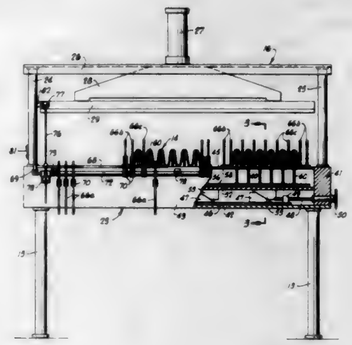
A container for fluent materials includes a compressible mass for exerting controllable pressure on the fluent material for dispensing said material; an impervious flexible barrier being also provided to prevent intermingling of the fluent material and compressible mass.

3,445,044

APPARATUS FOR FORMING PLEATS IN DRAPES

John T. Boyes, 1834 Maine St., Quincy, Ill. 62301

Filed Oct. 20, 1967, Ser. No. 676,931
Int. Cl. D06j *1/00;* **A41h** *43/00*
U.S. Cl. 223—32 **10 Claims**



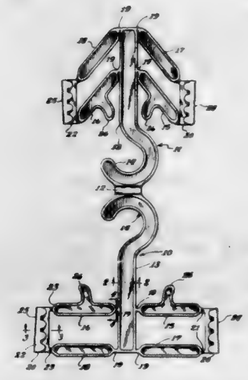
Apparatus including clamping assemblies for clamping each end of a drape panel, forming pleats in the panel, and suspending the panel horizontally over a steam table. The clamping assembly for the unpleated end of the panel includes upper and lower clamping bars. First spaced pleat forming members extend upward from the lower clamping bar surface, and the upper folds of the pleats are formed over these members. Second spaced pleat forming members are placed between the first members for forming the lower folds against the lower clamping bar. The first pleat forming members are guided for vertical movement in the lower clamping bar, and are supported on an inflatable member which, when inflated, raises these members to apply uniform tension to the pleats even though the pleats may not be of uniform depth. The pleat forming members are provided with appropriately placed resilient pads to prevent slippage of the material and preclude noticeable impressions in the material. The above-described mechanism securely clamps the unpleated end of the drape panel, so that panel may be stretched to desired length by the clamping assemblies.

3,445,045

GARMENT HANGER

Martin H. Panning, 304 Sunny Lane, Thiensville, Wis. 53092

Filed Apr. 26, 1967, Ser. No. 633,740
Int. Cl. A41d *27/22*
U.S. Cl. 223—95 **7 Claims**



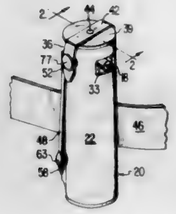
A garment hanger of molded one-piece plastic material. The hanger includes movable arm portions which are extended to engage the garment. The material is a semi-flexible plastic enabling hinging between the movable parts of the hanger while the hanger is so shaped that the various parts thereof are relatively rigid.

3,445,046

HOLSTER

Carter L. Wilson, 5808 Maywood Blvd., Virginia Beach, Va. 23455

Filed Oct. 9, 1967, Ser. No. 673,602
Int. Cl. A45c *1/04;* **B67d** *5/64*
U.S. Cl. 224—26 **9 Claims**



A holster for snugly holding an elongated aerosol-type container, having an opening for ejecting fluid from the container, an access opening to a valve actuator on the container and means to hold the holster on the belt of the user, while allowing quick detachment.

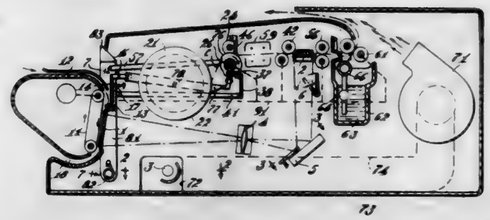
3,445,047

APPARATUS FOR FORMING SHEETS FROM A STRIP OF MATERIAL

Donald D. Sloan, Weston, Mass., assignor to Dennison Manufacturing Company, Framingham, Mass., a corporation of Nevada

Continuation-in-part of application Ser. No. 586,131, Oct. 12, 1966. This application July 31, 1967, Ser. No. 657,151
Int. Cl. B26f *3/02;* **B65h** *35/10*
U.S. Cl. 225—100 **10 Claims**

Apparatus for forming sheets of predetermined length from a strip of material such as paper having cuts extending part way across the strip along transverse lines at recurrent intervals corresponding to said length and copying records on the sheets, the sheets being formed



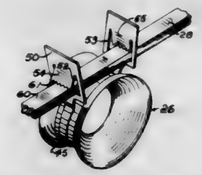
during recurrent cycles of operation by rupturing the strip along said lines, with manual means for starting each cycle.

3,445,048

ADJUSTABLE GUIDE FOR FIBROUS MATERIAL

Steve W. Kundrach, South Euclid, Ohio, assignor to The Warner & Swasey Company, Cleveland, Ohio, a corporation of Ohio

Filed Mar. 6, 1967, Ser. No. 620,900
Int. Cl. B65h *23/32*
U.S. Cl. 226—199 **11 Claims**



A fibrous material guide member has a material engaging surface and is connected to a support member by a spring means. The spring means includes a spring body portion tightly engaging a surface of the guide member and spring arms extending from the guide member to the support member. The spring arms each have an opening through which the suport member extends and each spring arm has a tab portion which is located adjacent the opening. Each tab portion is angularly disposed relative to its respective spring arm and is urged into engagement with the support member by its spring arm to lock the guide member in a fixed position relative to the support member. The tabs have pointed projections which bite into the material of the suport member, and the spring arms are deflectible to move the projections out of engagement with the support member to permit sliding movement of the guide member and spring means along the support member.

3,445,049

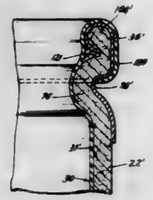
PLASTIC LINED FIBER CONTAINERS

Herbert L. Carpenter, Jr., Babylon, N.Y., assignor to The Greif Bros. Cooperage Corporation, Delaware, Ohio, a corporation of Delaware

Original application Mar. 16, 1964, Ser. No. 352,066, now Patent No. 3,266,390, dated Aug. 16, 1966. Divided and this application Dec. 7, 1965, Ser. No. 536,246
Int. Cl. B65d *25/14, 15/16*
U.S. Cl. 229—14 **7 Claims**

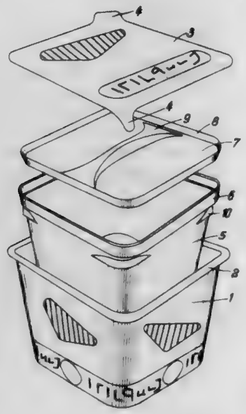
An improved drum is provided in which a tubular shell made from wound laminated layers of fibrous material includes at one end a metal reinforcing chime. The shell and the chime are formed into an external groove and internal shoulder extending completely around the drum a short distance from the end. A closure is disclosed at

the reinforced end of the shell and abuts against the internal shoulder. An integral one-piece plastic liner is blown into firm surface-to-surface engagement with the shell and conforms to the configuration of the inner sur-



faces of both the shell and the closure. The liner together with the shell enclosure are provided with correspondingly curved portions at the juncture between the shell and closure whereby sharp corners are eliminated at this location.

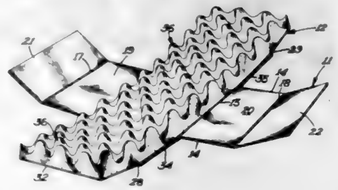
3,445,050
PACKAGE FOR FOODSTUFFS
Artur Peters and Bernhard Friebe, Dissen, Germany, assignors to Unilever N.V., a corporation of the Netherlands
Filed May 2, 1967, Ser. No. 635,451
Claims priority, application Germany, May 2, 1966, H 59,288
Int. Cl. B65d *5/56, 35/14, 5/40, 5/62, 5/58*
U.S. Cl. 229—14 **1 Claim**



A package for foodstuffs, for instance for margarine, which consists of one or two containers fitting one within the other. Each of the two containers may be provided with a separate cover, or a single cover may be used for both containers. The single container has a clamping cover and a sealing cover.

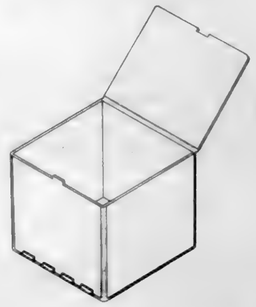
3,445,051
CONTAINER
Joseph Goldman, Minneapolis, Minn., assignor, by mesne assignments, to Logistics Industries Corporation, Philadelphia, Pa., a corporation of New York
Continuation-in-part of application Ser. No. 655,051, July 21, 1968. This application Jan. 4, 1968, Ser. No. 701,806
Int. Cl. B65d *5/56, 13/00, 25/12*
U.S. Cl. 229—14 **5 Claims**

This invention relates to a container for fragile materials formed from two transversely disposed foldable panels. The two panels provide the container base, side walls and cover with a minimum of material waste. A layer of resilient material is secured to the inner side



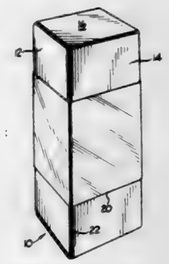
of the inner panel to serve as a protective cushion in contact with the fragile article contained therein.

3,445,052
HINGED LAMINATE
John V. Lewallen, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Aug. 22, 1966, Ser. No. 574,081
Int. Cl. B65d *5/00, 1/00, 13/00*
U.S. Cl. 229—16 **9 Claims**



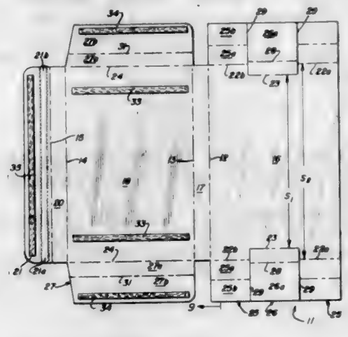
A structural laminate having an integral hinge formed in one layer thereof with the molecules in the region of the hinge orientated in a direction in the plane of said layer and perpendicular to the bend line of the hinge.

3,445,053
DISPLAY CARTON HAVING A FILM OVERLAP
William B. Lotz, Philadelphia, Pa., assignor to Container Corporation of America, Chicago, Ill., a corporation of Delaware
Filed Jan. 26, 1966, Ser. No. 523,153
Int. Cl. B65d *5/02, 65/00, 75/00*
U.S. Cl. 229—37 **1 Claim**



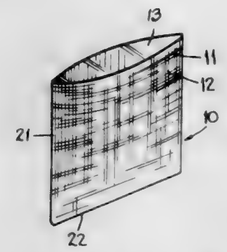
A paperboard carton having a strip of flexible decorative material disposed over the outer surfaces of the carton side walls and being attached at its ends to the carton at a corner of the carton in such a way that the strip can be readily removed without damaging the outer surfaces of the carton walls.

3,445,054
SHIPPER CARTON
Charles L. Champlin, Rittman, Ohio, assignor to Packaging Corporation of America, Evanston, Ill., a corporation of Delaware
Filed Nov. 6, 1967, Ser. No. 680,675
Int. Cl. B65d *5/12, 17/20, 17/24*
U.S. Cl. 229—40 **8 Claims**



A one-piece shipper carton formed from a blank of foldable sheet material for packaging a book or the like, wherein the bottom panel of said carton, which subtends the back cover of an accommodated book, has formed integral therewith retaining straps which snugly engage the opposite ends of said book. The carton also includes a top panel which overlies the front cover of the accommodated book and is bonded to the retaining straps when the latter are snugly engaging said book and thus, prevent accidental endwise shifting of the book within the carton. The carton is provided with end walls which are disposed in spaced relation with respect to the adjacent ends of the accommodated book and the retaining straps engaging said book ends. The corresponding peripheral sides of the top and bottom panels are interconnected by side panels which snugly engage the sides of the accommodated book and thus prevent accidental sidewise shifting of said book.

3,445,055
REINFORCED LAMINATED PLASTIC MATERIALS
Morton I. Port, West End, N.J., and Bernard L. Schwartz, Scarsdale, N.Y., assignors to Parker, Pace Corporation, New York, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 419,140, Dec. 17, 1964. This application Apr. 28, 1966, Ser. No. 545,926
Int. Cl. B65d *31/02*
U.S. Cl. 229—53 **11 Claims**

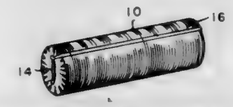


1. A dimensionally stable, heavy duty, waterproof bag of high strength; said bag having an open end and a closed end and being formed of a reinforced material constituted by:

(a) a sheet-like fabric formed of woven warp and filling yarns which are of flat, monofilament synthetic plastic material mono-axially oriented to the point of very low residual elongation in the longitudinal direction to obtain maximum coverage for the least amount of material in terms of weight as well as optimum tensile strength, and

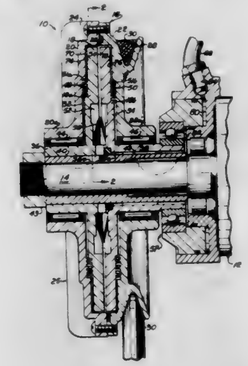
(b) a film formed at least in part of a layer of synthetic plastic material having greater elongation properties than said yarns and laminated to said fabric to reinforce same, said fabric being on the exterior of the bag to afford resistance against slippage.

3,445,056
WRAPPED COIN PACKAGE
John K. McCollough, Spartanburg, S.C., assignor to Milliken Industrials Corporation, White Stone, S.C., a corporation of South Carolina
Continuation-in-part of application Ser. No. 643,257, June 2, 1967. This application Mar. 14, 1968, Ser. No. 716,696
Int. Cl. B65d *75/06, 65/04*
U.S. Cl. 229—87.2 **3 Claims**



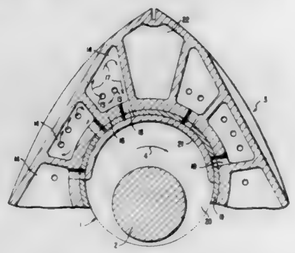
A compact package of coins wrapped in a heat shrunk film material formed from a roll of heat shrinkable film material and having transverse end seals and a horizontal seam.

3,445,057
DRIVE MECHANISM
Alex Sutaruk, Hazel Park, Mich., assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio
Filed Dec. 6, 1966, Ser. No. 599,630
Int. Cl. F04b *49/02;* **F16d** *19/00*
U.S. Cl. 230—15 **16 Claims**



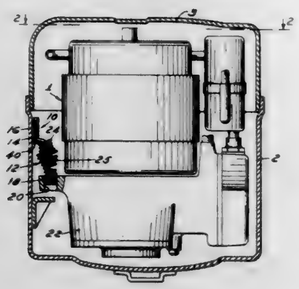
An improved drive mechanism for driving an air compressor includes a driving member which is adapted to be connected to an engine of a vehicle and a driven member which is adapted to be connected to the air compressor. The drive mechanism is controlled by the air pressure output of the compressor to provide a mechanical drive between the driving and driven members when the air pressure output of the compressor is below a first predetermined pressure and a fluid drive between the members when the air pressure is above the first predetermined pressure. The fluid drive between the members is discontinued when the output of the compressor reaches a second predetermined pressure. A speed responsive valve assembly is provided for limiting the speed at which the compressor can be driven by the fluid drive.

3,445,058
PISTON FOR A ROTARY PISTON INTERNAL COMBUSTION ENGINE
Wolf-Dieter Bensinger, Stuttgart-Riedenberg, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Jan. 4, 1967, Ser. No. 607,292
Claims priority, application Germany, Jan. 7, 1966, D 49,092
Int. Cl. F04c *17/02;* **F02b** *53/00, 55/06*
U.S. Cl. 230—145 **5 Claims**



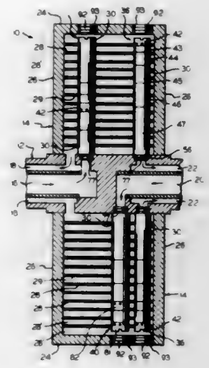
A piston for a rotary piston internal combustion engine, especially of trochoidal construction, which is provided at each of the piston end faces with at least two substantially concentrically arranged sealing rings in engagement with the lateral housing walls to seal the space between the piston end faces and adjoining lateral housing walls, and in which the annular space between two respective concentrically arranged sealing rings are in communication with chambers formed within the piston for the removal from these spaces of lubricating oil under the influence of centrifugal forces, whereby the chambers, in turn, are provided with discharge bores to return the lubricating oil from these chambers radially inwardly.

3,445,059
MOTOR-COMPRESSOR UNIT
Billy B. Hannibal, Tecumseh, and Paul B. Hover, Clinton, Mich., assignors to Tecumseh Products Company, Tecumseh, Mich., a corporation of Michigan
Filed Sept. 25, 1967, Ser. No. 670,240
Int. Cl. F04b *39/00, 39/12*
U.S. Cl. 230—235 **14 Claims**



A conventional motor-compressor unit for a refrigeration system suspended by spaced coil springs within its housing, which can be hermetically sealed. The springs individually thread at their lower ends into peripherally spaced sockets in the compressor unit and at their upper ends threadedly engage hanger brackets individually receivable in mounting sockets peripherally spaced about the interior of the housing. The motor-compressor unit with the springs and brackets attached is lowered into the housing in a vertical position with the brackets initially telescoping with a clearance fit into the sockets until each bracket encounters a further portion of the socket in which it has a friction fit. The unit can then be released whereupon it will be temporarily supported for further forcible adjustment of each bracket in its socket as required to obtain the desired leveling, spacing or other orientation of the motor-compressor unit in the housing. Then each socket is crimped into fixed holding relation with its bracket to thus finally and permanently affix the motor-compressor unit in the housing.

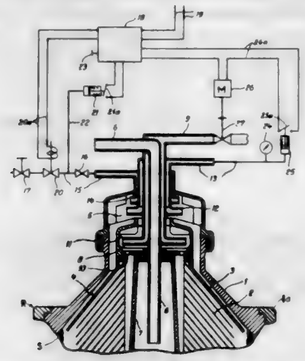
3,445,060
ARTICULATED LIQUID FEED OR DISCHARGE COLUMN FOR COUNTERCURRENT EXCHANGE DEVICES
Wladzia G. Podbielniak Doyle and Collin M. Doyle, both of 21 W. Elm, Chicago, Ill. 60610
Filed Aug. 11, 1966, Ser. No. 571,752
Int. Cl. B04b *5/06*
U.S. Cl. 233—15 **6 Claims**



An articulated liquid feed or discharge column for countercurrent exchange devices has a plurality of tubular segments removably secured in interchangeable end-to-end relationship to form a column. At least one of the segments comprises either a selector conduit or a stopper selector with one or more openings formed in the wall thereof. An imperforate tubular or conduit member used with two selector conduits in said articulated column affords a dual phase liquid feed means.

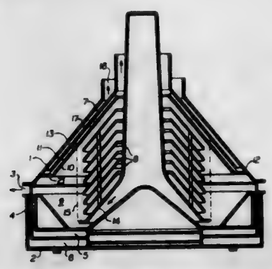
3,445,061
APPARATUS FOR INDICATING SLUDGE LEVEL IN CENTRIFUGES
Carl-Göran Nilson, Tullinge, Sweden, assignor to Alfa-Laval AB, Tumba, Sweden, a corporation of Sweden
Filed Nov. 13, 1967, Ser. No. 682,221
Claims priority, application Sweden, Nov. 14, 1966, 15,514/66
Int. Cl. B04b *11/02*
U.S. Cl. 233—20 **10 Claims**

The centrifugal rotor has a channel leading from the sludge-collecting space at the peripheral part of the rotor to a chamber located in the central part of the rotor, and the chamber is provided with an inlet for supplying a fluid to the chamber. Two means are provided for sensing two different liquid levels, respectively, in the chamber; and the means for sensing the outer of the two levels may be arranged to operate a control for maintaining the liquid level in the chamber somewhere between the aforesaid two levels during the normal centrifugal separating operation. Thus, when sufficient sludge is accumulated to clog the outer end of the aforesaid channel, the liquid level in



the chamber will increase until it is sensed by the means for sensing the inner of the two levels.

3,445,062
CENTRIFUGAL SEPARATOR APPARATUS
Franz Josef Loddenkemper and Aloys Tenthoff, Oelde, Westphalia, Germany, assignors to Westfalia Separator Aktiengesellschaft, Oelde, Westphalia, Germany, a corporation of Germany
Filed Apr. 5, 1967, Ser. No. 628,744
Claims priority, application Germany, Apr. 5, 1966, W 41,292
Int. Cl. B04b *5/02, 11/08*
U.S. Cl. 233—29 **10 Claims**

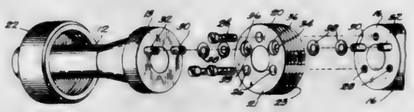


A centrifugal separator having a centrifuge drum provided with internal barrier means defining a first annular passage extending outward from an inlet located beyond a separating zone to the drum wall, and a second annular passage communicating with the first and extending to a discharge outlet at the upper end of the drum, and an additional outlet located near the drum wall through which outlet part of the fluid flow through the first passage is diverted to discharge into the drum solids entrained in such flow before entering the second passage, and also to prevent entry into the second passage of solids accumulated in the drum.

3,445,063
RACEWAY TRACK
Dan Ferentinos, Brooklyn, N.Y., assignor to The Lionel Corporation, New York, N.Y., a corporation of New York
Filed May 19, 1967, Ser. No. 639,708
Int. Cl. E01b *23/00*
U.S. Cl. 238—10 **3 Claims**

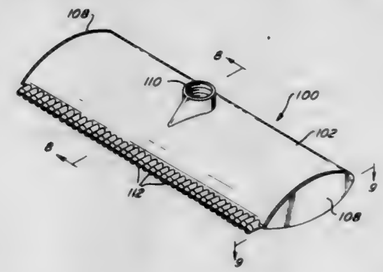
In a track system used by remotely operated, electrically driven vehicles, a banked, molded section having an arcuate length is provided. The angle of bank varies over the length of the section.

3,445,064
WELDING GUN WATER SEAL
Anthony J. Zajac, Mukwonago, and Edward J. Hahn, Milwaukee, Wis., assignors to American Welding & Engineering Co., Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed Aug. 9, 1967, Ser. No. 659,482
Int. Cl. B05b *7/06, 15/00;* **B23k** *9/00*
U.S. Cl. 239—132.3 **2 Claims**



Disclosed herein is a seal arrangement for the water supply and water discharge tubes of a water jacket of a welding gun nozzle. The co-axially aligned water inlet and outlet tubes extend into tube apertures in the insulator which separates the nozzle from the welding gun head. The tube apertures have annular recesses or counterbores on each side of the insulator to receive O-rings located on the water tubes. The O-rings are compressed in assembly to seal the water tubes to the insulator.

3,445,065
UNIFORM DROPLET DISCHARGE SPRAYER UTILIZING AN ABSORBENT MATERIAL THEREIN
John E. Waldrum, Ambler, Pa., assignor to Amchem Products, Inc., Ambler, Pa., a corporation of Delaware
Filed May 31, 1966, Ser. No. 558,539
Int. Cl. B05b *1/20;* **B64d** *1/18*
U.S. Cl. 239—159 **5 Claims**

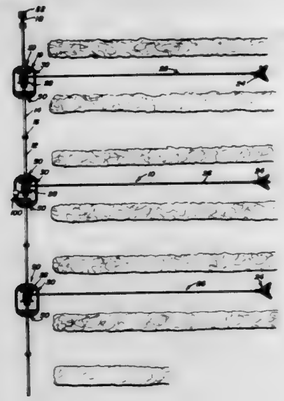


A uniform sprayer involving a movable nozzle to which a liquid supply is led and discharged therefrom in laminar flow, with the direction of discharge being substantially opposite to the direction of nozzle movement, such that the discharge stream breaks up into droplets of substantially uniform size. The invention involves a sprayer with a hollow body filled with an absorbent material with liquid being fed into the hollow body and into the absorbent material to be sprayed through discharge openings in the hollow body to substantially eliminate drippage upon shut off of the liquid supply.

3,445,066
WATER SPRINKLER SYSTEM
Donald A. Mohar, Rte. 1, Box 378A, Grandview, Wash. 98930
Filed Dec. 2, 1966, Ser. No. 598,798
Int. Cl. B05b *3/00, 3/18, 15/06*
U.S. Cl. 239—189 **25 Claims**

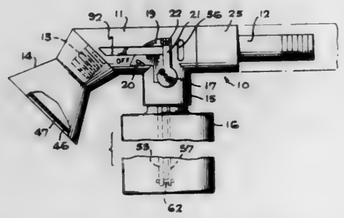
An elongated rigid rotatably mounted water conveying pipe mounting a series of hose reels at selected points along the length thereof. Each of the reels is rotatable

independent of the pipe for enabling an extension of the sprinkler carrying hoses thereon laterally outward from the pipe. Each of the reels is also selectively lockable to



the pipe for rotation therewith so as to effect a simultaneous inward reeling of the sprinkler bearing hoses during the sprinkling operation.

3,445,067
EDUCTOR TYPE PROPORTIONER
Garland L. Sheldall, 9063 Nagle Ave., Panorama City, Calif. 91402
Filed Oct. 24, 1965, Ser. No. 504,581
Int. Cl. B05b *7/30;* **F04f** *5/48;* **F16k** *19/00*
U.S. Cl. 239—318 **9 Claims**



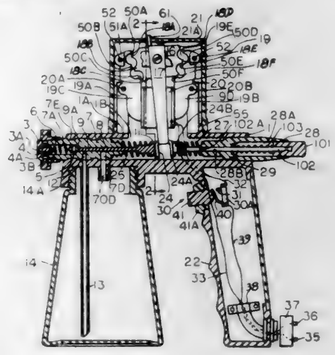
1. In an eductor for drawing a second liquid into a carrier stream of a first liquid, the combination which comprises:

means coupling said stream to a first substantially cylindrical chamber; an elongated inlet throat chamber of constant diameter for receiving the liquid carrier stream from said first chamber, the diameter of said inlet throat being substantially smaller than the diameter of said first chamber; an expansion chamber of greater diameter and length than said throat chamber and coaxially arranged therewith to receive the carrier stream; a secondary duct opening into the side of said expansion chamber on one end and communicating with a supply of the second liquid on its opposite end;

control means interposed in said secondary duct having a first position and a second position whereby in said first position, the second liquid is conducted via said secondary duct to said expansion chamber and when in said second position, the supply of the second fluid is interrupted at which time said expansion chamber is vented to atmosphere;

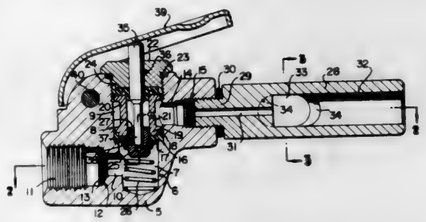
said control means including a rotatable valve having a passage extending therethrough adapted to communicate between in-line duct segments of said secondary duct when said control means is in its first position and an elongated slot formed in said valve transverse to said valve passage adapted to communicate between said secondary duct and atmosphere to effectively vent said expansion chamber; and vacuum breaker means within said first chamber for venting said first chamber to atmosphere.

3,445,068
LIQUID ATOMIZER
Josef Wagner, Friedrichshafen-Fischbach, Germany
Filed Dec. 17, 1965, Ser. No. 514,611
Int. Cl. B05b *9/04;* **H02k** *33/02*
U.S. Cl. 239—332 **2 Claims**



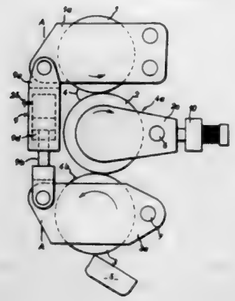
An adjustable stroke oscillating armature drive for a pump piston used in a liquid atomizer, whereby, the oscillating armature actuates the pump piston to create a vacuum to thereby draw fluid out of a container and through a nozzle to the atmosphere.

3,445,069
CONTROLLED FLOW SAFETY NOZZLE
Daniel Orth Druge, San Leandro, Calif., assignor to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Sept. 12, 1966, Ser. No. 578,569
Int. Cl. B05b *7/00, 1/14, 1/32*
U.S. Cl. 239—407 **5 Claims**



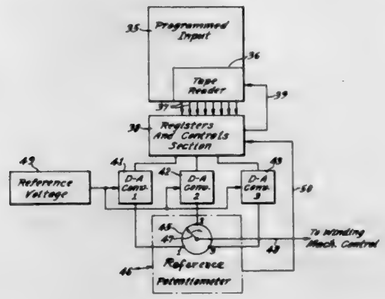
A manually controlled fluid delivery nozzle is disclosed including a body having a passage therethrough, manually actuable valve means within the passage for controlling flow of fluid through the passage, fluid restrictive provisions within the passage controlling the fluid flow therethrough per given input pressure and porting provisions adjacent the outlet through which ambient fluid is drawn by aspiration and through which fluid is exhausted upon blockage of the outlet.

3,445,070
ADJUSTMENT OF THE ROLLS OF GRINDERS AND OTHER MACHINES WHICH INCLUDE ROLLS
André Louis Verdier, 6 Ave. Daniel-Lesueur, Paris, France
Filed Mar. 16, 1964, Ser. No. 352,158
Claims priority, application France, Mar. 19, 1963, 928,484
Int. Cl. B02c *4/02*
U.S. Cl. 241—37 **8 Claims**



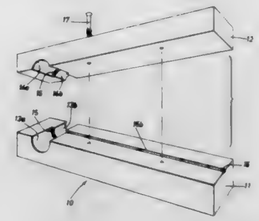
An adjusting device for controlling the actual spacing of the working surfaces of the rolls of a rolling or milling machine, comprising a pair of gauging means each responsive to the actual distance between the end bearings at one side of the rolls, each gauging means including a chamber whose volume tends to vary in response to variations in said distance, to produce a marginal variation of pressure of a fluid contained in the chamber. Means are provided to control the tightening forces applied to the bearings and/or rotation speeds of the rolls, in response to the pressure variations.

3,445,071
METHOD AND APPARATUS FOR WINDING A PRECISION RESISTOR
Charles F. Kezer, Mineola, and Thomas P. Zingarelli II, New York, N.Y., assignors to Litton Industries, Inc., Beverly Hills, Calif., a corporation of Delaware
Filed June 14, 1967, Ser. No. 646,019
Int. Cl. B65h *81/06;* **G01v; G05f**
U.S. Cl. 242—7.03 **12 Claims**



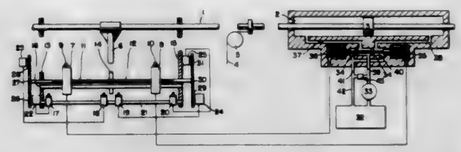
A method and apparatus for controlling a winding machine for making the resistor element of a potentiometer. The apparatus employs a programming arrangement having signal-sensing and -storage means for control signals. In the illustrative embodiment, the stored digital signals encoded on tape are converted into analog signals which are utilized to control the spacing of the turns of resistance wire which forms the resistor being wound on the winding machine, in order to obtain a desired spatial-resistance characteristic. Changes in the functional characteristics of the wound resistor are effected by using a different input element (tape). The apparatus also includes checking means to enable correction of any malfunction of the control system.

3,445,072
WINDING JIG
Heinz Juergen Koppisch, 98 Addington Crescent, Bramalea, Ontario, Canada
Filed June 6, 1966, Ser. No. 555,306
Int. Cl. B65h *81/06*
U.S. Cl. 242—7.21 **2 Claims**



A portable winding jig is provided for holding a pipe or the like to be covered with strand. The jig includes two body portions, each housing a mating slot of different diameters together defining a shouldered passageway through which the pipe is moved. Strand is drawn through a groove in one of the body portions perpendicular to the passageway and intersecting it at said shoulder so that rotation of the pipe along with an axial movement of same will wrap the strand about the pipe.

3,445,073
CONTROL AND SWITCHING ARRANGEMENT FOR MECHANICALLY OR HYDRAULICALLY DRIVEN TRAVERSING MECHANISMS IN SPINNING, WINDING AND ESPECIALLY RING TWISTING MACHINES
Heinz Schippers and Hans Lohest, Remscheid-Lennep, Germany, and Jan R. de Ruig, Arnhem, Netherlands, assignors to Barmer Maschinenfabrik AG, Wuppertal-Oberbarman, Germany
Continuation of application Ser. No. 374,114, June 10, 1965. This application Oct. 16, 1967, Ser. No. 675,712
Int. Cl. B65h *54/00, 57/28*
U.S. Cl. 242—26.3 **3 Claims**

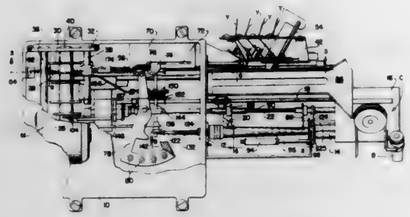


Control and switching means for traverse motion devices in which impulse producing means are used to fix the position of limit switches in accordance with a given winding program.

3,445,074
WINDING MACHINE

Joseph E. Di Meglio, Johnston, R.I., assignor to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts

Original application July 26, 1966, Ser. No. 567,903, now Patent No. 3,384,314, dated May 21, 1968. Divided and this application Apr. 9, 1968, Ser. No. 719,890
Int. Cl. B65h *54/02*; D03d *45/00*
U.S. Cl. 242—27 8 Claims

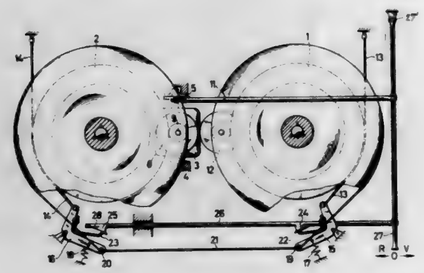


Automatic bobbin winding machine having yarn delivery means operable to present one of a plurality of supply yarns to a bobbin for winding thereon. Each bobbin is provided with indicium. The machine includes means to sense the indicium and present a selected one of the plurality of yarns to the bobbin for winding in accordance with the indicium on the bobbin.

3,445,075
COOPERATIVE BRAKE AND DRIVING DEVICE FOR A RECORDING MACHINE

Richard Siegemund, St. Georgen, Black Forest, Germany, assignor to Dual Gebruder Steidinger, St. Georgen, Black Forest, Germany, a corporation of Germany

Filed May 31, 1966, Ser. No. 553,880
Claims priority, application Germany, June 1, 1965, St 23,913
Int. Cl. G11b *15/44*; B65h *23/08*
U.S. Cl. 242—55.12 9 Claims

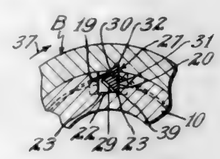


A driving device for a magnetophone with a rewindable recording carrier having two winding plates disposed spaced apart and a motor means including a frictional clutch for selective driving engagement with one of the recording plates. A setting means including an operating member is provided for pivoting the motor into driving engagement and includes an elastic means yielding connected between the motor and the operating member for pivoting and retaining the motor in driving engagement against one of the winding plates Brake means are provided engaging each of the winding plates respectively, which are adapted to have a stronger effect than that of the friction clutch, and the brake means and the setting means are operatively connected for releasing the brake, when the setting means is actuated.

3,445,076
CORE CHUCK

Herbert F. Dalglish, 284 Cherokee Ave., St. Paul, Minn. 55107

Filed Aug. 2, 1967, Ser. No. 657,821
Int. Cl. B65h *17/02*
U.S. Cl. 242—68.2 10 Claims

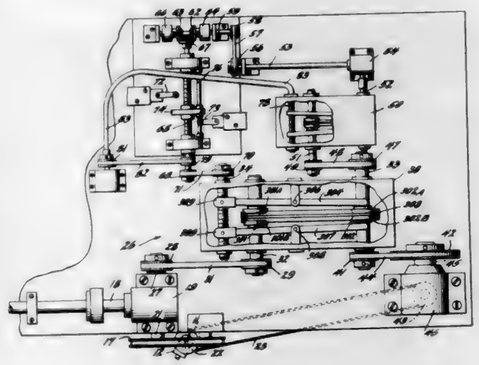


A core chuck in which a cylindrical member is provided with one or more elongated slots parallel to the axis of the member, and a tooth of generally triangular cross-section is supported with one apex of the tooth projecting from the slot to engage a core or similar member. Upon relative movement in one rotative direction between the member and the core, the tooth pivots about an apex of the tooth and engages farther into the core.

3,445,077
STRAND DISTRIBUTING AND RECEIVING APPARATUS AND METHOD

Joseph I. Cole, Staten Island, and Harold S. Moss, Brooklyn, N.Y., assignors to Nassau Smelting and Refining Company, Incorporated, Tottenville, Staten Island, N.Y., a corporation of New York

Filed Aug. 3, 1967, Ser. No. 658,185
Int. Cl. B21c *47/28*
U.S. Cl. 242—83 16 Claims

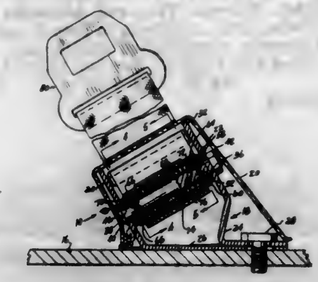


Strand is advanced at constant linear velocity through a rotating flier tube which distributes the strand into compact layers of spiral convolutions on a nonrotating receiving platform. The rotating flier tube is cyclically operated between conditions of nonlinear angular acceleration and nonlinear angular deceleration by cyclically reversed, nonlinear control of a variable speed transmission. The receiving platform is lowered by the thickness of the strand with each such cyclical reversal and is continuously vibrated to form compact layers of spiral convolutions on the platform.

3,445,078
ROTARY SEAT BELT RETRACTOR

Lawrence H. Smith, Bloomfield Hills, and Gerald J. Partridge, Detroit, Mich., assignors to Jim Robbins Seat Belt Company, Royal Oak, Mich., a corporation of Delaware

Filed Mar. 23, 1967, Ser. No. 625,404
Int. Cl. B65h *75/48*
U.S. Cl. 242—107 7 Claims

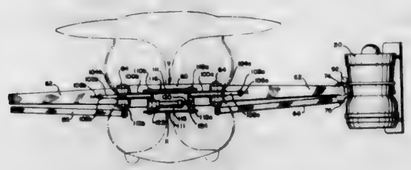


A rotary seat belt retracting device having a wind-up unit supported by a mounting bracket anchored to a fixed part of the vehicle. The wind-up unit comprises a rotatable metal wind-up drum, a non-rotatable metal sleeve supported on an anchor bolt fixed to the bracket and a pair of axially spaced plastic bushings supporting the drum for rotation around the sleeve. One bushing is attached to the drum and rotates around one end of the sleeve, while the other bushing is attached to the sleeve and provides a journal for the drum so that each bushing provides a plastic to metal bearing engagement between the drum and the sleeve. A coil spring surrounding the sleeve between the bushings has its opposite ends attached to the bushings to provide a torsional bias between the drum and the sleeve.

3,445,079
V/STOL AIRCRAFT

John W. Burns, Northport, N.Y., assignor to Fairchild Hiller Corporation, Hagerstown, Md., a corporation of Maryland

Filed July 27, 1966, Ser. No. 568,317
Int. Cl. B64b *1/24*; B64d *27/00*
U.S. Cl. 244—54 5 Claims

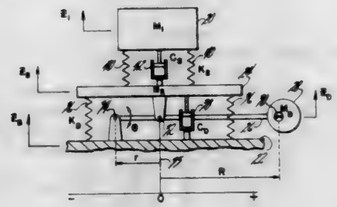


A V/STOL aircraft comprises two pairs of lifting jets mounted on respective mounting arms on each side of the aircraft. The lifting jets are movable on the mounting arms from a position within the fuselage, where they are stored with their longitudinal axes parallel to the longitudinal axis of the aircraft, to a position exterior of the aircraft for vertical take-off and landing. The lifting jets are rotatable with respect to their associated mounting members so as to provide a substantial amount of vertical thrust. The fuel which is consumed by the engines during take-off may be stored in collapsible bladders disposed within the compartment in the fuselage occupied by the lifting jets during normal horizontal flight.

3,445,080
DYNAMIC ANTIRESONANT VIBRATION ISOLATOR

William G. Flannelly, South Windsor, Conn., assignor to Kaman Corporation, Bloomfield, Conn., a corporation of Connecticut

Filed May 26, 1967, Ser. No. 641,540
Int. Cl. F16f *15/04*
U.S. Cl. 248—20 6 Claims

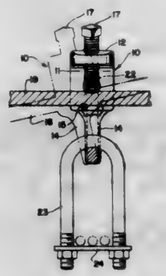


A vibration isolator is disclosed for reducing the transmission of vibratory and shock forces from an excited base to an isolated item. The isolator is a passive system wherein spring forces are counteracted by inertia forces to produce a high degree of isolation at certain frequencies of vibration with low static deflection. An intermediate member is located between the base and the isolated item and is connected to the isolated item by a spring and damper. Between the intermediate member and the base is another spring and damper and an inertia system including an auxiliary mass which is moved relative to both the intermediate member and the base in response to relative movement of the latter two parts.

3,445,081
CONDUIT CLAMP SUPPORT

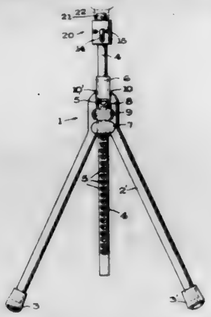
Nicholas P. Roussos, Bridgeville, Pa., assignor to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio

Filed Jan. 17, 1967, Ser. No. 609,936
Int. Cl. F16l *3/00*
U.S. Cl. 248—72 1 Claim



A C-type clamp formed of two C-type sections, one in a vertical direction and the other as a base in the horizontal direction, the two being joined through a common end. The common juncture or end and one other end have spaced pads which, when drawn up against a structure such as an I-beam, channel, or angle iron, provide a hanger support. The lower C-section has an inner arcuate portion between the pads used to support a loosely depending U-shaped hanger or threaded ring adapted to freely support a hanger for pipe, conduit, tubing, cables, etc.

3,445,082
BIPOD GUNMOUNT
Paul D. Proctor, 2860 Pennsylvania Ave., 25302, and John H. Frazer, 1613 Virginia St., E., 25311, both of Charleston, W. Va.
Filed Dec. 16, 1966, Ser. No. 602,261
Int. Cl. F16m *11/08, 11/04*
U.S. Cl. 248—186 3 Claims



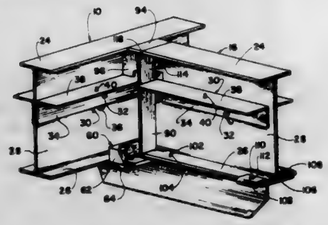
There is disclosed a small arms bipod gun mount which may be detachably connected to a small arms weapon, the bipod comprising a pair of legs, an elevation post disposed within a flange and having a plurality of slots along its length, spring pressure detent means on the flange to associate with the slots to position the post at the desired position, and swivel mounting head means at the top of the elevation post to connect the post to a gun stock.

3,445,083
FLOOR MAT
Louis Moss, 56 Deepdale Drive, Great Neck, N.Y. 11021
Filed Feb. 9, 1967, Ser. No. 614,908
Int. Cl. F16m *11/20*
U.S. Cl. 248—350 1 Claim



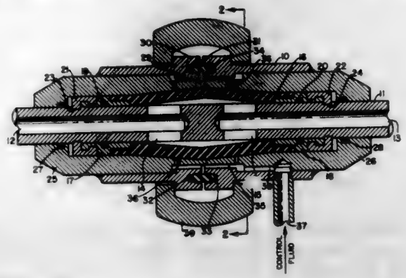
A floor protecting flat mat having a downwardly curved peripheral edge that extends at least partially below the bottom surface of the mat, for placement in heavy wear areas or under furniture.

3,445,084
STRINGER-SUPPORTING BRACKET FOR A CONCRETE FLOOR SLAB FORM STRUCTURE
Walter D. Williams, River Forest, Ill., assignor to Symons Mfg. Company, Des Plaines, Ill., a corporation of Delaware
Filed June 8, 1967, Ser. No. 644,532
Int. Cl. E04g *11/50, 11/48*
U.S. Cl. 249—192 6 Claims



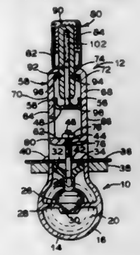
A supporting bracket designed specifically for use in a concrete floor slab form structure and connecting one end of a panel-supporting stringer to a medial side region of another panel-supporting stringer, the stringers being specifically of the type disclosed in United States Patent No. 3,052,008, dated Sept. 4, 1962 and entitled "Panel-Supporting Stringer Assembly for a Concrete Floor Slab."

3,445,085
FLUID ACTUATED CONTROL VALVE
John R. Eckel, Houston, Tex., and Alexander B. Hildebrandt, Tulsa, Okla., assignors to Esso Production Research Company, a corporation of Delaware
Filed July 13, 1967, Ser. No. 653,151
Int. Cl. F16k *7/07*
U.S. Cl. 251—5 4 Claims



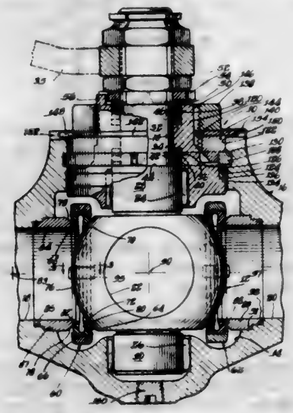
A fluid-actuated control valve for handling high-pressure fluids which includes an elongated tubular mandrel containing lateral ports upstream and downstream of an internal barrier, a hard resilient sleeve surrounding the mandrel about the ports, and a valve body with smooth inner contours which is affixed to the mandrel adjacent the ends of the sleeve and contains a port for the introduction of a control fluid into the annular space between the sleeve and body.

3,445,086
SNAP ACTING VALVE AND CONTROL MECHANISM THEREFOR
Frederic R. Quinn, Red Hook, N.Y., assignor to Zyrotron Industries, Inc., Red Hook, N.Y.
Filed Nov. 25, 1966, Ser. No. 596,954
Int. Cl. F16k *17/38, 31/00*
U.S. Cl. 251—11 2 Claims



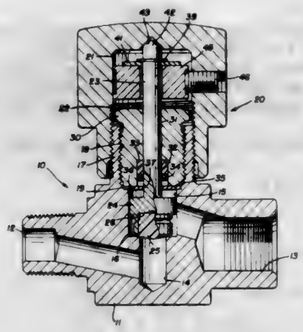
The combination of a valve and a control therefor wherein the valve includes a valve body and a valve member which seats in an orifice in a partition which separates the chambers. An actuating member is connected to and adapted to operate the valve member between valve open and valve closed positions. Connected to the actuating member is a first bracket which is operable to move the valve member by temperature responsive means. The temperature responsive means includes a piston in a cylinder movable to an extended position by heat-expansible element to move the bracket. Heating means including a ceramic resistor is provided to selectively raise the ambient temperature of the expansible element.

3,445,087
HIGH PRESSURE BALL VALVE
Werner K. Priese, Barrington, and David J. Davies, Naperville, Ill., assignors, by mesne assignments, to Hills-McCanna Company, Carpentersville, Ill., a corporation of Delaware
Filed Sept. 30, 1966, Ser. No. 583,306
Int. Cl. F16k *25/00, 5/20, 31/60*
U.S. Cl. 251—172 17 Claims



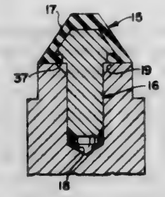
A high pressure ball valve with an integral operating stem and a pair of spaced annular seals between the stem and the valve body; and a floating annular valve seat between a flow passage seat support surface and the ball valve and including a pair of radially inwardly extending annular seals cooperating, respectively, with the ball valve and the seat surface under the intensity of fluid pressure within the space between the annular seals.

3,445,088
SAMPLE CYLINDER VALVE
Bernard J. Gallagher, Cleveland Heights, Earl D. Shufflebarger, Bedford, and Michael F. Gallagher, Cleveland Heights, Ohio, assignors to Whitey Research Tool Co., Emeryville, Calif., a corporation of California
Filed Jan. 19, 1967, Ser. No. 610,432
Int. Cl. F16k *31/528, 1/04*
U.S. Cl. 251—214 5 Claims



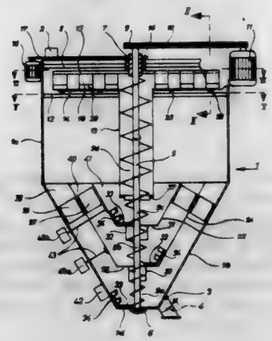
A valve having an externally threaded bonnet over which a handle is threaded with a stem extending upwardly of the bonnet into a chamber in the handle. The upper end of the stem is dome shaped and engages a conical recess in the end wall of the chamber in the handle with a bushing rotatably received over the end of the stem and a set screw connecting the handle to the bushing. The clearance between the outer diameter of the bushing and the inner diameter of the chamber is less than the clearance between the inner diameter of the bushing and the outer diameter of the stem to prevent cocking of the stem.

3,445,089
VALVE ELEMENT WITH MOLDED RESILIENT TIP
Myles N. Murray, Chagrin Falls, Ohio, assignor to Industrial Electronic Rubber Company, Twinsburg, Ohio, a corporation of Ohio
Filed Dec. 8, 1965, Ser. No. 521,233
Int. Cl. F16k *1/38, 1/46*
U.S. Cl. 251—358 4 Claims



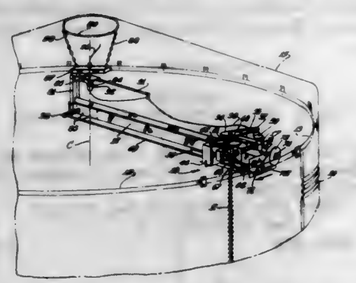
A valve element having an elongated body with an end socket and a metal pin with rubber molded about the head securely fitted in the body socket.

3,445,090
SCREW MIXER
Wilhelm Lodige, Elsener Str. 9c, Fritz Lodige, Leuschnerstr. 12, and Josef Lucke, Im Lohfeld 13, all of Paderborn, Germany
Filed Jan. 29, 1968, Ser. No. 701,222
Claims priority, application Germany, Feb. 4, 1967, L 55,663
Int. Cl. B01f *7/24, 15/02*
U.S. Cl. 259—2 17 Claims



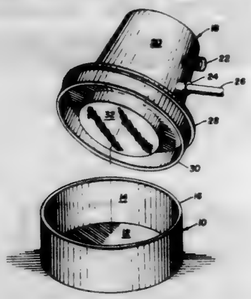
A mixer having a vertical vessel with a vertical rotatable worm therein and arms attached to the worm for mixing and feeding descending material to the worm so it can be transported upwardly and deposited onto a distributor whereat the material is also mixed and dropped into the vessel for repeated operation.

3,445,091
GRAIN CIRCULATOR
Dean R. Jackson, R.R. 1, Bradford, Ill. 61421
Filed Mar. 18, 1968, Ser. No. 713,962
Int. Cl. B01f 7/10, 7/00
U.S. Cl. 259—111 16 Claims



A grain circulator has a carriage which is reciprocally mounted on a track beam which has on one end roller means riding on a a horizontal rail running along the inside of the upper portion of a grain bin with the inner end portion of the beam flexibly suspended from the roof of the bin. A grain elevating auger rotatably carried by the carriage depends therefrom into the grain. An electric motor mounted on the carriage drives the auger rotatably, shuttles the carriage along the beam and motivates the roller means to advance the beam along the rail.

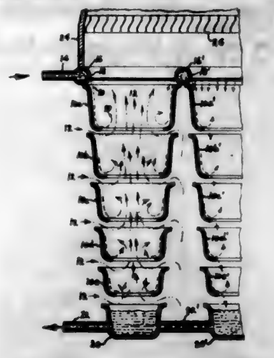
3,445,092
ULTRASONIC CLEANING DEVICE
Edward J. Fierle, Penfield, and William R. Melville, Jr., Scottsville, N.Y., assignors to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Feb. 28, 1968, Ser. No. 708,981
Int. Cl. B01f 5/26; B08b 3/04
U.S. Cl. 259—116 6 Claims



An ultrasonic cleaning device comprising a solution receptacle and an ultrasonic generator of the type wherein the transducer and ultrasonic generator are one unit detachable from and acting as a cover for the fluid receptacle. The device is further characterized by the fact that the transducer is immersed into the fluid contained in the fluid receptacle when the cleaning device is in operating position.

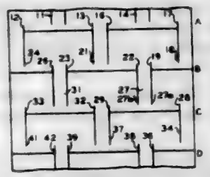
3,445,093
COOLING TOWERS
Josef Reder, Heidelberg, Germany, assignor of one-third to Bernard Olcott, New York, N.Y.
Filed Oct. 23, 1965, Ser. No. 503,498
Int. Cl. F28c 1/00
U.S. Cl. 261—24 21 Claims

A packingless cooling tower (a cooling tower without internal "packing" or "fill") in which the ambient air together with droplets of hot liquid to be cooled are moved in vertical whirling arcs in a plurality of horizontally disposed doughnut-shaped rings. Such vertical whirling arcs



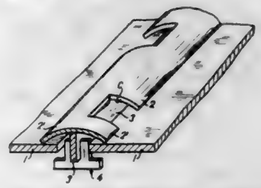
are formed at ambient air inlet passages which have an inwardly curved lip along the inside of which is moved a stream of the hot liquid.

3,445,094
DYNAMICALLY BALANCED MULTI-PATH LIQUID-GAS CONTACTING
Henry E. Shobe, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed June 8, 1964, Ser. No. 373,363
Int. Cl. B01d 3/22
U.S. Cl. 261—114 3 Claims



A gas and liquid contact column having a multiplicity of multi-path contacting trays with two zones of unequal areas. The trays have a plurality of downcomers dividing said trays into equal flow paths. Baffle means are provided with a plurality of separate flow openings spaced along the baffle means and proportional to the zones of unequal areas being fed by the respective downcomer.

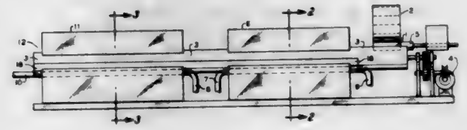
3,445,095
SLOTTED TRAY FOR FRACTIONATING COLUMN AND THE LIKE
Vlastimil Braun and Oto Vítek, Brno, Czechoslovakia, assignors to CHEPOS, Závody chemického a potravinářského strojírenství, oborový podnik, Brno, Czechoslovakia
Filed Oct. 11, 1967, Ser. No. 674,406
Int. Cl. B01d 3/22
U.S. Cl. 261—114 6 Claims



In a fractionating column or similar contact apparatus in which a rising vaporous and/or gaseous phase counter-

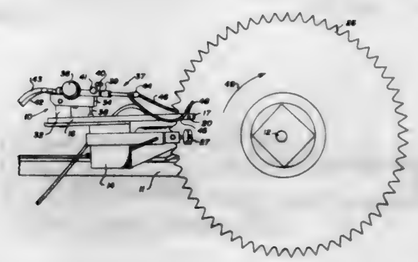
currently meets a descending liquid phase, there are slotted trays and caps for the slots in the trays. The slots are elongated, and each cap which is formed and serves as a floating valve is to cover either a single slot or two or more longitudinally aligned slots. Each of the caps is movable from and toward the area of the respective tray, surrounding the respective slot or slots, and is centrally provided with lengthwise extending continued rib means which depends from the underside of the cap downwardly toward the respective slot or slots. The rib means is spacedly provided with means to engage the underside of the tray, when the respective cap moves upwardly, and thus to limit the upward movement of the cap.

3,445,096
THERMOPLASTIC PARISON HEATING
Charles L. Seefluth, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed July 18, 1966, Ser. No. 565,871
Int. Cl. F27b 9/06, 9/40; F27d 11/00
U.S. Cl. 263—3 8 Claims



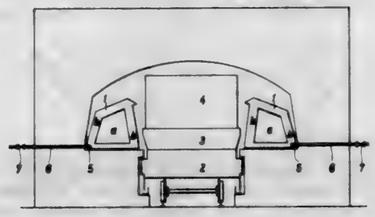
Tubular thermoplastic parisons are heated to a predetermined temperature for orientation by alternately passing the parisons between a heating zone and a constant temperature zone maintained at a temperature just below the melting point of the parisons wherein the heat is distributed evenly throughout the parison.

3,445,097
SAW HEAT TENSIONER
Reginald S. Quinn, Vancouver, British Columbia, Canada, assignor to Redna Manufacturing Agency, West Vancouver, Canada, a sole proprietorship in British Columbia, Canada
Filed Aug. 30, 1967, Ser. No. 664,443
Int. Cl. B23d 59/00, 61/02
U.S. Cl. 263—4 14 Claims



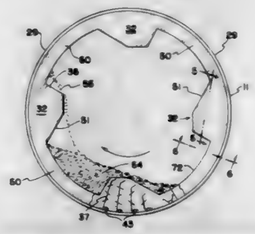
A continuous method of heat tensioning a circular saw, heat applied simultaneously to each side of an annular zone of the saw whilst the saw is rotating at a constant slow speed, continuing the rotation and heating until tensioning is attained as evidenced by distinctive color of the zone. Apparatus having generally peripheral saw rotating means, and an oxyacetylene torch with two tips, flame from one tip directed to one side of the zone and from the other tip to the other side of the zone.

3,445,098
METHOD AND DEVICE FOR IMPROVING THE TEMPERATURE EQUALIZATION OF GASES IN TUNNEL FURNACES AND OVENS
Hans U. Kaether, Dethmerstr. 34, Hildesheim, Germany
Filed Mar. 3, 1967, Ser. No. 620,416
Claims priority, application Germany, Nov. 30, 1966, H 61,150
Int. Cl. F27d 13/00; F28d 7/10
U.S. Cl. 263—28 10 Claims



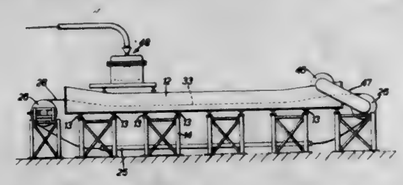
Uniformity of temperature in the preheating zone of an indirectly heated tunnel furnace or tunnel kiln or oven is obtained by forced circulation of furnace gases around the circulation ducts of the combustion chambers by introducing gas, preferably cold or preheated air, through jet-forming nozzles into the lower circulation duct.

3,445,099
ROTARY KILN LININGS
George Franklin Olsen, Colton, and Donald L. McLeod, Oakland, Calif., assignors to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
Filed Jan. 22, 1968, Ser. No. 699,556
Int. Cl. F27b 1/14; F27d 1/00
U.S. Cl. 263—33 11 Claims



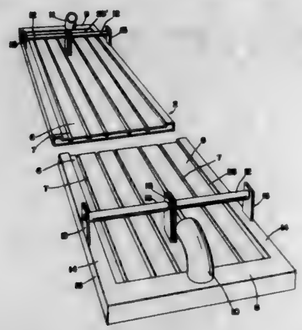
An improved rotary kiln lining comprising at least one monolithic refractory projecting or lifter element disposed generally longitudinally about the periphery of the interior or exposed face of the rotary kiln refractory lining, the projecting element being suitably contoured to lift or carry a portion of a load passing through the kiln upwardly along the periphery of the lining and to discharge it back to the load bed as rotation of the kiln progresses, the projecting element including an anchor or elongated tie means, suitably a plurality thereof, floatably or flexibly affixed to the kiln shell, whereby as stresses develop during operation of the kiln, the anchor device or tie means for such element becomes detached from its original rigid connection while being adapted to restrained or restricted motion to adjust to relative motion of the shell with respect to the refractory lining during operation.

3,445,100
FLUIDIZED BED APPARATUS FOR QUENCHING HOT ROD
Harry Laurence Fred Bond, Hathersage, near Sheffield, England, assignor to Davy and United Engineering Company Limited, Sheffield, England
Filed Nov. 16, 1965, Ser. No. 508,015
Claims priority, application Great Britain, Nov. 27, 1964, 48,268/64; May 6, 1965, 19,193/65
Int. Cl. C21d 9/56, 9/52
U.S. Cl. 266—3 5 Claims



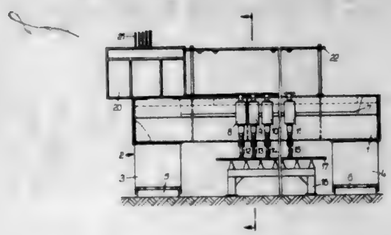
Apparatus for quenching hot rod received directly from a hot rod rolling mill comprising a fluidised bed vessel, a conveyor arranged to move through the vessel, a coiler arranged over one end of the vessel above the conveyor and so positioned that rod received by the coiler is fed directly onto the conveyor in overlapping looped form, and means for maintaining in the vessel a fluidised bed.

3,445,101
COOLING UNITS FOR FUME HOOD ON BASIC OXYGEN STEELMAKING FURNACE
June H. Reighart, Cleveland, Ohio, assignor to Howard M. Kohn, trustee
Filed Aug. 15, 1966, Ser. No. 572,403
Int. Cl. C21c 5/38
U.S. Cl. 266—16 4 Claims



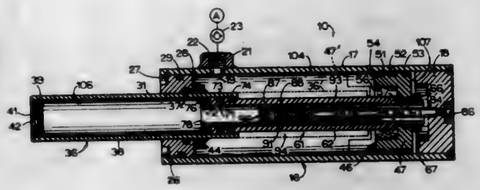
The apparatus disclosed herein comprises water-cooled panels and fume hoods assembled therefrom for conducting hot gases from a furnace. These fume hoods comprise a plurality of internally cooled panels, each panel consisting of two spaced apart parallel metallic plates bent at their edges to form a longitudinal passageway, at least one of the plates being depressed longitudinally at spaced intervals toward the opposing plate so as to provide a plurality of substantially parallel longitudinally extending passageways in each panel. In addition to such depressions giving strength to the panel, the aforementioned depressions prevent crossflow or angular flow through the panel and instead cause more uniform longitudinal flow in the interior of the panels. This avoidance of channeling in the flowing of cooling medium through the panel provides more uniform cooling of the panel and avoids overheating in any particular area around which or away from which the cooling medium might otherwise be directed. This more uniform cooling because of the subdivision of the panel into a plurality of longitudinal passageways effected by these longitudinal depressions avoids hot spots and failures in the panel caused thereby. Consequently the life of each panel is prolonged many times over the life of panels in which the flow of cooling medium is not so uniformly controlled.

3,445,102
CUTTING TORCH CARRIAGE MOUNT
Georg Roder, Frankfurt am Main-Fechenheim, Germany, assignor to Messer Griesheim G.m.b.H., Frankfurt am Main, Germany, a corporation of Germany
Filed Sept. 22, 1966, Ser. No. 581,259
Claims priority, application Germany, Sept. 24, 1965, M 66,760
Int. Cl. B23k 37/02
U.S. Cl. 266—23 5 Claims



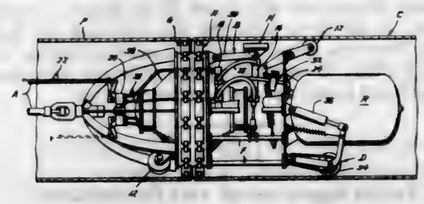
A cutting torch carriage has a ball bearing mount which comprises a support with an endless ball bearing race. The race has a straight section and its ends are connected by a curved section with ball bearings being therein. A cover substantially completely encloses the race and the support but exposes the external ball bearings along the straight race section. The bearing mount rests against a straight trackway by engagement of the exposed external ball bearing faces.

3,445,103
HYDRAULIC AND PNEUMATIC SHOCK ABSORBER AND SPRING DEVICE
Ransom J. Hennells, Plymouth, Mich., assignor to W. E. Hennells Company, Inc., Belleville, Mich., a corporation of Michigan
Filed Sept. 7, 1966, Ser. No. 577,651
Int. Cl. B60g 11/26; F16f 3/00, 5/00
U.S. Cl. 267—64 14 Claims



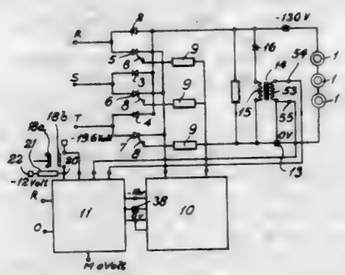
A distortable shock absorber having a housing containing a hollow plunger slideable therein, the housing and plunger defining first and second fluid chambers. Valve means positioned between the first and second fluid chambers provide for flow of fluid from one chamber to the other chamber at a restricted rate in response to the distortion of the shock absorber. The valve means further includes means responsive to the distortion of the shock absorber for reducing the opening of the valve and means responsive to a pressure drop from the other chamber to the one chamber for urging the valve open. The shock absorber also includes a third chamber containing means for urging fluid from said other chamber to said one chamber upon release of the distortion forces to return the shock absorber to its undistorted condition.

3,445,104
INTERNAL PIPE CLAMP
Edgar H. Douglas, Houston, Tex., assignor to CRC Crose International, Inc., Houston, Tex., a corporation of Oklahoma
Filed Nov. 29, 1966, Ser. No. 597,823
Int. Cl. B23q 3/14, 1/00
U.S. Cl. 269—48.1 4 Claims



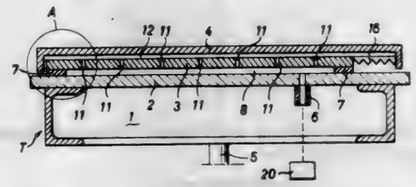
An internal pipe clamp adapted to hold abutting edges of pipes in alignment and including a frame with clamps and a brake mounted thereon, a pressure fluid tank mounted on the frame, control means between the clamps and the tank to actuate the clamps, control means between the brake and the tank to actuate the brake and a means of moving the frame through a pipe.

3,445,105
METHOD OF LIFTING OBJECTS OF MAGNETIZABLE MATERIAL AND A SYSTEM FOR CARRYING THE METHOD INTO EFFECT
Jorgen Marcher, Bagsvaerd, Denmark, assignor to H. Nielsen & Son, Maskinfabrik A/S, Copenhagen, Denmark
Filed May 9, 1967, Ser. No. 637,235
Claims priority, application Denmark, Aug. 4, 1966, 4,039
Int. Cl. B65h 3/16; H01h 47/00
U.S. Cl. 271—18 16 Claims



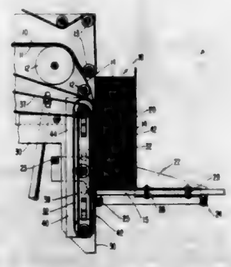
One or more lifting magnets for objects of magnetizable material, preferably a pile of iron sheets, and in which the current supply is cut off for a brief period in order to separate the uppermost sheet from a number of other, underlying sheets adhering to it. A voltage impulse induced in the winding of the lifting magnets by the fall of the sheet acting in conjunction with the remanence of the sheet and the lifting magnet is fed to an electronic control unit which again cuts in the current to the lifting magnet for permanently retaining the uppermost sheet.

3,445,106
APPARATUS FOR RECEIVING UPON AN ELEVATIONALLY DISPLACEABLE TABLE A STACK OF FLAT MATERIAL
Fernand Bays, Pully, Switzerland, assignor to Vidosa S.A., Lausanne, Switzerland, a corporation of Switzerland
Filed June 20, 1967, Ser. No. 647,500
Claims priority, application Switzerland, June 24, 1966, 9,153/66
Int. Cl. B65h 1/04, 1/16, 11/00
U.S. Cl. 271—61 7 Claims



An apparatus for receiving a stack of substantially flat material which is of the type comprising an elevationally displaceable table means which includes a table plate and a support member for said table plate. The table plate is advantageously displaceable within limits in a substantially horizontal plane with respect to the support member upon an air cushion which can be produced between the table plate and such support member.

3,445,107
SHEET HANDLING APPARATUS
Stanley T. Stoothoff, Glen Rock, N.J., assignor to Miehle-Goss-Dexter, Incorporated, Chicago, Ill., a corporation of Delaware
Filed July 13, 1967, Ser. No. 653,230
Int. Cl. B65h 31/04, 31/12, 29/68
U.S. Cl. 271—87 11 Claims



Apparatus for stacking sheets, signatures or the like on their edges including means to feed, stack and support the same, and oscillating means positioned at the input or trailing end of the stack to move the expanding stack intermittently against a resisting force supporting the forward or leading end of the stack.

3,445,108
GYMNASTIC CLIMBING POLES
Robert M. Fenner and Donald E. Hamilton, both of 3200 S. Zuni St., Englewood, Colo. 80110
Filed Oct. 6, 1966, Ser. No. 584,907
Int. Cl. A63b 9/00
U.S. Cl. 272—60 5 Claims

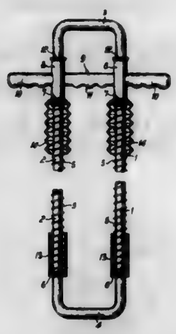
An elongated fibre-glass tube surrounding a tension cable which extends axially through said tube and projects

through caps on the extremities of said tube, the projecting extremities of said cable being looped against said



caps to prevent relative longitudinal movement between said tube and said cable.

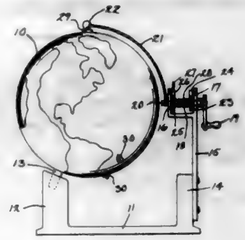
3,445,109
SPRING OPERATED PHYSICAL EXERCISER
Gert F. Kolbel, Kornstrasse 19–21, Hannover, Germany
Filed July 5, 1966, Ser. No. 562,903
Claims priority, application Germany, July 2, 1965, K 56,529
Int. Cl. A63b *21/02*
U.S. Cl. 272—83 4 Claims



A physical exerciser has a substantially rectangular frame with two parallel long side members and two short transverse members interconnecting adjacent ends of these side members. A spanning member is movably guided upon the side members and is engaged by springs the opposite ends of which are rigidly fixed to the side members. A user can hold the spanning member in one hand and one of the short portions in the other hand to carry out push and pull exercises.

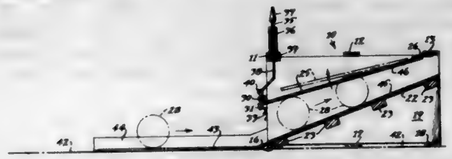
3,445,110
ORBITING SPACE VEHICLE GAME APPARATUS
Max Rigert, 2517 S. 77th St., West Allis, Wis. 53219
Filed June 26, 1967, Ser. No. 648,858
Int. Cl. A63f *9/00*
U.S. Cl. 273—1 10 Claims

A globe formed of, or coated with, a ferromagnetic material is held by a magnet to a base which also supports a rotatable shaft. In one embodiment, an arcuate spring wire arm is attached at one end to the shaft and a weighted, simulated space vehicle is mounted on the free end of the arm and is held against the globe by the arm. A torsion spring is wound and then released to rotate the shaft and have the space vehicle move from the globe by centrifugal force. The space vehicle returns to the surface of the globe when the energy stored in the torsion spring is exhausted. In another embodiment, an



inflexible arcuate arm mounts the space vehicle and normally holds it on the surface of the globe. A control member is shifted to pivot the arm and raise the space vehicle from the globe. Shifting the control member also closes a circuit to energize an electric motor that rotates the shaft and causes the space vehicle to orbit.

3,445,111
BOWLING BALL TRAP
Vernon Eugene Powell, 1344 Cardinal Drive, Nashville, Tenn. 37216
Filed Nov. 30, 1964, Ser. No. 415,225
Int. Cl. A63d *1/00, 5/02*
U.S. Cl. 273—37 5 Claims



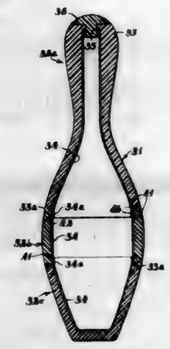
A bowling ball trap including a frame adapted to be supported upon a level surface, a lower panel fixed to the frame inclined from front end to rear end, an upper panel having its rear end hinged to the frame above the lower panel a distance less than the diameter of the bowling ball to be trapped so that the upper panel is free to swing about its rear end, and stop means for limiting the lower swinging movement to permit the entry of the bowling ball between the panels.

3,445,112
BILLIARD CUE SHAPED GOLF PUTTER
Clarence L. Fritz, 1527 Elizabeth St., Bay City, Mich. 48706
Filed Oct. 6, 1965, Ser. No. 493,483
Int. Cl. A63b *53/00*
U.S. Cl. 273—77 1 Claim



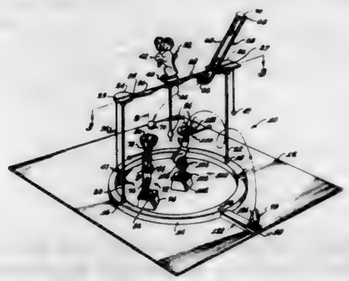
A golf club used as a putter and shaped similar to a standard billiard cue. The striking face of the club has concentric ribs to minimize slippage. The cylindrical club head is inwardly tapered from the striking face and is joined to an outwardly tapered club shaft.

3,445,113
SECTIONAL BOWLING PIN WITH METAL LINER AND OUTER PLASTIC SHELL
Fred E. Satchell, Grand Haven, and Robert M. Conklin and John J. Weisz, Muskegon, Mich., assignors to Brunswick Corporation, a corporation of Delaware
Filed Apr. 21, 1964, Ser. No. 361,526
Int. Cl. A63b *67/00*
U.S. Cl. 273—82 10 Claims



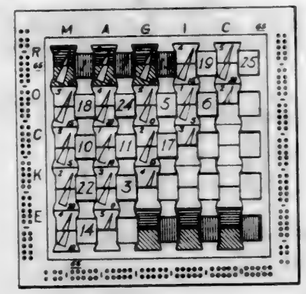
A rigid hollow plastic bowling pin formed of sections. Each section has a thick solid outer plastic shell and a thin lightweight metal liner. Each section is formed by injection molding a plastic over a liner which is fitted over a mandrel. The pin sections are joined end to end with the outer plastic shell sections being welded together to form the hollow bowling pin.

3,445,114
CIRCUS GAME CONSTRUCTION
Helene E. Fernandez, Canoga Park, Calif., assignor to Mattel, Inc.
Filed Feb. 28, 1966, Ser. No. 530,682
Int. Cl. A63b *71/04, 65/12*
U.S. Cl. 273—101 4 Claims



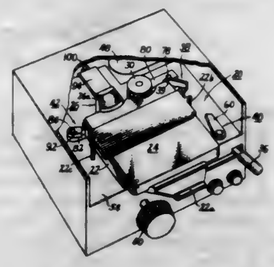
A circus game construction incorporating a tightrope game, a cannonball game and an acrobatic or catapult game. The tightrope game includes a wire with a series of bends along its length extending between a pair of spaced vertical supports and a platform movable along the bent wire for carrying a tightrope-walking object. The cannonball game includes a slide adapted to be carried by one of the vertical supports and a catcher means carrying a basket adapted to catch a ball rolled down the slide. The acrobatic or catapult game includes a spring catapult for launching an acrobatic object onto a platform which replaces the basket atop the catcher means. The tightrope game consists of two spaced stands supporting a rigid member having a plurality of bends. A tightrope walker is moved along the rope by pulling either end of a string attached to it. Also attached to one of the stands is a sloping trough and movably positioned on the base of the game is a target in the shape of a bear having a cup shaped member balanced on its head. The catapult game comprises a spring catapult with an object in the shape of a monkey placed thereon. The monkey has a magnetic base. Also included is another animal figurine having a rotatable metallic platform balanced on its head.

3,445,115
MAGIC SQUARE BOARD GAME APPARATUS
William Harold Hunter, 3453 Penick St., Shreveport, La. 71109
Filed Aug. 9, 1965, Ser. No. 478,186
Int. Cl. A63f *3/00*
U.S. Cl. 273—135 7 Claims



A game apparatus including a game board defining a plurality of master spaces arranged in the form of a square and two auxiliary spaces adjacent each master space, a master playing piece for each master space, an auxiliary playing piece for each auxiliary space, said playing pieces all being numbered, and playing cards, one for each auxiliary playing piece, which cards designate the positions of the auxiliary playing pieces on the board, said cards designating positions such that the master playing pieces form a magic square when each of said pieces is positioned so that its number equals the sum of the numbers on the two adjacent auxiliary playing pieces.

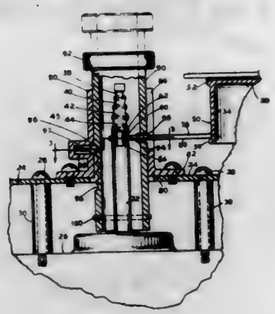
3,445,116
TAPE RECORDER/REPRODUCER
Austin A. Knox, Stamford, Conn., assignor to Medical Data Services Inc., Darien, Conn.
Filed June 6, 1966, Ser. No. 555,468
Int. Cl. G11b *5/86*
U.S. Cl. 274—4 7 Claims



Magnetic recording tape transport and transducing assembly having a pivoting cartridge tray for positioning a tape loop adjacent the transducer and between the capstan and pinch roller. The cartridge tray has an interlock for holding the tray in positive engagement for operation or removal of the tape cartridge. An interlock also prevents

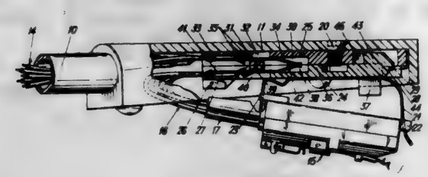
tray movement until the cartridge is fully inserted therein. Cam mechanism is provided to change the relative positions of the tape guide and transducer for multi-track recording tape.

3,445,117
PHONOGRAPH DRIVE
Henry V. Zakrzewski, 114 Hillcrest Road, Frankfort, N.Y. 13340
Filed Aug. 7, 1967, Ser. No. 658,765
Int. Cl. G11b *17/00*
U.S. Cl. 274—9 5 Claims



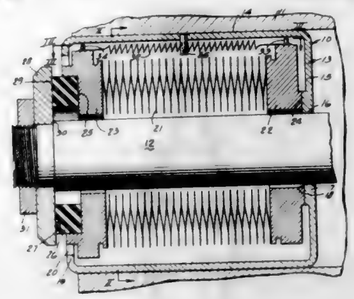
Direct drive for phonograph employing a circular sectioned O-ring belt of limited elasticity between a series of graduated diameter grooves on a motor shaft and a broad cylindrical skirt on the turntable acting as a driven pulley, and means to manually shift the belt between the grooves for drive speed variation.

3,445,118
CARTRIDGE HOLDER FOR THE PICK-UP ARM OF A RECORD PLAYER
Norman Lane, Halesowen, England, assignor to BSR Limited, Cradley Heath, Warley, England, a British company
Filed Feb. 23, 1968, Ser. No. 707,547
Claims priority, application Great Britain, Mar. 31, 1967, 14,808/67
Int. Cl. G11b *3/10*
U.S. Cl. 274—24 5 Claims



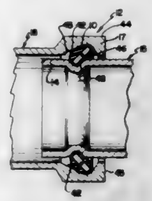
A two-part holder for detachably mounting a cartridge on the pick-up arm of a record player, the two parts being each of generally planar form and detachably connected together in face to face relationship and each part having on its face which is opposed to the other part a set of electrical terminal pieces, so that when the two parts are connected together in face to face relationship the two sets of terminal pieces make electrical contact. One part of the holder is adapted to be fixed to the end of the pick-up arm and the terminal pieces thereof are electrically connected to the leads passing along the pick-up arm whilst the other part of the holder has a cradle in which the cartridge is detachably mounted and the terminal pieces of this part of the holder are electrically connected to the output terminals of the cartridge.

3,445,119
SELF-COMPENSATING SEAL
Raymond H. Andresen, Barrington, Ill., and Larry K. Hanson, Maywood, N.J., assignors, by mesne assignments, to Gits Bros. Mfg. Co., a corporation of Delaware
Filed Oct. 28, 1966, Ser. No. 590,314
Int. Cl. F16j *15/40, 15/00;* F16k *41/00*
U.S. Cl. 277—3 4 Claims



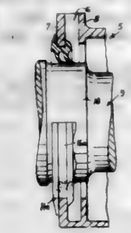
A bellows type rotary shaft face seal having coil springs extending between the bellows backing ring and the carrier ring radially outwardly from the bellows and adapted to engage a stationary projection when the bellows is subject to rotation, the engagement acting to increase the tension of the spring to draw the carrier ring away from a rotating shaft face thereby relieving the pressure at the seal interface in response to rotational pressure imparted to the carrier ring.

3,445,120
WEDGE SEALING GASKET AND JOINT
Vernon L. Barr, 3382 W. 8th Ave., Vancouver, British Columbia, Canada
Filed Aug. 20, 1964, Ser. No. 390,982
Int. Cl. F16j *15/02;* F16l *21/02*
U.S. Cl. 277—164 12 Claims



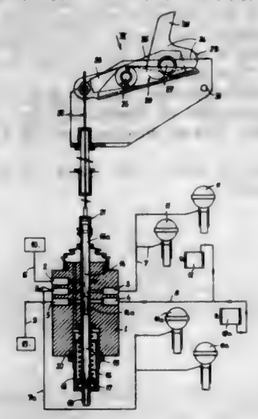
11. Wedge sealing apparatus for a pipe joint comprising a spigot within and diametrically spaced from a bell end, said spigot and said bell end having opposed shoulders within the space therebetween, a wedge sealing gasket in the space between the spigot and the bell end fitting between and engaging said opposed shoulders; said gasket comprising a resilient annular band fitting tightly around the spigot, and stiffening means secured to the band throughout the length thereof and extending in cross section transversely of the band to inner and outer side edges and generally at a wedge angle relative to said opposing surfaces, said stiffening means being rigid in said transverse direction between the opposing surfaces and allowing the band to expand and contract in a radial direction, said outer edge being able to expand and contract relative to the inner edge, and said band at said outer edge of the stiffening means tending to expand when said spigot and bell end move longitudinally away from each other to cause the band to wedge therebetween and resist such movement.

3,445,121
REAR SEALS FOR JOURNAL BOXES
Robert L. Lineker, 116B Main Road, Hudson, Quebec, Canada
Continuation-in-part of application Ser. No. 409,813, Nov. 9, 1964. This application Feb. 9, 1967, Ser. No. 629,839
Int. Cl. F16j *15/50, 15/54;* B61f *15/22*
U.S. Cl. 277—178 9 Claims



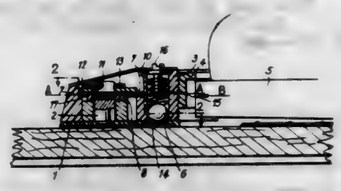
A railroad car journal box having a rear wall with an opening through which the journal and adjacent dust guard seat portion of the car axle extends into the box. A labyrinth type seal of elastomeric material is mounted in the rear wall opening and is provided with a set of annular sealing ribs which project radially inwardly into a wiping seal contact with the dust guard seat portion of the axle. The sealing ribs define therebetween at least one annular dust pocket and are inwardly tapered in cross-section for optimum flexibility and sealing effect. In a modified embodiment, the sealing ribs are circumferentially undulated in the axial direction to obtain a circumferentially longer wiping contact in comparison to ribs which are circumferentially straight.

3,445,122
DEVICE FOR THE VERTICAL ADJUSTMENT OF THE BODIES OF AUTOMOTIVE OR OTHER VEHICLES
Jean Georges Cadiou, Paris, France, assignor to Societe Anonyme Andre Citroen, Paris, France, a corporation of France
Filed Feb. 13, 1967, Ser. No. 615,632
Claims priority, application France, Feb. 18, 1966, 50,267
Int. Cl. B60g *17/00, 21/06;* B62d *37/00*
U.S. Cl. 280—6 4 Claims



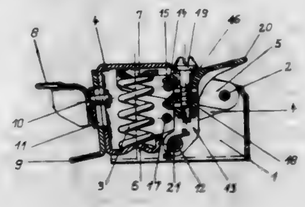
Device for an automotive or other vehicle having a suspension system equipped with vertical correctors and supplied with fluid under pressure through a distributor, which comprises a lever actuated by a cam, both mounted pivotally on pins secured to the body of the vehicle. The lever controls by means of a mechanical connecting member the sliding member of an adjustment valve which is adapted to connect in one position the return port of the vertical correctors to a fluid reservoir, and in two other positions to connect the suspension system directly to the pressure-fluid distributor or to connect the return ports of said system and said correctors to said fluid reservoir.

3,445,123
FRONT SAFETY THRUST-BLOCK FOR SKI BINDING
Henri Rouge, Les Replans, and René Bonhôte, Sainte-Croix, Switzerland, assignors to Rouge Societe Anonyme, Sainte-Croix, Vaud, Switzerland, a Swiss company
Filed Apr. 17, 1967, Ser. No. 631,251
Claims priority, application Switzerland, Apr. 18, 1966, 5,611/66
Int. Cl. A63c *9/085*
U.S. Cl. 280—11.35 8 Claims



A front safety thrust-block for ski binding having a base plate carrying a pivot, a jaw support for the front part of the sole of the shoe which support may move relative to the pivot and a ball latch elastically holding the support on the base plate. The front safety thrust-block comprises two inserted pieces of a harder material than that of the support, one of these pieces presenting a nose and being disposed in a correspondingly shaped housing of the support, in a plane parallel to the base plate and passing at about half the height of the said support, and the other piece being mounted in a recess of the pivot so as to engage the nose of the first piece when the block is in a supporting position against the front part of the sole of the shoe.

3,445,124
HEEL-HOLDING DEVICE FOR SAFETY SKI BINDINGS
Egon Heckl, Garmisch-Partenkirchen, Germany, assignor to Hannes Marker
Filed Aug. 31, 1967, Ser. No. 664,712
Claims priority, application Germany, Sept. 14, 1966, M 70,917
Int. Cl. A63c *9/00*
U.S. Cl. 280—11.35 11 Claims



A carrying member for a soleholder and a closing pedal is pivoted on an axis disposed behind the heel and is under the influence of a spring element. The heel-holding device automatically assumes a locking position in re-

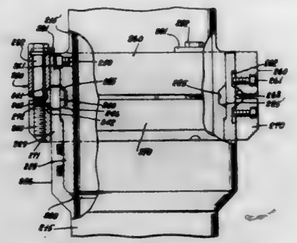
sponse to the insertion of a skiing boot into the binding and can be arbitrarily opened, e.g., by the application of slight pressure with a ski stick to a release member, and can be automatically released in response to an excessive upward tensile force, which is approximately vertical. The carrying member consists of two jaw arms, which are pivotally movable relative to each other against the force of the spring element. One of said jaw arms carries the soleholder and/or the closing pedal. A locking lever is pivoted on a pivot that is parallel to the pivot of the carrying member. The locking lever is pivotally movable to its release position under the influence of that arm of the carrying member which carries the soleholder and against the force of the retaining spring. The locking lever has a locking nose, which cooperates with the other arm of the carrying member.

3,445,125
TRAILER HITCH
John O. Stewart, Rte. 1, Russellville, Ark. 72801
Filed Aug. 25, 1967, Ser. No. 663,318
Int. Cl. B60s *9/04;* **B62d** *53/00*
U.S. Cl. 280—406 **10 Claims**



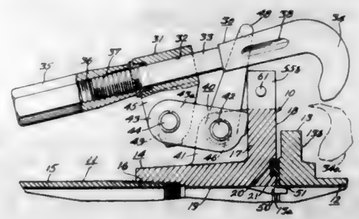
An automobile-attached drawbar having a housing containing a ball. A trailer draft tongue has a socket receivable in the housing above the ball, and also has a vertical jack resting on a ground supported block. When the automobile is backed up, the socket is received in the housing and the housing pushes back the socket so that the jack slips off the ground block to automatically engage the socket with the ball. A stabilizer bar is supportably inserted in the housing and coacts with the jack to equalize the load and prevent sagging at the ball and socket.

3,445,126
MARINE CONDUCTOR COUPLING
Bruce J. Watkins, Palos Verdes Estates, Calif., assignor to Regan Forge & Engineering Co., San Pedro, Calif., a corporation of California
Original application May 10, 1965, Ser. No. 458,813. Divided and this application May 19, 1966, Ser. No. 554,632
Int. Cl. F16l *55/00*
U.S. Cl. 285—85 **3 Claims**



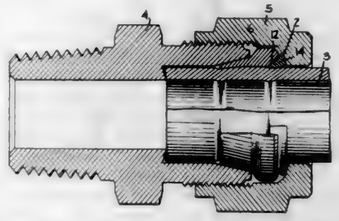
A marine conductor coupling for releasably tightly connecting conductors or conduits such as may be used in oil well drilling. The coupling provides a tight continuous wedging between a gib and socket means which are connected to the adjacent ends of the pipes or conductors to be joined. The pipes are constantly axially wedged toward one another through opposed force transmitting wedging dogs and latching dogs.

3,445,127
UNIVERSAL FLANGE CONNECTOR
John L. Clarke, Annapolis, Md., assignor to Hydrasearch Co., Inc., Annapolis, Md., a corporation of Maryland
Filed May 26, 1967, Ser. No. 641,586
Int. Cl. F16l *23/00, 37/18*
U.S. Cl. 285—88 **10 Claims**



A universal flange coupling permitting connection of adjacent or contiguous conduits having varying or the same diameter and/or thickness flanges even though the conduits have the same internal diameter. The coupling includes a nipple having circumferentially spaced clamps therearound which are pivotally mounted and movable both radially towards and away from the axis of the nipple and axially to engage or disengage varying diameter and thickness flanges which are to be mated with the flange of the nipple. In one embodiment an overcenter cam operated lock is provided for firmly engaging in sealing relation the faces of the mating flanges, while in another embodiment hydraulic pressure is utilized in order to cause and maintain the mating pressure. The disclosure also shows means for aligning and centering automatically one flange against the other.

3,445,128
TUBE COUPLING HAVING DUAL FERRULE GRIPPING ELEMENTS WITH STOP MEANS
Wilbur O. Teeters, Norwood, N.J., assignor to Hoke Manufacturing Company, Inc., Cresskill, N.J., a corporation of New Jersey
Division of application Ser. No. 486,635, Sept. 13, 1965. Continuation-in-part of application Ser. No. 188,023, Apr. 17, 1962. This application Apr. 10, 1967, Ser. No. 647,263
Int. Cl. F16j *19/00, 3/04, 19/08*
U.S. Cl. 285—341 **4 Claims**



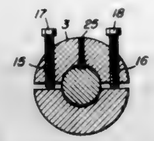
A compression coupling for attaching an unthreaded end of a hollow tube to a fitting using a pair of ring-like ferrules and a compression nut. The fitting has a conical bore adjacent a tube seat and the first or front ferrule and the second or rear ferrule coact with the conical bore and with each other to couple the tube to the fitting and to form a fluid tight seal between the tube and the fitting. The rear ferrule is shaped to move against a stop on the front ferrule to limit its depths of penetration into the tube and preferably the outer surfaces of the rear ferrule are work-hardened.

3,445,129
SUPPORT FOR TRENCH GUARD RAIL
Vincent S. Penote, Shaker Heights, Ohio, assignor to The Cleveland Trencher Company, Cleveland, Ohio, a corporation of Ohio
Filed Dec. 12, 1966, Ser. No. 601,189
Int. Cl. F16b *7/00;* **F16d** *3/08, 1/00;* **E04c** *3/00*
U.S. Cl. 287—51 **3 Claims**



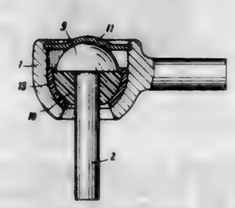
The invention comprises a portable device for supporting each end of a trench guard rail so as to eliminate the need of any fastening means for the supporting legs and for completing the rail assembly, thus enabling the unit to be quickly assembled for use and disasembled for storage purposes. The invention also contemplates the provision of a rail supporting device which is so constructed that one device may be superimposed upon another and swivelly connected thereto, so as to enable adjacent rails to be positioned in different horizontal directions in conformance with the shape of the trench or other opening to be guarded.

3,445,130
SPLIT MACHINERY HUB
David Noel Obenshain, Luke, Md., assignor to West Virginia Pulp and Paper Company, New York, N.Y., a corporation of Delaware
Filed Aug. 23, 1966, Ser. No. 574,417
Int. Cl. F16d *1/06*
U.S. Cl. 287—52.03 **1 Claim**



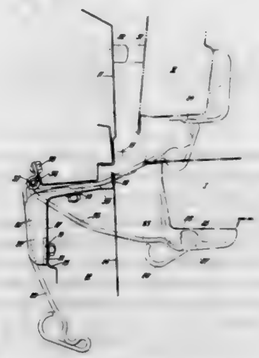
A machine element hub design is presented which employs a zero clearance bore and a split hub portion including pairs of holes whereby jack screws may be inserted in one set of holes to spread the split hub preparatory to placing the hub on an accommodating shaft, and clamping screws may be inserted in the other set of holes to clamp the hub on the shaft after removing the jack screws.

3,445,131
BALL JOINTS, IN PARTICULAR FOR GUIDES AND STEERING GEAR, PREFERABLY OF MOTOR VEHICLES
Rudolf Gottschald, Osterath am Meerbusch, Germany, assignor to A. Ehrenreich & Cie, Dusseldorf-Oberkassel, Germany
Filed Oct. 18, 1966, Ser. No. 587,548
Claims priority, application Germany, Oct. 30, 1965, E 30,394
Int. Cl. F16c *11/06;* **B25g** *3/38*
U.S. Cl. 287—90 **2 Claims**



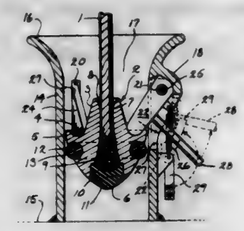
A ball and socket joint having a substantially spherical bottom portion surrounding the joint pin and a liner between the housing and the bottom portion, both members being formed of artificial coal.

3,445,132
DOOR CHECK ASSEMBLIES
Dennis Clarke, Romford, and Tony J. Fowler, Hockley, England, assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Oct. 21, 1966, Ser. No. 588,503
Claims priority, application Great Britain, Mar. 5, 1966, 9,752/66
Int. Cl. E05c *17/44;* **E05d** *11/10*
U.S. Cl. 292—338 **6 Claims**



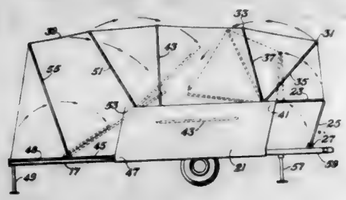
A door check assembly in which a single check arm is effective to hold the arm in either of two door open positions. In the first door open position the end of the check arm is spring biased between two abutments to hold the door in this position. In the second door open position, the arm is biased against a further abutment to hold the door in the second opened position. The construction and arrangement permits a cargo door on a van body to be opened approximately 180° if desired. At the same time the conventional 90° door check function is retained.

3,445,133
HOIST LINE HOOK
Karl E. Reichl, South Milwaukee, Wis., assignor to Bucyrus-Erie Company, South Milwaukee, Wis., a corporation of Delaware
Filed Apr. 10, 1967, Ser. No. 629,612
Int. Cl. B66c 1/36; F16b 7/22
U.S. Cl. 294—83 8 Claims



Two embodiments of a hook and socket assembly are shown and in both the hook has a circular cross section with the hoist line attaching in the center and a pointed nose. In both embodiments the socket is a steel tube. In the first embodiment, spring-biased, pivotable latch bars are mounted in the socket to latch the hook. In the second embodiment, spring-biased pivotable latch bars are mounted on the hook to engage a groove in the socket.

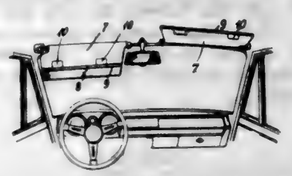
3,445,134
COLLAPSIBLE CAMPER
Sidney P. Pair, 1511 Oliver; and Jerry W. Pair, 1307 Oliver, both of Weatherford, Tex. 76086; and R. W. Beck, Jr., 2123 NW. 23rd St., Fort Worth, Tex. 76106
Filed Feb. 15, 1967, Ser. No. 616,352
Int. Cl. B60p 3/34; A45f 1/00; E04b 1/347
U.S. Cl. 296—23 11 Claims



Disclosed herein is a camper of the collapsible type having rigid side panels and foldable end and top panels. Pivotally connected top and rear panels fold backward to form floor extensions supported on a reciprocable frame extension member that moves between a retracted hidden position and an exposed extended position. Also, one top panel folds forward to extend the camper in that direction. Tubular support members are pivotally secured to selected ones of the panels, and a pliable covering is secured to these members to automatically expand with the top and end panels.

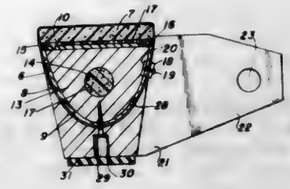
3,445,135
PERFORATED SUN VISOR PARTICULARLY FOR MOTOR VEHICLES
Lamberto Masi, Via Cucchiari 3, Milan, Italy
Filed Nov. 4, 1966, Ser. No. 592,214
Claims priority, application Italy, Nov. 29, 1965, 11,695/65, 11,697/65; Jan. 24, 1966, 13,741/66; Sept. 16, 1966, 22,504/66
Int. Cl. B60j 3/00
U.S. Cl. 296—97 3 Claims

A filter sun visor for motor-vehicles, comprising an opaque surface, passed through by a plurality of small through holes in a quincunx pattern, said holes being of a



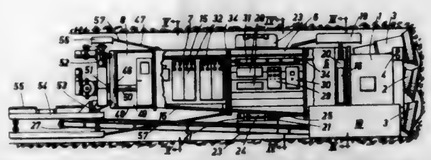
diameter from 0.5 to 1.5 mm. and the mutual distance between the centres being from 1.5 to 4 mm.

3,445,136
KNEELERS
Paul Hallstedt, Booneville, Miss., assignor to American Seating Company, Grand Rapids, Mich., a corporation of New Jersey
Filed July 27, 1967, Ser. No. 656,413
Int. Cl. A47c 9/14, 9/00; B29h 7/20
U.S. Cl. 297—426 11 Claims



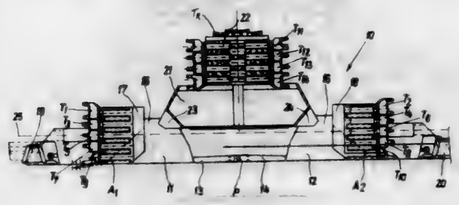
A kneeler, and method of making the same, wherein the kneeler embodies an elongated body member and supports therefor, with the body member embodying an elongated pad mounted on top of a substantially hollow shell filled with a lightweight material which acts as reinforcing for the shell and also adhesively secures parts of the body member together.

3,445,137
SECTIONAL TUNNEL BORING MACHINE
Ernst Lauber, Thun, Switzerland, assignor to Maschinenfabrik Habegger AG., Thun, Switzerland
Filed Mar. 10, 1967, Ser. No. 622,155
Claims priority, application Germany, Mar. 25, 1966, M 68,904
Int. Cl. E21c 29/00, 27/20; E21d 9/00
U.S. Cl. 299—31 6 Claims



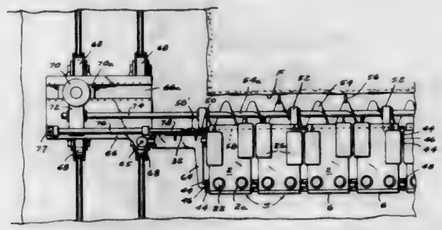
The machine body is composed of a plurality of flange-connected tubular sections. The tools are carried by a drum, which is rotatably connected to the axially outer end of the leading tubular section by a thrust and radial anti-friction bearing conforming to the diameter of the drum.

3,445,138
MINING PLANER
Armin Löbbe, Oberaden, and Michael Wengrzik, Niederaden, Germany, assignors to Gewerkschaft Eisenhutte Westfalia, Westphalia, Lunen, Germany
Filed Sept. 5, 1967, Ser. No. 667,045
Int. Cl. E21c 27/32, 13/00
U.S. Cl. 299—34 13 Claims

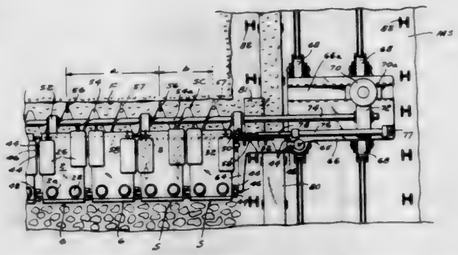


Mining machine, e.g., planer, having cutting means for longitudinal travel back and forth along a mine face for extracting or winning mineral, e.g., coal, therefrom in both longitudinal directions, in which the cutting means include a separate bank of at least two individual replaceable vertically stacked piston-cylinder means in corresponding static parallel flow communication for each cutting direction, in which either the cylinder part or piston part is fixed against movement and the other such part is displaceable longitudinally and has a cutting tool extending in the corresponding cutting direction, such that displacement of one of the displaceable parts and the corresponding tool thereof in a given bank in one operative direction causes corresponding proportionate displacement of the remaining displaceable parts in the same bank in the opposite operative direction, and in which guide means are provided which engage operatively each displaceable part to permit longitudinal displacement thereof with respect to the corresponding fixed part while preventing rotational displacement therebetween and in turn preventing rotation of the corresponding tool about the longitudinal axis of the particular piston-cylinder means.

3,445,139
LONGWALL MINING MACHINE WITH CUTTING ELEMENTS ON ROTATED AND RECIPROCATED SCREW CONVEYOR
Hans Joachim von Hippel, Muehlenkamp 12, Lunen, Germany
Filed June 26, 1967, Ser. No. 648,631
Claims priority, application Germany, Mar. 3, 1967, H 62,019
Int. Cl. E21c 35/20, 13/00; B65g 65/22
U.S. Cl. 299—43 17 Claims

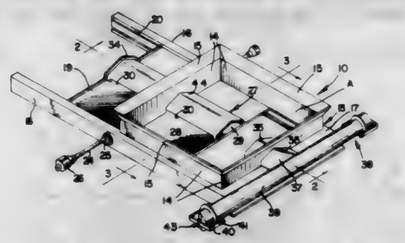


A mining apparatus, especially for coal mining, having a screw conveyor adapted to be arranged substantially parallel to the face of a coal seam and provided with at least one cutting tool projecting beyond the periphery of the screw conveyor, in which the screw conveyor is rotated about its axis and reciprocated in axial direction



while the mining apparatus is slowly advanced against the face of the coal seam.

3,445,140
COMBINATION PNEUMATIC AND GRAVITY DISCHARGE GATE FOR HOPPERS
Ernest John Nagy, Munster, Ind., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed Oct. 5, 1967, Ser. No. 673,194
Int. Cl. B65g 53/40, 53/58
U.S. Cl. 302—52 18 Claims

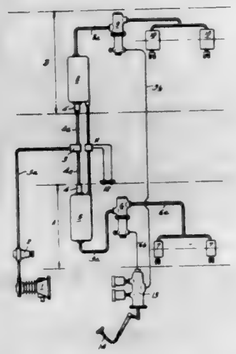


A combination pneumatic and gravity discharge gate for hoppers including a frame which has supported thereon a four-walled framework connected to the discharge end of a hopper to provide a discharge chamber. A gate is slidably supported on the frame to close the discharge chamber with the gate having positioned thereon a pneumatic hood which in the closed position is connected to an air and material exhaust conduit for withdrawing and discharging material from the chamber. The hood and gate are movable to an open position wherein the hood is completely displaced outwardly of the discharge chamber and material from the hopper may be discharged through the chamber by gravity.

3,445,141
BRAKING ARRANGEMENT
Jean Mognet, Manuel S. Torello, and Carlos C. Rius, Barcelona, Spain, assignors to Empresa Nacional de Autocamiones, S.A., Madrid, Spain
Filed Feb. 6, 1967, Ser. No. 614,060
Claims priority, application Spain, Feb. 19, 1966, 323,316
Int. Cl. B60t 13/00, 13/74, 17/02
U.S. Cl. 303—6 4 Claims

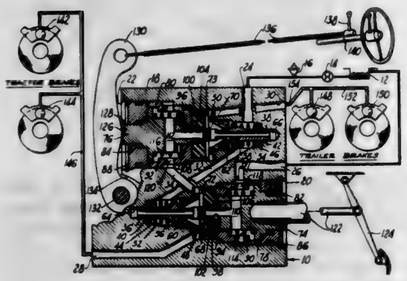
A braking arrangement in which a source of pneumatic fluid is connected with pneumatically operated brake cylinders and in which a hydraulic control circuit is pro-

vided which includes a normally closed valve arranged in the conduit and also actuating means which, when op-



erated, opens the valve so that the pneumatic fluid can pass from the source to the brake cylinders.

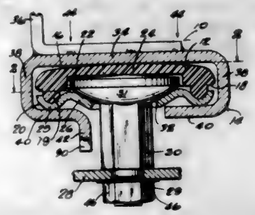
3,445,142
CONTROL VALVE
Harold B. Schultz, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware
Continuation of application Ser. No. 622,880, Mar. 8, 1967. This application Aug. 8, 1968, Ser. No. 753,843
Int. Cl. B60t *13/00, 13/16*
U.S. Cl. 303—53 **9 Claims**



A fluid pressure control device having two valves in a housing with means whereby operation of one valve overrides the control of the other. Thus, the pressure built up by operation of one of the valves will cause operation of the other valve. The other valve may be also operated independent of the operation of the first valve.

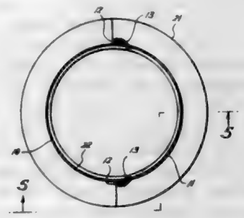
3,445,143
ADJUSTABLE SLIDE SUPPORT
Richard F. Swenson, Milwaukee, Wis., assignor to Swenson Corporation, Redgranite, Wis., a corporation of Wisconsin
Filed May 22, 1967, Ser. No. 640,066
Int. Cl. F16c *5/00, 17/00, 21/00*
U.S. Cl. 308—3 **9 Claims**

The present invention relates generally to improvements in suspension devices, and relates more particularly to an improved adjustable slide support adapted for incorporation in assemblages requiring the relative movement and positioning of elements, including load bearing elements, with respect to each other. The improved suspension includes a resilient disk or puck suitable for mounting on



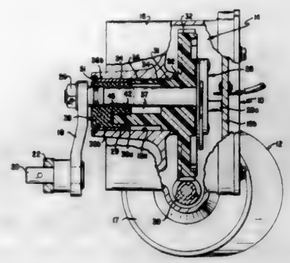
one element, the puck being slidably confined within a track on which is mounted the other element.

3,445,144
PIPE PROTECTOR
James H. McBrien, Houston, Tex., assignor to Helmrich & Payne, Inc., Tulsa, Okla., a corporation of Delaware
Filed Mar. 20, 1967, Ser. No. 624,560
Int. Cl. F16c *1/26, 17/00, 21/00*
U.S. Cl. 308—4 **3 Claims**



A split collar-type pipe protector having a pair of bias-cut sleeves enclosed by resilient bodies having similar cuts, forming two truncated hemi-cylinders, such partial cylinders capable of being mated about a pipe by sliding engagement of male and female extensions provided respective of said sleeves.

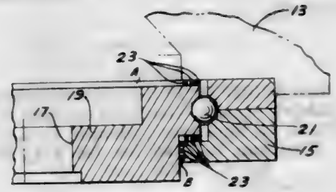
3,445,145
TWO-PIECE JOURNAL BEARING
Michael W. Carroll, Kalamazoo, Mich., and Donald S. Perry, Fayetteville, N.Y., assignors to Eltra Corporation, Toledo, Ohio
Filed Nov. 22, 1967, Ser. No. 685,161
Int. Cl. F16c *35/02;* **F16h** *21/18;* **B60s** *1/06*
U.S. Cl. 308—15 **7 Claims**



A molded plastic worm gear for transmitting rotary motion in a drive mechanism, the gear having an integral hub portion projecting laterally from one of its sides and having an end configuration so formed as to facilitate manual assembly with a second metal hub member and

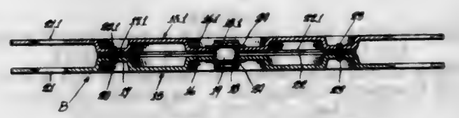
provide a rotatable driving relation therewith. The assembled members provide a journal for the worm gear. Eccentric bores are formed through both hub members and so located as to be in alignment when the members are in assembled relation to provide an eccentric bearing for a rotatable crank shaft which interlocks with the hub members to transmit motion from the worm gear to a driven member at variable crank lengths.

3,445,146
DEFLECTION LIMITED BEARING
Max H. Alexander and Bernard J. Merritt, Bloomfield Hills, Mich., assignors to the United States of America as represented by the Secretary of the Army
Filed Mar. 31, 1967, Ser. No. 628,236
Int. Cl. F16c *17/00, 19/50, 21/00*
U.S. Cl. 308—35 **5 Claims**



A bearing having compressible rolling members with a non-adhesive, frictionless, incompressible sealing material between bearing races, whereby upon overload, the rolling members are compressed and the bearing races continue to rotate relative to one another in sliding, rather than rolling, relationship.

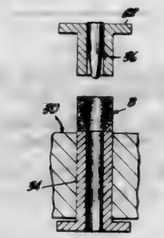
3,445,147
THRUST BEARING ASSEMBLY
Herbert W. Niemi, New Middletown, Ohio, assignor to James K. Faull, Poland, Ohio
Continuation-in-part of application Ser. No. 479,080, Aug. 12, 1965. This application Dec. 15, 1966, Ser. No. 602,074
Int. Cl. F16c *17/04, 17/10, 19/04*
U.S. Cl. 308—135 **7 Claims**



This invention relates to the reduction of friction between a pair of pivoted-together metal members by the disposition of a low-friction plastic between the relatively moveable metal parts of the assembly.

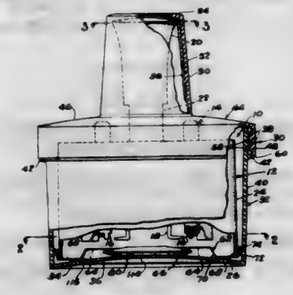
3,445,148
METHOD OF MAKING POROUS BEARINGS AND PRODUCTS THEREOF
Dwight E. Harris and Peter P. Grad, Woodstock, N.Y., assignors to Rotron Incorporated, Woodstock, N.Y., a corporation of New York
Filed June 8, 1967, Ser. No. 644,647
Int. Cl. F16c *9/00, 11/00, 17/00*
U.S. Cl. 308—237 **2 Claims**

A method of making porous bearings of compacted and sintered particulate metal by powder metallurgy comprising the steps of first forming a blank with substantial predetermined dimensional variations from the final surface contours in selected portions and thereafter coining the blank to form the final surface contours and further substantially compact the said selected portions of the



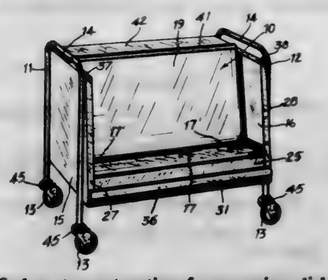
bearings to increase the density of those portions and therefore their load-carrying ability.

3,445,149
APPARATUS FOR STORING ARTICLE DISPENSERS
Norbert T. Kuypers, Warren, Mich., assignor to Difco Laboratories, Incorporated, Detroit, Mich., a corporation of Michigan
Filed Oct. 20, 1966, Ser. No. 588,163
Int. Cl. A47b *81/00*
U.S. Cl. 312—31 **9 Claims**



A storage container for storing dispensers containing reagent or sensitivity discs, and an associated storage rack for holding a plurality of disc dispensing magazines which fits inside the container over a desiccant retaining insert in the container. The container and rack are particularly adapted for use with the disc dispensing magazines, and the container for use with the multiple disc dispensers, disclosed in United States Patent 3,300,087.

3,445,150
DISH CART
Robert Zartarian, Canton, Mass., assignor to Robert Zartarian, Canton, Mass., and Diran C. Basmajian, Cohasset, Mass.
Filed Nov. 28, 1967, Ser. No. 686,048
Int. Cl. B62b *1/10;* **A47b** *91/06, 81/04*
U.S. Cl. 312—250 **9 Claims**



A simplified cart construction for carrying dishes from place to place in an eating facility, having enclosing panels

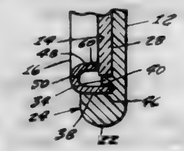
and drain means so that washed dishes may be sterilized and stored therein, to be delivered to the point of use.

3,445,151

MIRROR ASSEMBLY WITH SEAL TIGHT CONSTRUCTION

William H. Stefanakis, % Semitite Mirror Mfg. Co., 3914 Long Beach Road, Island Park, N.Y. 11558

Filed Nov. 2, 1967, Ser. No. 680,186
Int. Cl. G02b 7/18, 5/08
U.S. Cl. 350—67 1 Claim



A mirror assembly having a back panel with uniformly spaced ribs thereon, and forming a channel therebetween wherein a sealing bezel element is located in said channel providing a complete and positive seal between said back and mirror.

3,445,152

MICROSCOPE SLIDES AND METHOD OF MANUFACTURING

Stephen Barnaby Carter, Macclesfield, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Dec. 13, 1965, Ser. No. 513,578
Claims priority, application Great Britain, Jan. 5, 1965, 429/65
Int. Cl. G02b 21/34
U.S. Cl. 350—95 4 Claims

A microscope slide characterized by the provision, on one surface thereof, of barriers which in use serve to restrict or confine cell movement, the barriers being composed of a synthetic resin adhered to the slide. The resin may be, for example, an acrylic resin or polystyrene. A method of making the slide is also disclosed, the method comprising applying, to at least one surface of a slide, a first layer of a synthetic resin to which living cells will not adhere, coating the resin layer with a second layer of a soluble material which can be rendered insoluble by light, projecting an image onto the second layer to render insoluble areas thereof in correspondence with the desired locations of the barriers, treating the silde to remove the remaining soluble areas of the second layer and the corresponding areas of the first layer, and then treating the slide to remove the insoluble areas of the second layer.

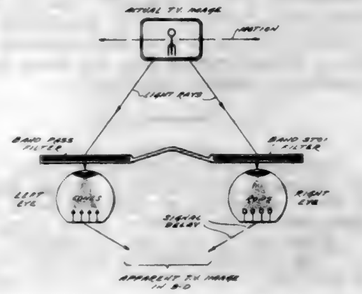
3,445,153

PHOTOPIC AND SCOTOPIC 3-DIMENSIONAL VIEWING SYSTEM

Alvin M. Marks and Mortimer M. Marks, both of 153—16 10th Ave., Whitestone, N.Y. 11357

Filed Apr. 6, 1966, Ser. No. 540,625
Int. Cl. G02b 27/22
U.S. Cl. 350—144 4 Claims

The two dimensional appearance of conventional motion picture and television displays is converted into apparent three dimensional scenes by means of a viewer which causes the observer to see with the rods in one eye and the cones in his other eye. The difference in response



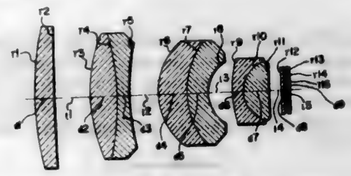
time between cone vision and rod vision produces the effect of viewing stereo pairs.

3,445,154

MODIFIED TRIPLET LENS SYSTEM

Franz Schlegel, Munich, Germany, assignor to Optische Werke G. Rodenstock, Munich, Germany

Filed Aug. 10, 1966, Ser. No. 571,539
Int. Cl. G02b 1/00, 9/34
U.S. Cl. 350—176 1 Claim



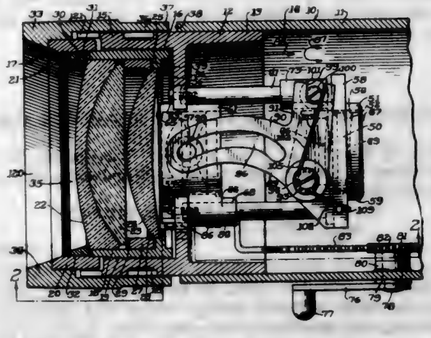
A well corrected modified triplet lens system having an aperture of approximately f:1.1 having an adequate back focus for use as a telescopic lens in an 8 mm. movie camera has seven glasses constituting two air-shaped convergent elements on the object side of the system the inner one being a cemented doublet, and two additional cemented doublets which are a divergent, meniscus-shaped element and a convergent element on the image side of the system. Specific design parameters are given.

3,445,155

MECHANISM FOR RELATIVE ADJUSTMENT OF AXIALLY SPACED LENS ELEMENT

Francis C. Sturrock, Skokie, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois

Filed Aug. 13, 1965, Ser. No. 479,530
Int. Cl. G02b 7/10; B29d 15/00
U.S. Cl. 350—255 5 Claims



A follower fixed to a first lens element rides in an arcuate cam slot in one leg of a crank rockable in a flat plane.

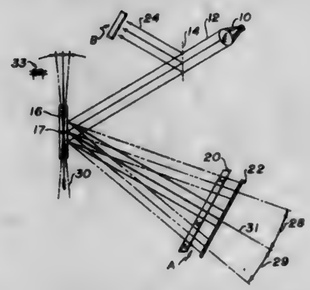
The other leg of the crank is engaged with a member fixed to a second lens element to drive the latter in opposite axial directions as the first element moves through its range in one axial direction.

3,445,156

COLOR MODULATOR SYSTEM

William A. Gantz, Berkeley, Calif., assignor to The Regents of the University of California, Berkeley, Calif.

Filed July 16, 1965, Ser. No. 472,565
Int. Cl. G02f 1/32; H04b 9/00
U.S. Cl. 350—285 5 Claims



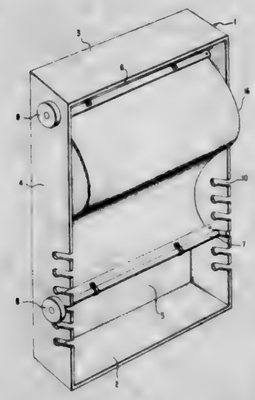
A light modulating system in which light is projected on an angularly modulated mirror through a filter wedge and thence is reflected back along the optical axis of the light beam to project a beam of various intensity or color which is determined by the position of light transmission through the filter wedge.

3,445,157

HAND-OPERATED DISTORTING TOY MIRROR

Robert Zitter, New York, N.Y., assignor to Science for Fun, Inc.

Filed Sept. 17, 1965, Ser. No. 488,152
Int. Cl. A63j 23/00
U.S. Cl. 350—295 1 Claim



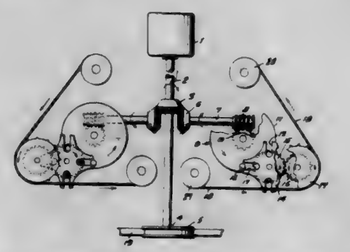
An amusement device which provides a distorted image comprising a flexible reflective sheet, a pair of rigid elongated supporting elements secured at the upper and lower edges of the sheet, a frame having slots at the sides, the slots accommodating the elements to adjust the effective length of the flexible mirror, and handle means projecting from the ends of the elongated elements which can be twisted to increase or decrease the degree of curvature of the flexible sheet. This device is simple enough to be used by a young child and can provide amusement for adults who can be made to appear fat or thin, tall or short at the whim of the individual twisting the handles.

3,445,158

CONTINUOUS SURVEILLANCE PHOTOGRAPHIC RECORDER

Lee E. Davidson, R.D. 2, Box 147, Havre De Grace, Md. 21078

Filed Sept. 14, 1966, Ser. No. 579,809
Int. Cl. G03b 41/06
U.S. Cl. 352—68 4 Claims



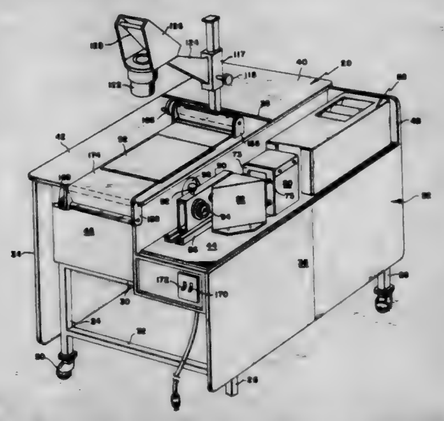
A film advance and shutter mechanism for a motion picture camera operated by a motor driven shaft which is coupled to a pair of Geneva drive assemblies arranged, one each, on either side of the shaft and which intermittently advance film over the two lens of the camera. The shutter mechanism of the camera is operated by the free end of the shaft which carries a pulley for quick conversion from double shutter operation to single shutter operation.

3,445,159

MULTIMEDIA PROJECTION SYSTEM

Kurt H. Hoppmann, Falls Church, Va., assignor to Hoppmann Corporation, Alexandria, Va., a corporation of Virginia

Filed Mar. 1, 1966, Ser. No. 530,929
Int. Cl. G03b 21/26
U.S. Cl. 353—35 3 Claims

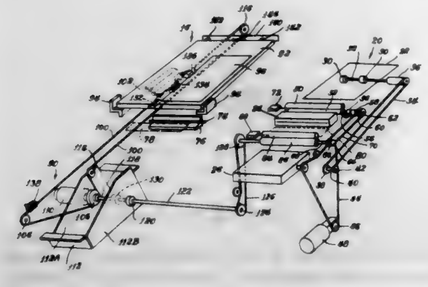


A multimedia projection device having a plurality of optically aligned stage plates for separately supporting film strips, slides, or other projection media to be projected as a composite image. A movable first stage projection lens support is provided having separate film strips and slide projection lenses mounted thereon. By movement of the support, either lens may be positioned into the optical path depending on whether slides or film strips are to be projected.

ERRATUM

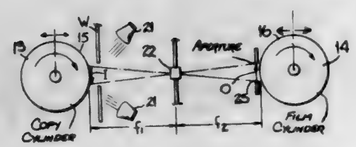
For Class 353—77 see:
Patent No. 3,445,163

3,445,160
COPYING APPARATUS
Kristian L. Helland, Schaumberg, Ill., assignor to Addressograph-Multigraph Corporation, Mount Prospect, Ill., a corporation of Delaware
Filed Apr. 7, 1966, Ser. No. 540,977
Int. Cl. G03g *15/04, 15/00*
U.S. Cl. 355—11 15 Claims



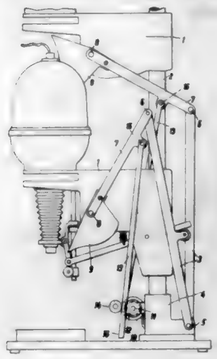
A photoelectrostatic copying machine includes an original supporting table which is reciprocated past an illuminating station to produce a light image of the original which is directed on a uniformly charged surface of a copy sheet at an exposing station. The exposed copy sheet is then developed and discharged from the machine. Switches controlled by the position of the table and by the copy sheets control or synchronize a number of machine operations including the feeding of copy sheets, the illumination of the original, and the provision of forward and reverse drives for the table.

3,445,161
OPTICAL PROJECTOR FOR REPROPORTIONING IMAGES
Franklin Moss, Ridgewood, N.J., assignor to Mosstype Corporation, Waldwick, N.J., a corporation of New York
Filed Nov. 12, 1965, Ser. No. 507,433
Int. Cl. G03b *27/58*
U.S. Cl. 355—47 10 Claims



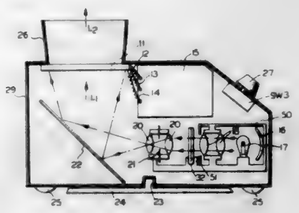
An optical projector adapted to alter the ratio of lateral-to-longitudinal dimensions in a negative film derived from a copy such as an original drawing. The copy and the sensitive film are mounted on separate rotating cylinders in an arrangement in which an illuminated image of the copy is projected onto the surface of the film through a linear aperture aligned with the longitudinal axes of the cylinders. As the cylinders rotate, the aperture is effectively drawn across the sensitive film to expose same, the resultant degree of reproportioning depending on the relative circumferential speeds of the cylinders.

3,445,162
DEVICE FOR AUTOMATICALLY CONTROLLING THE EXPOSURE TIME FOR PHOTOGRAPHIC ENLARGING DEVICES
Walter Klatt, 34 Bergwaldstrasse, 7261 Gechingen, Kreis Calw, Germany
Filed Jan. 13, 1967, Ser. No. 609,118
Claims priority, application Germany, Jan. 15, 1966, K 58,150
Int. Cl. G03b *27/72*
U.S. Cl. 355—56 11 Claims



Photographic enlarger with camera device adjustable along a column and having a resistor adjustable to adjust exposure time wherein movement of the camera device along the column automatically adjusts the resistor by a linkage system which may also adjust the sharp focusing structure of the camera device.

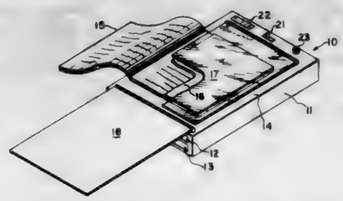
3,445,163
REVERSIBLE FILM-VIEWING APPARATUS
Nobumasa Ohoshima, Hirakata-shi, Osaka-fu, and Eiichi Sugi, Moriguchi-shi, Osaka-fu, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Osaka, Japan
Filed Nov. 7, 1966, Ser. No. 592,479
Claims priority, application Japan, Nov. 5, 1965, 40/68,660; Jan. 27, 1966, 41/5,074
Int. Cl. G03b *21/28*
U.S. Cl. 353—77 13 Claims



1. A reversible film-viewing apparatus capable of reversely intensifying images of negative films, which comprises an image converting panel consisting of a glass plate, a first transparent electrode on said glass plate, an electroluminescent layer having an electroluminescent material on said first transparent electrode, a reflective layer on said electroluminescent layer, an opaque layer on said reflective layer, a photoconductive layer containing photoconductive material on said opaque layer, a parallel grid electrode embedded in said photoconductive

layer. a transparent dielectric layer having a transparent film thereon on said photoconductive layer, second transparent electrode on said dielectric layer and a second glass plate; a light source having a light intensity controller; and optical means receiving light from said light source and shining it through and enlarging images on a negative film and projecting the enlarged images on said photoconductive layer of said panel through the second transparent electrode and the transparent dielectric layer layer of said image converting panel, said optical means having projecting lens and condenser lens which pass all effective light wave-lengths of the spectral response characteristic of said photoconductive material; film inserting means guiding a film through said optical means; a power source coupled to said panel and supplying AC voltages across said two transparent electrodes and across said first transparent electrode and said parallel grid electrode so as to reproduce images on said electroluminescent layer; and a contrast controller in said power source for adjusting the tones of said reproduced images.

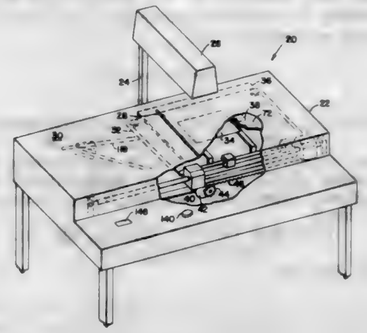
3,445,164
PORTABLE COPY MACHINE
Iben Browning, Sunnyvale, Calif.
(1052 Pomeroy Ave., Santa Clara, Calif. 95051)
Continuation-in-part of application Ser. No. 551,274, May 19, 1966. This application Feb. 6, 1967, Ser. No. 614,118
Int. Cl. G03b *27/04*
U.S. Cl. 355—82 8 Claims



A platen for producing a photocopy using ambient light and including a rigid member having a surface of a size at least coextensive with the copy paper, a light-sensitive element connected to the rigid member adjacent the region of the copy paper and an indicating light connected to the member and exposed to the view of the operator. The rigid member can serve as a platform on which the copy paper is laid or take the form of a transparent member placed upon the paper being copied and in which internal light reflections are conducted to the light-sensitive element.

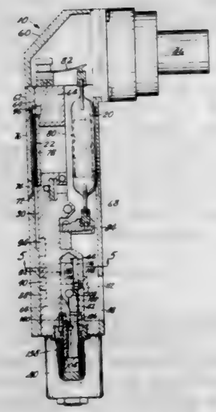
3,445,165
PHOTOGRAPHIC DISTORTION DEVICE
Wendell P. Dubbs, 470 Nevada Ave.,
Palo Alto, Calif. 94301
Filed Oct. 10, 1966, Ser. No. 585,334
Int. Cl. G03b *27/10*
U.S. Cl. 355—84 16 Claims

A device for producing a print from a photographic image with a predetermined change in one dimension thereof comprising a source of light positioned over a fixed frame with an enclosure around the frame spaced from said light source and having an elongated aperture for admitting light from said source. Within the enclosure is a first mounting means for receiving a photosensitive sheet of material and a drive means for moving said first mounting means at a predetermined rate, and means for supporting said first mounting means for rectilinear movement within said enclosure. A second mounting means for receiving the photographic image to be printed is movable relative to and along the same line of rectilinear travel as said first mounting means, and means are provided that are movable transversely to the line of rectilinear travel in response to movement of



said first mounting means and these latter means are connected to said second mounting means for moving it past said light aperture at a predetermined linear rate that is different from the rate of movement of said first mounting means.

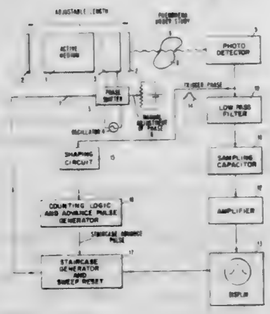
3,445,166
FLUID-OPERATED SHUTTER
Gerald P. Kloven, White Bear Lake, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Mar. 14, 1966, Ser. No. 533,946
Int. Cl. G03b *27/04, 27/76*
U.S. Cl. 355—121 17 Claims



A fluid-operated shutter is shown which uses a transparent fluid coolant to control the operation of the shutter which is positioned between a high temperature radiation source and a radiation sensitive material wherein the transparent fluid absorbs a substantial amount of heat generated by the radiation source and effectively diminishes the amount of heat transmitted to the radiation sensitive material. The fluid-operated shutter comprises, in combination, means for controlling direction of coolant flow and a coolant flow-through chamber having windows which are substantially transparent to the radia-

tion and which are located relative to the chamber such that when the shutter is positioned by coolant flow direction away from the windows, radiation from the source passes through the windows and impinges on the radiation sensitive material. In one embodiment, the fluid-operated shutter may include a heat exchanger for removing heat absorbed by the coolant and means for maintaining the radiation source at a substantially predetermined temperature level.

3,445,167
OPTICAL SAMPLING SCOPE-STROBOSCOPE USING A PULSED LASER
John A. Armstrong, South Salem, and Norman Braslau, Katonah, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Jan. 13, 1967, Ser. No. 609,184
Int. Cl. G01p 3/40
U.S. Cl. 356—23 3 Claims

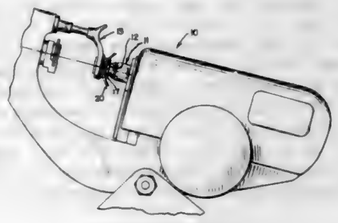


This invention is an optical analogue of a sampling oscilloscope which allows one to display with higher time resolutions than hitherto obtainable a repetitive phenomenon that reacts with light. In the main, the system relied upon to obtain such high time resolutions comprises a generator of a train of very short (of the order of 10^{-11} seconds) optical pulses of accurately controllable repetition frequency, a means for shifting the occurrence of said pulses with respect to a given time reference, including means for passing these optical pulses through or reflecting them from a repetitive phenomenon capable of examination optically, and means for converting the signals obtained by such optical examination to electrical signals that can be displayed.

3,445,168
PROCESS AND ELEMENT FOR STRAIN MEASUREMENT
Felix Zandman, Villanova, Pa., and Daniel Post, Sheffield, England, assignors to Vishay Intertechnology, Inc., Malvern, Pa., a corporation of Delaware
No Drawing. Filed Oct. 28, 1965, Ser. No. 505,464
Int. Cl. G01b 11/16
U.S. Cl. 356—32 13 Claims

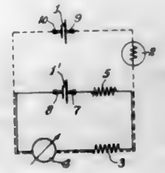
A deformation test device having a flexible metal backing sheet and a finely divided metallic transferable pattern, the method of making this device and the use of the device for making moire fringe measurements are disclosed. The test device is made by establishing a predetermined regular master pattern in a photosensitive medium and forming on a flexible metal backing sheet a thin metallic coating, in a pattern directly related to the master pattern, which is transferable from the metal backing sheet to a test object.

3,445,169
NEUTRALIZER LENS FOR LENS TESTING INSTRUMENT
Irving B. Lueck, East Rochester, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Dec. 14, 1964, Ser. No. 418,074
Int. Cl. G01b 9/00; G02b 3/00, 9/00
U.S. Cl. 356—124 2 Claims



An ancillary lens which is demountably held in the conical stop of a vertometer and is so constructed as to extend the measuring range of the instrument by displacing the target zero position.

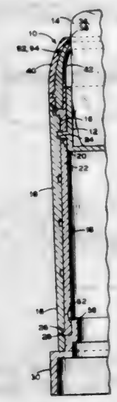
3,445,170
PHOTOELECTRIC EXPOSURE METER
Rolf Dietrich, Stuttgart, Dirk Ulffers, Stuttgart-Degerloch, and Hans Warstat, Stuttgart, Germany, assignors to Zeiss Ikon Aktiengesellschaft, Stuttgart, Germany
Filed Jan. 4, 1965, Ser. No. 423,158
Claims priority, application Germany, Jan. 18, 1964, 210,589
Int. Cl. G01j 1/44
U.S. Cl. 356—226 6 Claims



A photoelectric exposure meter employing a photoelectric resistance measuring instrument and a battery in an electric circuit. Another electric circuit is connected with said first mentioned electric circuit and the battery is movably arranged to be disconnected from said first circuit and connected in said other electric circuit so that the measuring instrument indicates the charge condition of the battery, while the electric circuit containing the photoelectric resistance is interrupted.

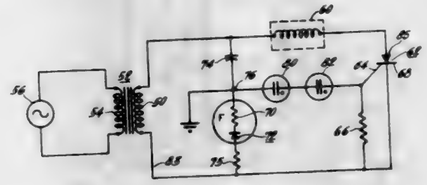
3,445,171
LIPSTICK CONTAINER WITH SELF-CONTAINED CLOSURE
David Seidler, New York, N.Y.
(69—10 108th St., Forest Hills, N.Y. 11375)
Filed Oct. 16, 1967, Ser. No. 675,393
Int. Cl. A45d 40/06, 40/22
U.S. Cl. 401—59 8 Claims

A container for a lipstick, or the like, designed for manufacture in plastic, is arranged to propel and extend the lipstick, or the like, through a front opening, to forward or projected position for use, and, in the reverse operation, to retract the lipstick for concealment in the closed container which is provided with two front cover



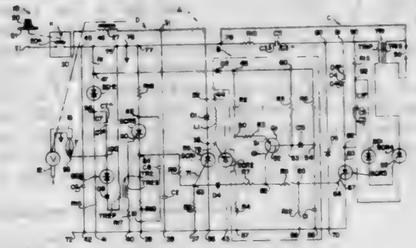
door elements that are movable to a closure position over the front opening of the container when the lipstick is retracted to storage position.

3,445,172
FAIL-SAFE SYSTEM
Robert J. Zielinski, Rochester, N.Y., assignor to American Gas Association, Inc., New York, N.Y., a corporation of New York
Filed Aug. 2, 1967, Ser. No. 657,943
Int. Cl. F23g 23/00; F23n 5/08; H01h 47/24
U.S. Cl. 431—24 4 Claims



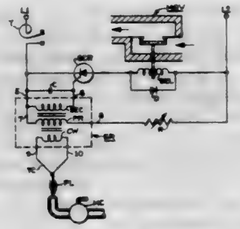
A fail-safe electrical circuit arrangement for holding open a thermal gas valve when a flame supplied by the valve is present and for insuring that the valve will be closed when the flame is absent, despite failure of certain circuit components. Alternating voltage is applied to the series combination of the heating coil of the valve and the anode-cathode path of a silicon controlled rectifier (SCR). The SCR is normally biased off, but is turned on intermittently by intermittent control pulses from a flame-sensing circuit when, and only when, the flame to be sensed is present. The current pulses thereby produced through the SCR apply sufficient power to the heating coil to hold the gas valve open when the flame is present. When the flame is absent, no control pulses are applied, no current flows through the heating coil and the valve closes. Should the SCR become open-circuited, again no current will flow and the valve closes. Should the SCR become short-circuited, in one or both directions, the resultant higher R.M.S. current through the heating coil will cause it, or a fuse in series therewith, to burn out so that the thermal valve is again deactuated and closed. The flame-sensing circuit itself is preferably of a fail-safe type, so that the entire system has fail-safe characteristics.

3,445,173
BURNER CONTROL APPARATUS
Stuart H. Malavasi, West Millington, and Marsden L. Miller, Westfield, N.J., assignors to Ranco Incorporated, a corporation of Ohio
Filed Feb. 23, 1967, Ser. No. 618,090
Int. Cl. F23n 1/00, 5/02
U.S. Cl. 431—25 15 Claims



Burner control apparatus including a burner and an electrically energized valve in a fuel supply conduit therefor, circuitry including a control switch, a pulsing circuit, an igniter circuit and a flame detector circuit which cooperate when the circuit is energized through the switch to produce a supply of fuel to the burner, ignite the fuel, and maintain the supply of fuel to the burner in response to the presence of a flame produced by burning of the fuel. The control switch is a thermostatic switch which opens when a medium heated by the burner reaches a predetermined temperature, closing the valve and resetting the circuitry. In the event that the fuel supply to the burner is not ignited, the fuel supplied thereto is automatically cut off until such time as the control circuitry is reset.

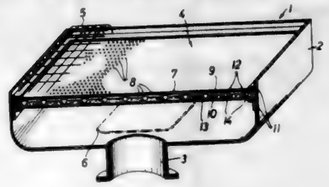
3,445,174
FUEL BURNER CONTROL UTILIZING THERMOCOUPLE TRIGGERED SILICON CONTROLLED RECTIFIER
Russell B. Matthews, Goshen, Ind., assignor to Penn Controls, Inc., Oak Brook, Ill.
Filed Dec. 1, 1967, Ser. No. 687,214
Int. Cl. F23q 9/08; H01h 47/26
U.S. Cl. 431—59 6 Claims



Fuel feeding means are energized through a silicon controlled rectifier which is fired by a hot thermocouple. A saturable reactor couples the gate of the rectifier to the thermocouple. The reactor comprises two magnetic cores separated by electrical insulating and nonmagnetic material, which cores are encircled in common by primary and secondary windings to provide two separate magnetic circuit paths interconnecting these windings. A control winding is provided for each of the magnetic cores. The control windings are interconnected electrically in series and magnetically in opposition for energization by the thermocouple. Under cold thermocouple conditions, the voltage induced in each of the control windings is substantially cancelled to provide zero current flow therein, obviating false triggering of the rectifier by voltage generated in the extremely low impedance control winding circuit.

3,445,175
GAS BURNERS
Kurt Krieger, 16 Oberlindtrasse, Duesseldorf, Germany
Filed Feb. 28, 1967, Ser. No. 619,399
Claims priority, application Germany, Apr. 6, 1966, K 58,938; Aug. 26, 1966, K 60,106
Int. Cl. F23d 13/12
U.S. Cl. 431—328 10 Claims

A burner for mixtures of air and gas or fuel vapour has a burner head comprising an apertured plate of heat resisting metal, and an apertured layer, e.g., a fibrous fleece, of insulating material, which is arranged behind the metal plate and may be spaced therefrom. The total cross section of the apertures in the insulating layer may be less than that of the apertures in the metal plate and the apertures in the layer may be less numerous than those in the plate. The apertures in the layer may be enlarged towards the plate and may be formed by small metal tubes. The metal parts may be of chrome-nickel



alloy or a high melting point heavy metal or alloy and the insulating material may be a fibrous material based on aluminum oxide.

CHEMICAL

3,445,176
METHODS OF AND COMPOSITIONS FOR COLORING COLLOID COATED SURFACES
Paul H. Jamieson, 9341 Peninsula Drive, Dallas, Tex. 75218
No Drawing. Filed June 6, 1966, Ser. No. 555,290
Int. Cl. D06p 3/00, 3/02, 5/00
U.S. Cl. 8—3 5 Claims

A method of coloring a photographic type colloid coated surface by applying to the surface a solution containing a major effective portion of a polyhydric alcohol, a minor effective portion of an alcohol-soluble alkyd resin, and a minor effective portion of a dye, and then adding sufficient water to said solution to drive the dye therefrom and into the colloid surface.

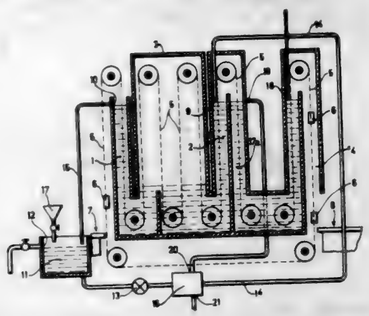
3,445,177
DISCHARGE PRINTING A DIRECT-DYE DYED HALOALKANOL CROSSLINKED CELLULOSE FABRIC AND CREASEPROOFING WITH AN AMINOPLAST
James H. McKeason, Spartanburg, S.C., assignor to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of Delaware
No Drawing. Filed June 20, 1963, Ser. No. 289,438
Int. Cl. D06p 5/00, 7/00
U.S. Cl. 8—17 2 Claims

1. A process for the preparation of a discharge printed cellulosic fabric having an improved configurational memory comprising the steps of dyeing said fabric with a direct dye as a ground shade, contacting said dyed fabric under aqueous alkaline conditions with a short chain halogenated hydroxyalkane cross-linking agent, discharge printing the cross-linked celluosic fabric with a mixture including a sulfur salt reducing agent and then impregnating the printed fabric with an acid catalyzed aminoplast having a molecular weight not greater than 1,000 and curing said aminoplast.

3,445,178
DEPILATION WITH A CHLORITE AND HYDROGEN PEROXIDE OR A PERBORATE
Fritz Hahn, Frankfurt am Main, Germany, assignor to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany
No Drawing. Filed Apr. 7, 1966, Ser. No. 540,856
Claims priority, application Germany, Apr. 8, 1965, D 46,987
Int. Cl. C14c 1/06
U.S. Cl. 8—94.16 6 Claims

Skins and hides are unhaired by contacting such skins and hides with an acidified aqueous chlorite solution containing an effective amount of an inorganic per compound selected from the group consisting of hydrogen peroxide and adducts of hydrogen peroxide to prevent substantial liberation of ClO_2 and Cl_2 during the unhairing treatment.

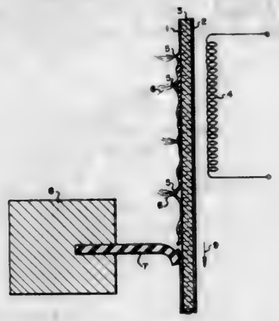
3,445,179
METHOD AND DEVICE FOR INHIBITING CORROSION IN STERILIZERS
Lodewijk Jansen, St. Anthonis, Netherlands, assignor to Gebroeders Stork & Co. Apparatenfabriek N.V., Amsterdam, Netherlands
Filed Dec. 14, 1965, Ser. No. 513,749
Claims priority, application Netherlands, Dec. 15, 1964, 6414570
Int. Cl. C23f 14/02
U.S. Cl. 21—2.7 4 Claims



Articles to be sterilized are moved through a water-filled U-shaped feed tube into and through a closed steam sterilization zone, and out therefrom through a water-filled U-shaped discharge tube. Overflow water from the feed tube is delivered to the discharge tube, and metered quantities of a sequestration agent are added to this water.

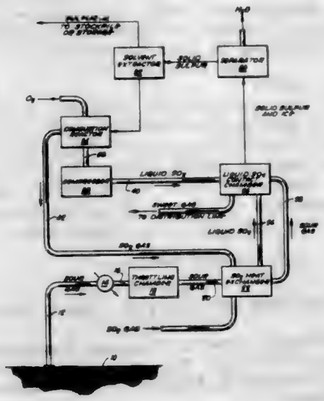
3,445,180
METHOD OF ELIMINATING DAMAGE IN HEAT TREATING A PACKAGING MATERIAL
Torsten L. Lindh, Lund, and Lars O. I. Lindblad, Billesholm, Sweden, assignors to AB Tetra Pak, Lund, Sweden, a company of Sweden
Filed Feb. 2, 1966, Ser. No. 524,593
Claims priority, application Switzerland, Feb. 5, 1965, 1,592/65
Int. Cl. A61l 3/00, 1/00; B32b 31/14
U.S. Cl. 21—56 5 Claims

A method and apparatus to eliminate moisture and vapour from a laminated packaging material by applying heat to one side of the material to force the vapor out of the surface of the outer side of the material. The surface



through which the vapour has escaped is subsequently smoothed out by a means provided therefor to remove the surface deficiencies caused by the vapour passage.

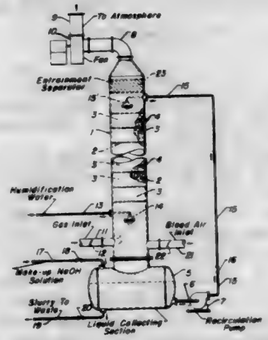
3,445,181
PRODUCING SULFUR FROM HYDROGEN SULFIDE-CONTAINING GASES
Richard L. Every and Ralph Leroy Grimsley, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed Dec. 30, 1964, Ser. No. 422,257
Int. Cl. C02b 17/04, 17/06
U.S. Cl. 23—2 7 Claims



A hydrogen sulfide-containing gas is contacted with an anhydrous liquid sulfur dioxide at a temperature wherein the water of reaction resulting from H_2S and SO_2 reacting to form sulfur and water is crystallized produces sulfur of high amorphous or sulfur μ content. It is preferred to utilize the hydrogen sulfide-containing gas under pressure and to expand same to maintain the SO_2 at the desired temperature.

3,445,182
METHOD FOR REMOVING CHLORINE AND ENTRAINED ALUMINUM CHLORIDE PARTICLES FROM A WASTE GAS STREAM
James P. Tomany, Darien, Conn., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
Filed Feb. 15, 1965, Ser. No. 432,675
Int. Cl. B01d 47/06, 47/12
U.S. Cl. 23—2 6 Claims

Method of removing chlorine and entrained aluminum chloride particles from a hot gaseous stream comprising cooling and agglomerating at least a portion of the particles in the gaseous stream by contacting it with a liquid spray which simultaneously absorbs chlorine and thereafter passing the gas upwardly through a loose mobile floating bed of contact elements in countercurrent contact with a descending stream of an alkaline absorbent solution.



3,445,183
FEEDING SOLIDS TO A FLUIDIZED REACTION ZONE
Edward L. Cairns, Newark, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed May 9, 1966, Ser. No. 548,384
Int. Cl. C01g 49/10, 23/02; C01b 9/00
U.S. Cl. 23—87 4 Claims

The procedure, in conjunction with a continuous process for chlorinating finely divided titaniferous ore with chlorine using fluidized practice and a superatmospheric pressure, of feeding to the fluidized reaction bed a slurry of volatile chlorinating liquid such as titanium tetrachloride, carbon tetrachloride, phosgene, thionyl chloride, sulfur-monochloride and mixtures thereof, and solid titaniferous ore such as ilmenite, and the reducing agent.

3,445,184
PROCESS FOR PRODUCING SHAPED MORDENITE BODIES
Osgood J. Whittemore, Jr., Bellevue, Wash., assignor to Norton Company, Worcester, Mass., a corporation of Massachusetts
No Drawing. Continuation-in-part of application Ser. No. 547,379, May 3, 1966. This application Sept. 18, 1967, Ser. No. 668,628
Int. Cl. C01b 33/28
U.S. Cl. 23—112 1 Claim

Mordenite, in the form of shaped pellets is produced by autoclaving, below 290° C., fired silica-clay-sodium silicate bodies in aqueous sodium silicate including between 0.1 and 15 mole percent silica in solution.

3,445,185
PREPARATION OF ALKALI METAL SULFATES
Heinz Scherzberg, Günter Döring and Wolfgang Ulrich, Sondershausen, Germany, assignors to Kali-Forschungsinstitut, Sondershausen, Germany
No Drawing. Filed July 26, 1966, Ser. No. 567,857
Int. Cl. C01d 5/00
U.S. Cl. 23—121 1 Claim

Method of making alkali metal sulfate from calcium-sulfate by reacting the calcium sulfate with ammonium carbonate solution, thus obtaining calcium carbonate and ammonium sulfate solution, which is converted into alkali

metal sulfate by addition of alkali metal chloride in the presence of an organic solvent, such as methanol, which dissolves ammonium chloride while precipitating alkali metal sulfate; regeneration of the ammonium carbonate from the ammonium chloride solution is effected after distillation of the solvent, by distillation with lime milk and carbonization of the escaping ammonia.

3,445,186
ZINC REMOVAL
Kishakke Govind Hrishikesan, Little Rock, Ark., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
No Drawing. Filed Dec. 9, 1966, Ser. No. 600,377
Int. Cl. C01f 7/02, 7/34; C01g 3/12
U.S. Cl. 23—141 5 Claims

Dissolved zinc is removed from alumina hydrate obtained by the digestion of a zinc-containing aluminous ore with caustic alkali, by forming a slurry of the ore in caustic alkali solution, adding to the slurry at least the stoichometric amount of an alkali metal sulfide to cause precipitation of the zinc as zinc sulfide, the temperature of the digested slurry being no higher than about 220° F., separating alkali insoluble ore residue and a portion of the zinc sulfide to form a digestion liquor, precipitating alumina hydrate from the digestion liquor, and calcining the alumina hydrate at a temperature not less than about 1200° C. to volatilize the remaining zinc sulfide present.

3,445,187
PROCESS FOR SEPARATION OF RED MUD FROM DISSOLVED ALUMINA
Frederick J. Sibert, Chicago, Ill., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware
No Drawing. Filed May 25, 1966, Ser. No. 552,703
The portion of the term of the patent subsequent to July 2, 1985, has been disclaimed
Int. Cl. C01f 7/36
U.S. Cl. 23—143 5 Claims

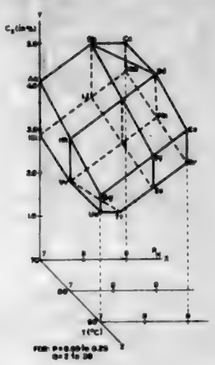
Aqueous suspensions of red mud and dissolved alumina are purified by treating such suspensions with polymers which contain at least 80% of reoccurring moieties such as acrylic acid and its salts.

3,445,188
PREPARATION OF HYDROGEN BROMIDE
Daniel N. Heintz, Brentwood, and Robert G. Lange, St. Louis, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Apr. 18, 1967, Ser. No. 631,599
Int. Cl. C01b 7/12
U.S. Cl. 23—154 8 Claims

This invention relates to the production of gaseous hydrogen bromide by a process wherein sulfuric acid is reacted with a bromide salt in the presence of an inert organic solvent.

3,445,189
PROCESS FOR THE PRODUCTION OF A FINELY DIVIDED, NON-GELATINOUS SILICIC ACID ESPECIALLY SUITABLE AS A FILLER FOR NATURAL AND SYNTHETIC RUBBER AND OTHER ELASTOMERS
Hendrik J. Maat, Diemen, and Johannes Ebregt, Beemster, Netherlands, assignors to Koninklijke Zwavelzuurfabrieken v/h Ketjen N.V., a limited-liability company of the Netherlands
Filed Mar. 3, 1966, Ser. No. 531,414
Claims priority, application Netherlands, Mar. 5, 1965, 6502791
Int. Cl. C01b 33/00
U.S. Cl. 23—182 10 Claims

In the process for producing finely divided silicic acid by simultaneously adding solutions of an alkali silicate and a strong mineral acid to water at a temperature between 70° C. and 90° C., then acidifying the reaction mixture and then separating, washing and drying the silicic acid formed: a pH of 7 to 9 is maintained during the additions of the alkali silicate and strong mineral

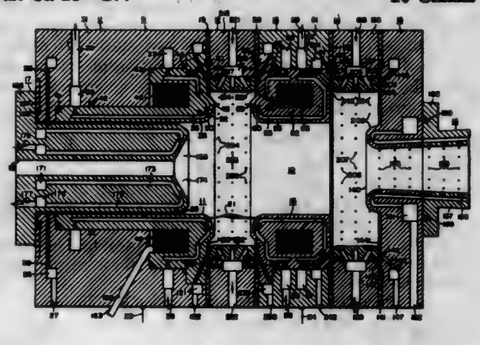


acid solutions to the water, and the addition of such solutions to the water is continued until the concentration of SiO_2 in the reaction mixture has attained a value in the range between 2.5% and 5.0%, by weight, and, as a function of the pH and temperature of the reaction mixture, corresponds to a point within FIG. 7.

3,445,190
METHOD FOR PRODUCING CARBON BLACK
Robert H. Kallenberger, Phillips, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Dec. 20, 1965, Ser. No. 515,140
Int. Cl. C09c 1/50
U.S. Cl. 23—209.4 7 Claims

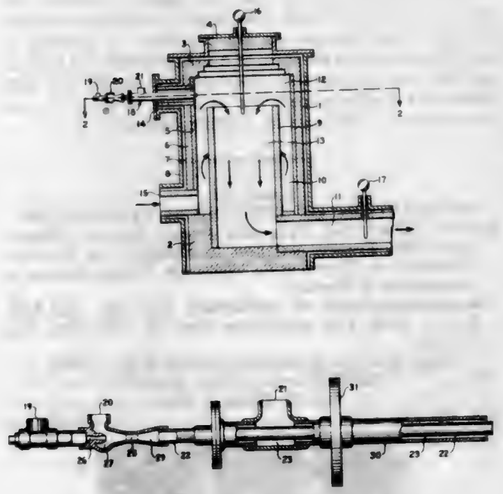
Method and apparatus for producing carbon black wherein the structure characteristics of the carbon black product are controlled by controlling the amount of hydrocarbon feedstock introduced into (1) a first combustion zone downstream from hot combustion gases produced therein and (2) a second combustion zone with which said first combustion zone communicates.

3,445,191
ARC HEATER APPARATUS FOR CHEMICAL PROCESSING
Armin M. Bruning, Franklin Township, Export, and Peter F. Klenast, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 14, 1965, Ser. No. 471,914
Int. Cl. H05b 7/18
U.S. Cl. 23—277 10 Claims



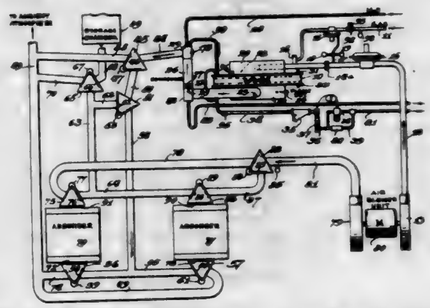
An arc heater for chemical processing has a pair of axially spaced annular electrodes producing an axially extending arc therebetween. Field coils in the electrodes set up a magnetic field which causes the arc to move substantially continuously in an annular path around the electrodes. Means is provided for admitting a process gas at a large number of peripherally spaced points whereby the process gas passes through the arc path and thence into the arc chamber and downstream toward the nozzle. Process gas may be admitted at a number of additional positions axially spaced along the arc heater, always at a large number of peripherally spaced points. A quenching gas may be admitted through the arc path but at a position downstream of where the process gas is admitted: a quenching gas may be admitted through a central aperture in the plug closing the upstream end of the arc chamber at a position actually upstream of the position where the process gas is admitted, but the quenching gas moves downstream before mixing occurs. Very rapid quenching in a time of the order of a fraction of a microsecond is obtainable. Additionally, fluid may be introduced at axially spaced positions at a plurality of peripherally spaced points to "freeze" the recombination product and prevent further undesired chemical reactions.

3,445,192
APPARATUS FOR PRODUCTION AND RECOVERY OF HYDROGEN HALIDES
Richard G. Woodland, Niagara Falls, and Myron C. Hall, Buffalo, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
Original application Mar. 25, 1963, Ser. No. 267,679, now Patent No. 3,305,309, dated Feb. 21, 1967. Divided and this application Feb. 14, 1967, Ser. No. 632,848
Int. Cl. C01b 7/08, 7/12; B01j 6/00
U.S. Cl. 23—277 6 Claims



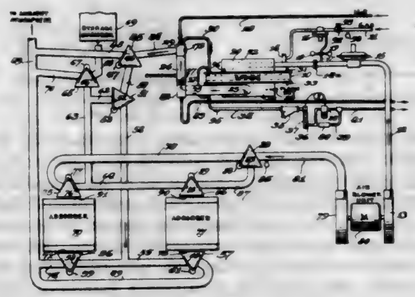
In a furnace for converting halogenated organic materials into carbon dioxide and hydrogen halide, which furnace includes inner and outer fire walls forming an annular combustion chamber between them, an inlet through the outer fire wall into the combustion zone and an outlet from the combustion zone, the improvement which comprises a mixer-nozzle apparatus in the inlet. The mixer-nozzle apparatus includes means for introducing halogenated organic material and gaseous medium into the mixer-nozzle, means for mixing the gaseous medium and the halogenated organic material, a constricted zone after the mixer and an expanded zone after the constricted zone, so that atomization of the mixture is caused in the expanded zone, from whence the atomized mixture passes into the combustion zone of the furnace.

3,445,193
APPARATUS FOR PROVIDING AN OXYGEN CONTAINING ATMOSPHERE
James K. Lamp, Jr., St. Joseph, Mich., assignor to Whirlpool Corporation, a corporation of Delaware
Filed Nov. 5, 1963, Ser. No. 321,625
Int. Cl. B01j 7/00; B01d 53/02; A23b 1/00
U.S. Cl. 23—281 9 Claims



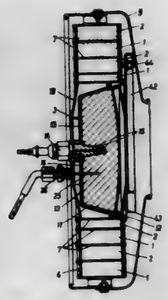
An atmosphere generating system having an electrical circuit with variable timers that control the oxygen and carbon dioxide composition of the atmosphere available to a storage container suitable for storing perishable plant and animal materials. The timers are adjustable to vary the composition as desired.

3,445,194
APPARATUS FOR PROVIDING AN OXYGEN CONTAINING ATMOSPHERE
Jess W. Thomas, New York, N.Y., Joshua R. C. Brown, Chesterton, Ind., and James J. Anderson, Stevensville, Mich., assignors to Whirlpool Corporation, a corporation of Delaware
Filed Nov. 5, 1963, Ser. No. 321,626
Int. Cl. B01j 7/00; A23b 1/00; B01d 53/02
U.S. Cl. 23—281 5 Claims



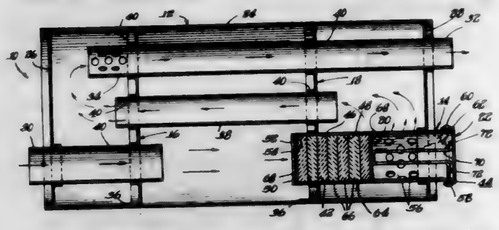
An atmosphere generating system having a catalytic burner adsorption apparatus, an air source and fluid circuitry for providing and maintaining a food preserving atmosphere in a food storage container by flowing air through the adsorption apparatus, then flowing atmosphere through the adsorption apparatus to a place of disposal for a first predetermined time period, then flowing atmosphere directly to the storage container for a second predetermined time period, and then flowing atmosphere through said adsorption apparatus to the storage chamber to transfer the remainder of air to the container and provide a substantially hydrocarbon free atmosphere to the container for a third predetermined time period.

3,445,195
AFTERBURNER DEVICE FOR CATAYLTIC COMBUSTION OF COMBUSTIBLE COMPONENTS IN THE EXHAUST GAS OF AN INTERNAL COMBUSTION ENGINE
Erich Benteler, Kaesewag, and Alfred Kretschmer, Bielefeld, Germany, assignors to Benteler-Werke A.G., Bielefeld, Germany
Filed Mar. 3, 1965, Ser. No. 436,964
Claims priority, application Germany, Mar. 4, 1964, B 75,712, B 75,713
Int. Cl. B01j 9/04
U.S. Cl. 23—288 14 Claims



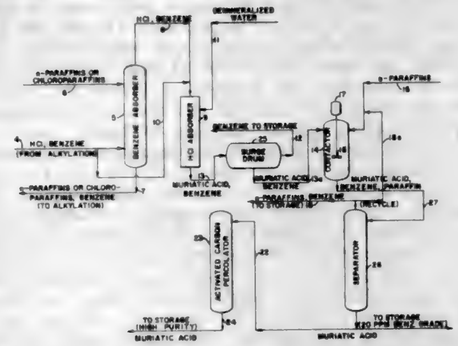
A catalytic afterburner comprising a combustion chamber with inlet and outlet passages having a common wall for heat exchange and with igniting means surrounded by catalyst.

3,445,196
EXHAUST MUFFLER WITH REMOVABLE CATALYTIC UNIT
Dean G. Thomas, Stoughton, Wis., assignor to Nelson Muffler Corporation, Stoughton, Wis., a corporation of Wisconsin
Filed June 6, 1966, Ser. No. 555,409
Int. Cl. F01n 3/14
U.S. Cl. 23—288 9 Claims



1. An exhaust muffler comprising: a substantially hollow muffler shell having an exhaust gas inlet and and exhaust gas outlet; a catalyst container mounted in said shell and having an access port opening outwardly of said shell; baffle means in said shell positioned to cooperate in directing exhaust gases from said inlet, through said container, and to said outlet; a catalytic unit removably disposed inside said container, including a catalytically active body and means for unitizing said body; and cover means for said access port.

3,445,197
REMOVING BENZENE FROM AQUEOUS MURIATIC ACID USING A LIQUID PARAFFIN
Kyle W. Resh, Rosedale, Md., and Jack N. Yarbrough, Wilmington, Del., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed May 27, 1966, Ser. No. 553,452
Int. Cl. B01f 9/02, 9/00
U.S. Cl. 23—312 11 Claims
A method for removing benzene impurities from an aqueous hydrogen halide solution resulting from such processes as alkylation of aromatics. The benzene is extracted in the liquid phase from the aqueous solution using a liquid aliphatic paraffin or cycloparaffin or their halogenated homologues.



3,445,198
ATMOSPHERE REGENERANTS AND METHOD OF PREPARING SAME
Ricardo O. Bach, Gastonia, N.C., and William W. Boardman, Jr., Longview, Tex., assignors, by mesne assignments, to Lithium Corporation of America, New York, N.Y., a corporation of Delaware
No Drawing. Filed Apr. 9, 1964, Ser. No. 358,627
Int. Cl. C01d 11/02
U.S. Cl. 23—315 16 Claims
Atmosphere regenerants in the form of lithium peroxide addition compounds, in particular, lithium peroxide addition compounds resulting from the action of strong hydrogen peroxide on solid, substantially anhydrous lithium peroxide. The compounds are prepared by forming a reaction mixture in the form of a slurry containing lithium peroxide and an essentially inert organic liquid, and then adding the hydrogen peroxide at a rate to maintain the temperature of the reaction mixture below 10° C.

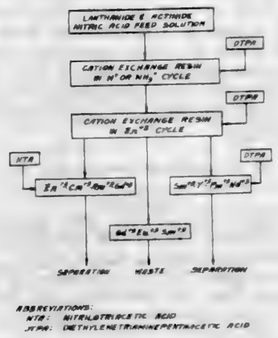
3,445,199
PREPARATION OF ZIRCONIUM COMPOUNDS
Bernard Henri Paul Fehr and Joseph Gascon, Thann, Haut-Rhin, France, assignors to Fabriques de Produits Chimiques de Thann et de Mulhouse, Thann, France, a corporation of France
Continuation-in-part of application Ser. No. 381,149, July 3, 1964. This application May 25, 1967, Ser. No. 649,062
Claims priority, application France, July 9, 1963, 940,775; June 2, 1966, 63,910
Int. Cl. C01g 25/06
U.S. Cl. 23—315 19 Claims



A basic zirconium sulfate convertible to industrial zirconium compounds is prepared by reacting sodium silico-zirconate frit in aqueous suspension with hydrochloric acid, reacting the resulting solution of the zirconium content, which contains colloidal silica in dilute state with sulfate ions in the presence of fluorine ions, moderately heating the reaction solution, and settling out and washing the precipitate. The reactions can be effected advantageously by attacking the frit suspension with a mixture of hydrochloric, sulfuric and hydrofluoric acids.

3,445,200
PROCESS FOR THE DISPROPORTIONATION OF CHLOROSILANES
Jacques Paul Dunogues, Lyon, Marcel Joseph Celestin Lefort, Caluire, and Robert Raphael Puthet, Lyon, France, assignors to Rhone-Poulenc S.A., Paris, France, a French body corporate
No Drawing. Filed Mar. 18, 1966, Ser. No. 535,311
Claims priority, application France, Mar. 19, 1965, 9,996
Int. Cl. C01b 33/08, 33/04; C07f 7/12
U.S. Cl. 23—366 9 Claims
Tris(tertiary amino)phosphine oxides are effective catalysts in the diproportionation of chlorohydrogenosilanes.

3,445,201
ION EXCHANGE PROCESS FOR RECOVERING AMERICIUM AND CURIUM
Earl J. Wheelwright, Richland, Wash., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Mar. 27, 1968, Ser. No. 716,497
Int. Cl. C01g 56/00; C01f 17/00
U.S. Cl. 23—338 7 Claims

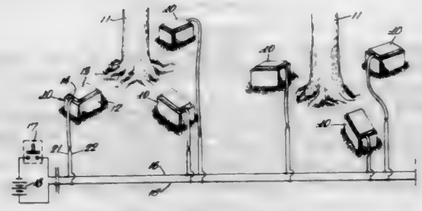


A process for separating americium and curium values from lanthanide and actinide values and from each other by eluting the values through a cation exchange resin bed with diethylenetriamine-pentaacetic acid to separate the americium-curium values which are then separated from each other by elution with nitrilotriacetic acid.

3,445,202
PHOSPHOROUS COMPOUNDS
Peter John Grey, Aldershot, England, assignor to BTR Industries Limited, London, England, a British company
No Drawing. Filed Feb. 28, 1964, Ser. No. 348,283
Claims priority, application Great Britain, Mar. 1, 1963, 8,259/63
Int. Cl. C01f 11/36; C01b 21/10
U.S. Cl. 23—357 12 Claims
Anhydrous metal phosphoro-diamidates are prepared by reacting a metal or anhydrous metal compound with an organo orthophosphoric-diamidate in a polar solvent, or alternatively by reacting an anhydrous metal (other than alkali metal) salt with an anhydrous alkali metal orthophosphoro-diamidate in a dry non-aqueous polar solvent. On heating in inert atmosphere to a temperature of from 125° C. to 900° C. the orthophosphoro-diamidic salts form a foam. On heating either the original compound or the foam produced therefrom to a temperature of from 400° C. to 1000° C. a glassy material is produced from which fibers may be drawn.

3,445,203
CEMENTED CHROMIUM CARBIDE CONTAINING SMALL ADDITIONS OF PHOSPHORUS
William A. Powell, Detroit, Mich., assignor to General Electric Company, a corporation of New York
No Drawing. Filed May 1, 1968, Ser. No. 725,929
Int. Cl. B22f 3/12
U.S. Cl. 29—182.8 6 Claims
Cemented carbide alloys containing chromium carbide and a nickel binder are prepared from chromium carbide and nickel powder to which has been added from a trace to about 0.4% by weight of phosphorus. The addition of phosphorus to the cemented carbide composition has been found to considerably enhance the resulting transverse rupture strength of the alloy without compromise of the remaining desirable properties of the alloy, including high hardness, general corrosion and oxidation resistance and high thermal coefficient of expansion.

3,445,204
ELECTRICALLY OPERATED IGNITER FOR SMUDGE POTS
George F. Bartlett, Paramus, and Samuel Snaidman, Boonton, N.J., assignors to Standard Railway Fusee Corp., Baltimore, Md., a corporation of Massachusetts
Filed Aug. 24, 1967, Ser. No. 663,039
Int. Cl. F23q 21/00
U.S. Cl. 44—36 5 Claims



Apparatus for electrically igniting one or more smudge pots substantially simultaneously, the igniter including a combustible, substantially closed container. Inside the container is a low flash point primary ignition substance and a secondary slow burning fuel having a higher flash point. In the upper portion of the container is an aperture and passing therethrough, a pair of lead wires. A lighter, positioned in the primary ignition substance, includes insulating means separating the lead wires and a resistance wire which electrically terminates the wires.

3,445,205
FUEL OIL COMPOSITION HAVING IMPROVED LOW TEMPERATURE PROPERTIES
Seymour H. Patinkin, Chicago, Ill., James H. Kirk, Dyer, Ind., and William L. Steinhoff, South Holland, Ill., assignors to Sinclair Research Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Sept. 25, 1964, Ser. No. 399,334
Int. Cl. C10l 1/18
U.S. Cl. 44—62 3 Claims
A fuel composition having improved low temperature properties is prepared by incorporating into a petroleum

distillate fuel boiling having the gasoline range minor amounts of an acrylic acid ester polymer pour depressor and a petroleum microcrystalline wax having a melting point up to about 145° F. and derived from a Mid-Continent base crude oil. The fuel compositions of this invention have reduced pour point and improved low temperature pumpability.

3,445,206

METAL HYDROCARBYL ORTHOPHOSPHATE GASOLINE ADDITIVE

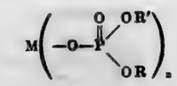
Anthony J. Revukas, Cranford, N.J., assignor to Cities Service Oil Company, Bartlesville, Okla., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 413,631, Nov. 24, 1964. This application Dec. 23, 1965, Ser. No. 516,136

Int. Cl. C10l *1/26*

U.S. Cl. 44—69 18 Claims

A metal hydrocarbyl orthophosphate gasoline additive composition is disclosed, wherein the additive is in the amount of between 0.001 and about 5.0 times the theoretical amount (theories) to react stoichiometrically with the lead in the gasoline combustion product. A preferred metal hydrocarbyl orthophosphate additive is represented by the general formula:



wherein M represents manganese, thorium, and metals of Groups I–B, II–A, VI–B and VIII of the Periodic Table, *n* is a number equal to the valence of the metal M, and R and R′ each represent hydrocarbyl radicals having from 2 to 30 carbon atoms and soluble to the required extent in gasoline; preferably at least one of the R and R′ radicals represents a branched chain hydrocarbyl radical.

3,445,207

MANUFACTURE OF SHEETS OR WICKS FROM FIBERS OF THERMOPLASTIC MATERIAL SUCH AS GLASS FIBERS

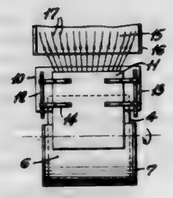
Robert Goerens, Etten-Leur, Netherlands, assignor to Compagnie de Saint-Gobain, Neuilly-sur-Seine, Hauts-de-Seine, France, a corporation of France

Filed Jan. 17, 1966, Ser. No. 521,063

Claims priority, application France, Jan. 21, 1965, 2,745

Int. Cl. C03b *37/10*

U.S. Cl. 65—10 19 Claims



The formation of a ribbon of fibers of thermoplastic material for the production of a mat therefrom derived from a row of streams of molten material such as molten glass, issuing from spinning orifices, which streams solidify as they travel downwardly towards a drawing-out drum to which they are aspirated in substantially parallel relation by a reduced pressure at one radial sector of the drum and are drawn out by the rotation of the drum and a positive pressure exerted on the fibers at a subsequent sector thereof in the direction of rotation, preparatory to the removal of the fibers from the drum following the contact of the fibers with the drum for less than one revolution of the latter. The removal of the fibers from the drum in desired widths is effected by guide baffles in conjunction with the aerodynamic currents of air emanating from a duct spaced from the lateral surface of the drum for the portion of its periphery adjacent to said sectors whereat the above-mentioned suction and pressure effects are generated by a blower nozzle of special design. A pressure compensation chamber between the spinning orifices and the drum, and a special rectifying device for faulty filaments in proximity to the drawing-out drum, assure the entrainment thereby of substantially all of the filaments issuing from the orifices with proper physical characteristics to attain a ribbon of homogeneously attenuated fibers for ultimate transfer and depositing on a travelling support to form a fibrous mat of uniform characteristics.

2,445,208

METHOD OF STRENGTHENING GLASS BY A POTASSIUM-NITRATE-POTASSIUM BOROFLUORIDE MELT

Neil Hunter Ray, Northwich, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Feb. 3, 1965, Ser. No. 430,162

Claims priority, application Great Britain, Feb. 24, 1964, 7,573/64

Int. Cl. C03c *17/00, 15/00;* C03b *27/00*

U.S. Cl. 65—30 3 Claims

1. A process for toughening and strengthening glass comprising heating the glass until it is throughout its thickness at a temperature just below its softening point and then rapidly cooling it from this temperature by immersing in a melt at a temperature from 400° C. to 500° C. and below the lower annealing temperature of the glass and then cooling the glass in the melt for from 2 to 15 minutes, said melt comprising 60 to 70 percent potassium nitrate and 30 to 40 percent potassium borofluoride by weight.

3,445,209

METHOD FOR INITIATING AND CONTROLLING CRYSTALLIZATION OF GLASS

Saara K. Asunmaa, Laguna Beach, Calif., assignor to Owens-Illinois, Inc., a corporation of Ohio

No Drawing. Filed Oct. 20, 1965, Ser. No. 499,039

Int. Cl. C03b *31/00, 5/16*

U.S. Cl. 65—33 5 Claims

A method for initiating and controlling the crystallization of a glass body of the SiO_2—Al_2O_3—TiO_2 system, which body is free of photosensitive substances, by subjecting the body at an elevated temperature of at least 300° C., to gamma rays, ultraviolet rays, or X-rays for at least one hour to initiate nucleation and obtain crystallization of the glass.

3,445,210

ADHESIVE MATERIAL AND METHOD OF USING SAME TO ADHERE CERAMIC MATERIAL TO METAL

Hiroyuki Matsuzaki and Shokichi Shimizu, Kawasaki-shi, and Masahiko Mizuo, Hunabashi-shi, Japan, assignors to Fujitsu Limited, Kawasaki, Japan, a corporation of Japan

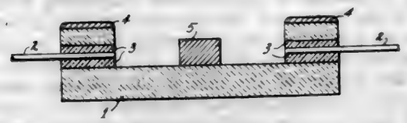
Filed Mar. 2, 1965, Ser. No. 436,692

Claims priority, application Japan, Mar. 5, 1964, 39/12,193

Int. Cl. C03b *23/20*

U.S. Cl. 65—43 7 Claims

An adhesive material comprises vanadium pentoxide in an amount of approximately 15% by weight, zinc fluoride in an amount of approximately 28% by weight, zinc oxide in an amount of approximately 27% by weight, boron oxide in an amount of approximately 21% by weight, aluminum oxide in an amount of approximately 4.5% by weight and titanium dioxide in an amount of approximately 4.5% by weight.



3,445,211

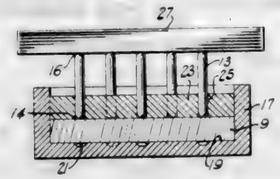
PROCESS FOR SEALING CONNECTORS IN A PLANAR STRUCTURE

Donald R. Kerstetter, Emporium, Pa., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed May 10, 1966, Ser. No. 549,057

Int. Cl. C03b *25/20*

U.S. Cl. 65—56 4 Claims



A process for fabricating a backplate for a display device includes the steps of depositing a glass plate in a mold, covering the plate with a jig having holes therein, inserting an electrical conductor into each of the holes, applying pressure to the conductors, heating the glass plate to a working temperature to cause the conductors to pass through the glass plate, and grinding the surface of the glass plate to expose the ends of the conductors.

3,445,212

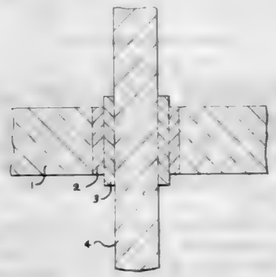
METHOD OF SEALING COPPER IN SILICA BODY

Frederic L. Bishop, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio

Filed June 14, 1966, Ser. No. 557,486

Int. Cl. C03c *27/02*

U.S. Cl. 65—59 8 Claims



A method of sealing a copper lead-in conductor to a surface of a low-expansion silica containing material using a reduced copper sealing glass.

3,445,213

MANUFACTURE OF A CONTINUOUS GLASS SHEET ON A MOLTEN METAL BATH

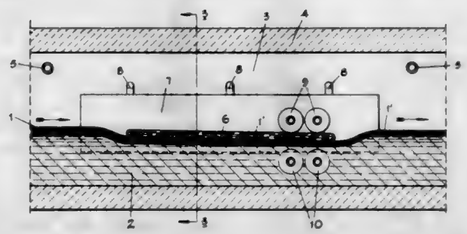
Bernard Long, Paris, France, assignor to Libbey-Owens-Ford Company, a corporation of Ohio

Filed May 27, 1965, Ser. No. 459,168

Claims priority, application France, June 22, 1964, 979,178

Int. Cl. C03b *29/04, 18/02*

U.S. Cl. 65—65 11 Claims



Producing a glass ribbon of reduced thickness by moving a ribbon of glass at elevated temperature over a bath of molten metal and maintaining a layer of liquid on a section of the ribbon to apply pressure on a predetermined length and across the width of the upper surface of the ribbon, so that the glass in the ribbon is caused to flow in the direction of its movement and thereby reduce the thickness of the ribbon.

3,445,214

METHOD AND APPARATUS FOR ELECTRICAL VISCOSITY CONTROL OF FLOAT GLASS

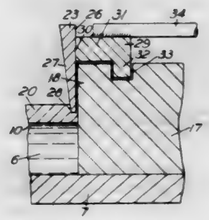
Edward Russell Ormesher, Rainford, England, assignor to Pilkington Brothers Limited, Liverpool, England, a corporation of Great Britain

Filed Mar. 1, 1966, Ser. No. 530,910

Claims priority, application Great Britain, Mar. 3, 1965, 9,146/65

Int. Cl. C03c *23/00;* C03b *7/00, 5/30*

U.S. Cl. 65—99 10 Claims



A layer of molten glass is supported on a molten metal surface and electric current is passed through the thickness of an area of the glass with the molten metal acting as one electrode, so that the area is thermally conditioned.

3,445,215

METHOD FOR REFINING GLASS BATHS

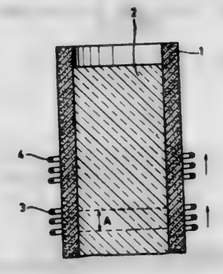
Evert Jan de Bock, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company Inc., New York, N.Y., a corporation of Delaware

Filed Feb. 26, 1965, Ser. No. 435,534

Claims priority, application Netherlands, Mar. 13, 1964, 6402629

Int. Cl. C03b 5/16

U.S. Cl. 65—134 5 Claims



A method of treating glass comprises the steps of melting the glass material in a container, then inductively heating a small zone near the bottom of the container to raise its temperature, and finally moving the heated zone upwardly through the molten glass in the container. The method enhances the removal of gasses from the molten glass.

3,445,216

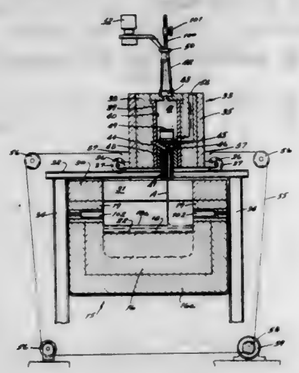
MOLTEN ADDITION OF COLORANT IN A GLASS FURNACE FOREHEARTH

George E. Keefer and Yu K. Pei, Toledo, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio

Original application Dec. 6, 1962, Ser. No. 242,682, now Patent No. 3,343,935, dated Sept. 26, 1967. Divided and this application July 12, 1967, Ser. No. 652,773

Int. Cl. C03b 5/32, 5/18

U.S. Cl. 65—145 5 Claims



This disclosure is directed to the coloring of a base glass flowing through a forehearth by the addition thereto of a molten, highly colorant, enriched glass. The addition of a colorant to a forehearth while it is in a molten state avoids the production of crystals which may occur when a solid colorant is added and also obviates the necessity of utilizing excessive heat to remelt or melt the ingredients added in dry or unmelted form. An aspirating melter is provided in superimposed relationship with respect to the forehearth. The colorant ingredient is melted above the forehearth and is permitted to flow by gravity in a molten state from the melter into the forehearth and onto the surface of the molten glass flowing therein. The melter is constructed and mounted in such a manner that it may be reciprocated across the width of the forehearth, in this manner providing a distribution of the colorant over the width of the forehearth. By controlling the rate at which the colorant melter is reciprocated, close control may be had with respect to the amount of colorant added at any given lateral or transverse position of the forehearth.

3,445,217

COMPOSITE TWEEL WITH INTERNAL SUSPENSION SYSTEM

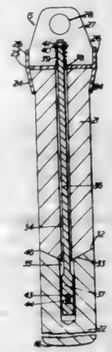
George Alfred Dickinson, St. Helens, and Charles Fitzroy Griffith, Liverpool, England, assignors to Pilkington Brothers Limited, Liverpool, England, a corporation of Great Britain

Filed Oct. 25, 1966, Ser. No. 589,420

Claims priority, application Great Britain, Nov. 3, 1965, 46,621/65

Int. Cl. C03b 5/30

U.S. Cl. 65—172 5 Claims



A composite tweel for use in glass manufacturing apparatus comprising an upper part of refractory material resistant to thermal shock and a lower part of refractory material resistant to wear by molten glass, and suspension system including hanger bolts which press the lower portion upwardly against the upper portion.

3,445,218

PARISON TRANSFER AND INVERT MECHANISM

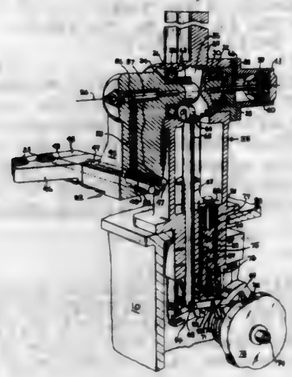
Urban P. Trudeau, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio

Filed July 14, 1964, Ser. No. 382,534

Int. Cl. C03b 9/16, 9/26

U.S. Cl. 65—235 6 Claims

This case is directed to apparatus for inverting parisons, formed in a neck-down position, and transferring the parisons to blow molds during the inversion thereof. The invert and transfer motion is carried out in a predetermined period of the glass forming cycle with the rate of movement controlled in accordance with the incremental movement of the invert arm by providing a mechanical servo-feed-back loop between a cam carried by the arm and a timing cam for continuously adjusting the position



of a spool valve which controls the flow of fluid to the fluid motor driving the invert arm.

3,445,219

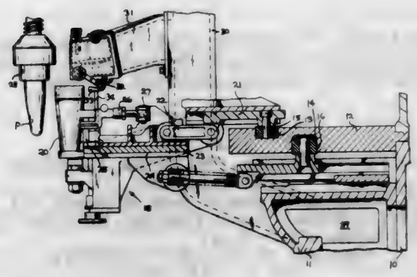
APPARATUS FOR FORMING GLASS ARTICLES WITH TREATING MEANS

John E. Cook, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio

Filed Sept. 24, 1965, Ser. No. 489,864

Int. Cl. C03b 9/34

U.S. Cl. 65—267 3 Claims



In the operation of the well-known Westlake paste mold machine for forming tumblers or the like glass articles, a gather of glass is positioned on the upper end of a spindle. The spindle is rotated end for end, while the spindle is rotated about its axis and puff air is introduced to the interior of the gather. To control the elongation of the parison through the action of gravity, cooling air is directed against the side wall of the parison from one direction. Thus, through the rotation of the parison in front of the cooling air, the skin of the parison will be rendered somewhat more viscous. The amount of cooling air will determine, to a certain extent, the rate of elongation of the parison. Also, the spindle end which is holding the upper end of the parison is cooled by air being directed against the side of the spindle. The externally applied cooling air is supplied from a single air manifold having two separate exit openings directed toward the spindle and parison. Interruption of the spindle rotation is found to be advantageous just prior to enclosing of the parison within the paste mold so as to permit a greater amount of glass to accumulate near the bottom of the parison and to permit this accumulation to elongate at a greater rate uninfluenced by centrifugal force. The cooling air which is directed against the spindle is continued during this period, but the cooling air which is directed against the side wall of the parison is discontinued in response to movement of the mold into horizontal alignment with the parison so as not to cause uneven glass thickness distribution upon final expansion of the parison in the paste mold.

3,445,220

METHOD OF MAKING HUMUS BY AERATING A MIXTURE OF CACHAZA AND PROTEIN

Gerald A. Anderson, Nags Head, N.C. (2845th USAF Hospital or 3219 Orion Circle, Griffiss AFB, New York 13440)

No Drawing. Filed Mar. 8, 1967, Ser. No. 621,461

Int. Cl. C05f 11/08, 5/00

U.S. Cl. 71—9 8 Claims

A soil improver is made from cachaza, a waste product of sugar cane processing. According to the invention, cachaza is converted into a sweet-smelling humus soil improver by aerating a mixture of cachaza and a protein. This process causes the production of an excellent humus by a process of exothermic aerobic fermentation without adding fermentation yeasts. The product is moist and fluffy and much like sweet smelling soil and has been found to be an excellent soil improver, and particularly advantageous where the soil is poor in humus.

3,445,221

PHENOXYTHIOACETIC ESTERS AS DESICCANTS

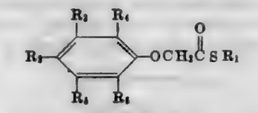
Erik K. Regel, Wuppertal-Cronenberg, Germany, assignor to Chemagro Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed June 24, 1966, Ser. No. 560,094

Int. Cl. A01m 9/12, 5/00; C07c 153/07

U.S. Cl. 71—72 18 Claims

There is provided a process of desiccating cotton by applying to the growing cotton plant an ester having the formula:



in an amount effective to cause desiccation, where R_1 is alkyl, alkenyl, phenyl, chlorophenyl, bromophenyl or benzyl; 1 to 3 of R_2, R_3 R_4, R_5 and R_6 are halogen of atomic weight 35 to 80, 0 to 1 of R_2, R_3, R_4, R_5 and R_6 is methyl and the balance of R_2, R_3, R_4, R_5, and R_6 are hydrogen.

3,445,222

HERBICIDAL COMPOSITIONS CONTAINING TRISUBSTITUTED-PHENYL N-METHYLCARBAMATES

Albert H. Haubein, Newark, Del., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware

No Drawing. Original application June 23, 1964, Ser. No. 377,384, now Patent No. 3,391,180, dated June 2, 1968. Divided and this application Nov. 8, 1967, Ser. No. 681,579

Int. Cl. A01n 9/20, 5/00

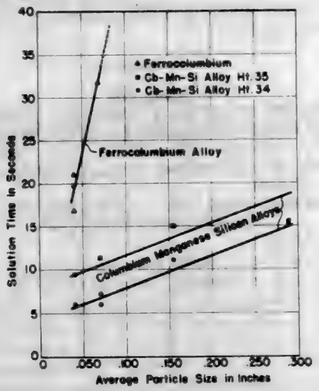
U.S. Cl. 71—106 10 Claims

The compositions contain compounds which are of the class of substituted-phenyl N-methylcarbamates, a representative compound being 2-t-butyl-6-methallyl-4-methylphenyl N-methylcarbamate. The compositions are useful in the pre-emergence control of crabgrass.

3,445,223
ALLOY FOR ADDITION OF COLUMBIUM TO STEEL

Dunstan W. P. Lynch, Cambridge, Ohio, assignor, by mesne assignments, to Foote Mineral Company, Exton, Pa., a corporation of Pennsylvania

Filed Jan. 6, 1967, Ser. No. 607,822
Int. Cl. C22c 39/32, 39/44, 39/54
U.S. Cl. 75—123 5 Claims



A columbium-manganese-silicon alloy consisting essentially of 20 to 30 percent columbium, 15 to 30 percent manganese, 15 to 35 percent silicon, and the balance iron and incidental impurities.

3,445,224
PREPARATION OF IMAGED OFFSET MASTER

Frederick O. Bach, Villa Park, and Ruth E. Ormsbee, River Forest, Ill., assignors to A. B. Dick Company, Niles, Ill., a corporation of Illinois

No Drawing. Filed Apr. 19, 1965, Ser. No. 449,292
Int. Cl. G03g 5/02
U.S. Cl. 96—1 8 Claims

Preparation of an imaged lithographic plate from an electrophotographic master formed with a coating of zinc oxide in a water insoluble, water repellent binder by treatment of the surface, after imaging, with an aqueous solution of a salt or zirconium or titanium.

3,445,225
ELECTROPHOTOGRAPHIC IMAGING PROCESS

Carl Brynko, West Webster, and Oliver A. Ossanna, Webster, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Oct. 1, 1965, Ser. No. 492,067
Int. Cl. G03g 13/22
U.S. Cl. 96—1 4 Claims



This application relates to electrostatic and photoconductographic imaging methods featuring an imaging member comprising from about 2–35% by weight of the open, excited form of a spiropyran in an aromatic organic photoconductive insulating material.

3,445,226
FROST GRAVURE PRINT MASTER

Robert W. Gundlach, Victor, and Lloyd F. Bean, Rochester, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York

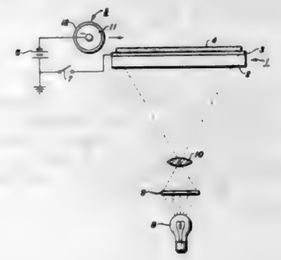
Filed May 24, 1965, Ser. No. 458,282
Int. Cl. G03 13/14, 13/12
U.S. Cl. 96—1.1 14 Claims

This application relates to a method of preparing a printing master wherein a thermoplastically deformable composition is deposited in image configuration upon a supporting substrate. Thereafter, the deposited composition is charged and softened to fuse it to the substrate and to frost the composition without frosting the substrate. The printing master so produced is also described.

3,445,227
ELECTROPHOTOGRAPHIC IMAGING PROCESSES EMPLOYING 2,4-DIAMINO-TRIAZINES AS THE ELECTRICALLY PHOTOSENSITIVE PARTICLES

Lester Weinberger, Rochester, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Apr. 2, 1965, Ser. No. 445,179
Int. Cl. G03g 7/00
U.S. Cl. 96—1.5 20 Claims

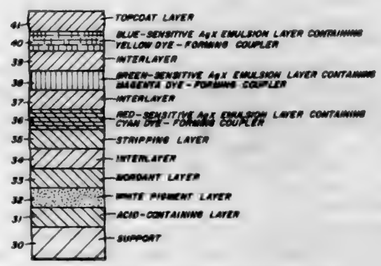


Substituted 2,4-diamino-triazines are used as electrically photosensitive pigment particles in photoelectrophoretic imaging and conventional xerographic processes.

3,445,228
DYE DIFFUSION TRANSFER PROCESS AND ELEMENT

Leo E. Beavers and Walter M. Bush, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed June 14, 1966, Ser. No. 557,511
Int. Cl. G03c 7/00
U.S. Cl. 96—3 13 Claims



In dye diffusion transfer processes utilizing aromatic primary amino color developing agent, the dyes are transferred to a receiving sheet including a support having coated thereon, in the order given, a layer containing non-diffusible acid material; an interlayer containing finely divided white pigment; and, a mordant layer.

3,445,229
PHOTOPOLYMERIZABLE COMPOSITIONS, ELEMENTS, AND PROCESSES

Vincent Joseph Webers, Red Bank, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 17, 1965, Ser. No. 456,486
Int. Cl. G03c 1/68, 5/00
U.S. Cl. 96—28 9 Claims

A photopolymerizable composition comprising

(a) A film-forming thermoplastic organic polymer,

(b) An ethylenically unsaturated organic compound containing at least one terminal ethylenic group having a boiling point above 100° C. at atmospheric pressure, being capable of forming a high polymer by photoinitiated addition polymerization and having a plasticizing action on said thermoplastic organic polymer, and

(c) A monomolecular acid dye as a colorant in association with a basic nitrogen compound having a basicity, K_b, not less than 1×10^{-5}, a molecular weight from about 500 to about 100,000, an equivalent weight from about 40 to 800, and being present initially in the form of a salt with an acid selected from the group consisting of monocarboxylic acids of molecular weight less than 200, soluble half esters of dicarboxylic acids and strong mineral acids;

Constituents (a), (b) and the polymeric dye salt of constituent (c) being present in the respective amounts of 3 to 97, 97 to 3 and 0.1 to 10 parts by weight.

The compositions are useful as photopolymerizable layers and are useful for dry thermal image transfer process giving images free of background stain and of high contrast.

3,445,230
PHOTOCOPYING SYSTEM BASED ON PHOTOSENSITIVE METAL CARBONYLS

Ronald Francis, Arlington, Mass., assignor to Itek Corporation, Lexington, Mass., a corporation of Delaware

No Drawing. Filed Apr. 5, 1965, Ser. No. 445,797
Int. Cl. G03c 5/24
U.S. Cl. 96—48 14 Claims

This disclosure relates to a photographic copy medium comprising a metal carbonyl compound, and to the process of imagewise exposing this copy medium to form a latent image. A permanent image may be formed by contacting this copy medium prior to, at the time of or subsequent to exposure with a chemically reactive image-forming material which reacts upon exposure or upon contact with exposed portions of the copy medium.

3,445,231
ANTI-HALATION LAYER FOR SILVER HALIDE LIGHT-SENSITIVE MATERIALS

Fumihiko Nishio, Daijiro Nishio, Syo Watarai, Yoshihide Hayakawa, Hirotetu Kato, and Hirozo Ueda, Kanagawa, Japan, assignors to Fuji Shashin Film Kabushiki Kaisha, Kanagawa, Japan

No Drawing. Filed Mar. 18, 1966, Ser. No. 535,315
Claims priority, application Japan, Mar. 29, 1965, 40/17,941
Int. Cl. G03c 1/84
U.S. Cl. 96—84 16 Claims

Silver halide light-sensitive material comprising a support, at least one silver halide emulsion layer and an anti-halation layer, said anti-halation layer consisting of a hydrophilic colloid layer having incorporated therein a polymer containing more than 50 percent of 2-methyl-1-vinylamidazole and a dyestuff having an acid group.

3,445,232
PHOTOGRAPHY

John E. Shirey, Wickliffe, Ohio, assignor to Horizons Research Incorporated, a corporation of Ohio

No Drawing. Filed Oct. 21, 1965, Ser. No. 500,321
Int. Cl. G03c 1/72
U.S. Cl. 96—90 16 Claims

The addition of an acid anhydride or a polymer of same, or an aromatic ether to a latent image non-silver photosensitive composition to stabilize said composition against infrared radiation.

3,445,233
PHOTOSENSITIVE COMPOSITION

Lawrence Anthony Cescon, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 16, 1965, Ser. No. 448,839
Int. Cl. G03c 1/54
U.S. Cl. 96—90 8 Claims

Light-sensitive compositions, comprising an essentially colorless oxidizable nitrogen-containing organic color-generator, a photooxidant and a light-sensitive aromatic diazonium compound, which form an intense color when irradiated with light of a wavelength W_1 but which, when irradiated with light of a different wavelength W_2, become insensitive to light of wavelength W_1.

The composition consists of (1) an organic color-generator, (2) a photooxidant, and (3) a light-sensitive diazonium compound which upon exposure to light of wavelength W_2 yields a reducing agent. When irradiated with a pattern of light of wavelength W_1, the organic color-generator and the photooxidant undergo a reaction to form an image corresponding to the pattern of light. Light of a second wavelength W_2 causes the diazonium compound to produce a reducing agent which prevents further color formation by reacting with the photooxidant.

The composition is thus deactivated by light of wavelength W_2, and the image appears against a stable background. The light may be employed in the reverse order to form an image with the novel composition of this invention. A pattern of light of wavelength W_2 produces a latent image by deactivating the composition in the irradiated areas. The latent image is then developed by light of wavelength W_1. Thus, the invention composition provides either a positive or a negative copy depending upon the order in which the wavelengths of light W_1 and W_2 are applied. In each case the image-forming and deactivating processes may be essentially dry.

3,445,234
LEUCO DYE/HEXAARYLBIIMIDAZOLE IMAGE-FORMING COMPOSITION

Lawrence Anthony Cescon and Rolf Dessauer, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of applications Ser. No. 426,421, Jan. 18, 1965, and Ser. No. 234,538, Oct. 31, 1962. This application May 13, 1968, Ser. No. 728,781
Int. Cl. G03c 1/00, 1/72
U.S. Cl. 96—90 20 Claims

An image-forming composition of (1) a dye in its leuco form, and (2) a 2,2′,4,4′,5,5′-hexaarylbiimidazole. The composition can be combined with a binder and coated upon a substrate from a solvent solution. A representative composition is tris(4-diethylamino-o-tolyl)-methane trihydrochloride and 2,2′-bis(o-chlorophenyl)-4,4′,5,5′-tetraphenyl biimidazole.

3,445,235

RHODIUM AND IRIDIUM SALTS AS ANTI-KINKING AGENT IN DIRECT POSITIVE SILVER HALIDE EMULSIONS

Cortland R. Burt, Rochester, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed July 15, 1965, Ser. No. 472,313
Int. Cl. G03c 1/48, 1/36
U.S. Cl. 96—95 15 Claims

Direct positive photographic silver halide emulsion layers containing about 0.00033 gram to 12.0 grams of an amine borane per mole of silver halide, and about 1.5–325 mg. of a salt of rhodium or iridium per mole of silver nitrate used to prepare the silver halide.

3,445,236

PRESSURE CONVERSION OF GREEN TEA

Martin Gurkin, Bardonia, N.Y., assignor to Thomas I. Lipton, Inc., Englewood Cliffs, N.J., a corporation of Delaware

No Drawing. Filed Jan. 7, 1966, Ser. No. 519,196
Int. Cl. A23f 3/00
U.S. Cl. 99—76 12 Claims

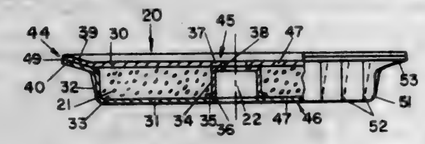
A process of converting constituents of green tea to a black tea which comprises heating said constituents in the presence of water and a gas containing at least about 5% oxygen at a temperature above about 50° C. and under a black tea which comprises heating said constituents in the constituents to react with said oxygen for at least about 7.5 minutes to convert said constituents, the weight of said constituents being at least about 2% of the weight of the water.

3,445,237

PRESHAPED CARTRIDGE FOR, AND METHOD OF PACKAGING, PERCOLATOR GROUND COFFEE

Lester Gidge, 61 Linwood St., Nashua, N.H. 03060

Filed June 28, 1966, Ser. No. 561,221
Int. Cl. B65b 29/02; A23f 1/08
U.S. Cl. 99—77.1 15 Claims



A disposable cartridge containing a predetermined quantity of percolator ground coffee is pre-formed in flat, annular, hollow, cylindrical shape to fit within, and be supported by, the conventional perforated cup of a percolator. The cartridge is provided with a flanged, cylindrical inner wall to define a central opening around the stem of the percolator and at least the upper and lower walls are formed of porous filter paper to retain the coffee aroma while passing liquid during brewing of the coffee. Upper inner and outer flanges are water impermeable to serve as inclined seals and liquid guides. A flat annular coffee pellet may be used in which case the cartridge is expansible to permit the pellet to expand when wetted.

3,445,238

WHEY COMPOSITION FOR MAKING YEAST-RAISED DOUGH PRODUCTS

Ingmar B. Eggen, Downers Grove, and Andrew D. Singleton, Northfield, Ill., assignors to National Dairy Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 19, 1965, Ser. No. 473,214
Int. Cl. A21d 2/00
U.S. Cl. 99—91 7 Claims

A whey product for improving the water absorption capability and handling characteristics of yeast-fermented doughs wherein corn flour is employed as a hydrophilic agent in an amount from 5 to 20 percent by weight of the whey product.

3,445,239

PROCESS FOR PRODUCING BAKED FLOURS

Frank Viault, Jr., Los Angeles, Calif. (270 Portofino Way, Apt. 206, Redondo Beach, Calif. 90277)

Filed Feb. 24, 1965, Ser. No. 434,841
Int. Cl. A21d 2/40
U.S. Cl. 99—93 9 Claims

Production of baked flours by moistening flour with water to form dough particles, heating to obtain partial gelatinization, tumbling in the presence of hot air to dry and bake the resulting particles, grinding, sifting and combining the resulting larger gelatinized particles with additional moist dough particles and repeating the drying and sifting steps and collecting the desired sized baked flour.

3,445,240

METHOD OF TENDERIZING MEAT

Karakian Bedrosian and Donald L. Robach, St. Joseph, Mich., assignors to Whirlpool Corporation, a corporation of Delaware

No Drawing. Filed Nov. 2, 1964, Ser. No. 408,340
Int. Cl. A22c; A23j
U.S. Cl. 99—107 3 Claims

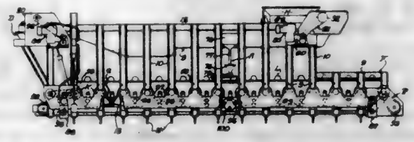
A method of tenderizing meat while storing it in which the meat is chilled under specified controlled conditions for a definite range of time, at a particular temperature and in contact with an atmosphere containing controlled and limited amounts of oxygen and carbon dioxide and at a specified high relative humidity range.

3,445,241

PROCESS FOR PRODUCING PLASTICIZED CHEESE FROM RAW CURD

Nicholas E. Pontecorvo, Tarzana, and Wilfred A. Shaffer, Los Angeles, Calif., assignors, by mesne assignments, to American Foods Machinery Corporation, a corporation of Tennessee

Continuation-in-part of application Ser. No. 489,833, Sept. 24, 1965. This application Dec. 12, 1966, Ser. No. 601,177
Int. Cl. A23c 19/12
U.S. Cl. 99—116 13 Claims



This invention provides a process and apparatus whereby raw cheese curd is first softened by passing it through a hot water bath in a shallow layer on a moving conveyor; then removing the softened curd from the bath and allowing it to settle into an agglomerated curd body; then kneading the softened curd by subjecting it, in the form of a ribbon, to the effect of intermittent compressive rolling by a plurality of rolls while containing the ribbon so as to limit its width of spreading.

3,445,242

GELATIN DESSERT MIX TABLET AND PROCESS

Robert William McDonnell, West Englewood, and Bernard Richard Schaafsma, Chatham, N.J., assignors to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 21, 1965, Ser. No. 500,158
Int. Cl. A23j 1/00, 3/00
U.S. Cl. 99—130 8 Claims

A readily soluble, breakage resistant gelatin dessert mix tablet having an inner core of compressed gelatin dessert mix granules with a moisture content of 1.8 to 3.5% by weight and a hardened outer coating of compressed gelatin dessert mix, produced by (a) adding water to powdered gelatin dessert mix to adjust the moisture content thereof to 1.8 to 3.5%, thereby rendering said powder sticky and causing agglomeration into granules; (b) compressing the moistened mixture at a pressure of 200 to 1200 p.s.i.g.; (c) moistening the surface of the compressed tablet with water and (d) drying the moistened, compressed tablet to remove water to form a surface-hardened tablet.

3,445,243

DESSERT GEL AND COMPOSITION THEREFOR

Arthur L. Moirano, Mountainside, N.J., assignor to Marine Colloids, Inc., Springfield, N.J., a corporation of Delaware

No Drawing. Filed May 16, 1966, Ser. No. 550,150
Int. Cl. A23l 1/04, 1/06
U.S. Cl. 99—131 16 Claims

An aqueous gel system for providing a dessert gel utilizing locust bean gum in combination with conventional potassium-sensitive carrageenan is improved so as to overcome difficulty due to excessive syneresis during storage by the addition of a type of calcium sensitive carrageenan.

3,445,244

SOLID VINEGAR

Peter Paul Noznick, Evanston, and Charles W. Tatter, Homewood, Ill., assignors to Beatrice Foods Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Feb. 16, 1966, Ser. No. 527,729
Int. Cl. C12j 1/00
U.S. Cl. 99—147 9 Claims

Aqueous vinegar is spray dried with a carbohydrate gum or dextrin as an enrobing agent. Gelatin or gluten can also be present.

3,445,245

PROCESS FOR ACETIC ACID FERMENTATION

Heinrich Ebner, Bonn-Ippendorf, Germany, assignor to Heinrich Frings, Bonn, Germany

Filed Nov. 21, 1966, Ser. No. 595,835
Claims priority, application Austria, Dec. 28, 1965, A 11,686/65; Apr. 5, 1966, A 3,217/66
Int. Cl. C12j 1/04
U.S. Cl. 99—147 4 Claims

The production of vinegar of high acetic acid concentration by submerged fermentation of mash of high alcohol content, with continuous uninterrupted supply of oxygen wherein the inoculum or unfiltered vinegar is introduced into the mash so that the acetic acid concentration is 6–9% and the alcohol concentration is 4–7% at the start of fermentation.

3,445,246

POTATO STORAGE METHOD

Robert T. Martin, 1708 East 4800 South, Salt Lake City, Utah 84105

Filed Nov. 1, 1966, Ser. No. 591,300
Int. Cl. A23b 7/00
U.S. Cl. 99—154 15 Claims

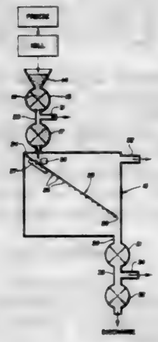
1. A method for accelerating the respiration in harvested potatoes which comprises storing said potatoes at a temperature above 45° Fahrenheit in an atmosphere containing 0.001 to 10 parts per million ozone.

3,445,247

FREEZE DRIED PRODUCT AND PROCESS FOR PRODUCING THE SAME

Francis K. Baerwald, San Rafael, Calif., assignor to Basic Vegetable Products, Inc., San Francisco, Calif.

Continuation-in-part of application Ser. No. 119,709, June 26, 1961. This application Oct. 8, 1964, Ser. No. 405,009
Int. Cl. B01d 1/00; A23f 1/08; F26b 5/06
U.S. Cl. 99—199 4 Claims



1. A process for the rapid continuous production of a finely divided dehydrated food product from a moisture-containing food product while maintaining the flavor, color, and nutritional value of the fresh food product comprising the steps of:

(a) bringing the moisture-containing food product to a sufficiently low temperature so that all the moisture contained therein is frozen,

(b) grinding the frozen food product to a particle size range of about 20 to 100 mesh,

(c) continuously introducing the ground frozen food product into a vacuum chamber,

(d) spreading said ground food product over at least one drying plate in a uniformly thin layer of particle depth,

(e) vibrating said drying plate or plates to move said thin layer of food product over the length of said drying plate or plates;

(f) the combination of the amplitude and frequency of said vibrating and said particle depth causing substantially the entire surface of each particle to engage said drying plate,

(g) said layer being heated to a temperature whereby the frozen moisture in said food product is rapidly vaporized without melting the moisture contained therein and without scorching said food product,

(h) condensing said vaporized moisture, and

(i) continuously removing said dried food product from said vacuum chamber.

3,445,248

METHOD OF PRODUCING A SMOKE-PREPARATION

Kazimier Miler, 87 ul. Gotarda 5 m. 27, Warsaw, Poland, and Zbigniew Kozlowski, 47 ul. Lumumby 10 m. 24, Warsaw, Poland

No Drawing. Filed Apr. 7, 1965, Ser. No. 510,737
Claims priority, application Poland, Apr. 8, 1964, P 104,255
Int. Cl. A23l 3/00; A23b 1/04, 3/04
U.S. Cl. 99—229 1 Claim

Method of obtaining smoke which imparts smell and taste similar to those of conventionally smoke-dried sausages and which is free of carcinogenic compounds and

ballast. Wood is distilled in excess air and smoke therefrom is absorbed in alkaline solution. Undesired compounds are extracted from solution with organic solvent. Carbon dioxide is introduced into the aqueous layer to convert phenolates into phenols which are then also extracted with the organic solvent. The remaining aqueous layer is dissolved in sausage material.

3,445,249

COMPOSITIONS CONTAINING ORGANOTIN METAL CARBOXYLATE ANTIMICROBIALS

John R. Leebrick, Old Lyme, Conn., assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Original application Feb. 11, 1965, Ser. No. 431,996. Divided and this application Oct. 30, 1967, Ser. No. 679,183

Int. Cl. C09k *3/18*; C09d *5/16*

U.S. Cl. 106—15 5 Claims

Plastic, paint, wax and adhesive compositions stabilized against microbial attack by incorporating a biocidal amount of a novel organotin metal carboxylate.

3,445,250

PRECISION METAL CASTING MOLDS COMPRISING ALUMINA COATED SILICA AND A REFRACTORY

Richard E. Preece, Dolton, Ill., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Feb. 28, 1967, Ser. No. 619,143

Int. Cl. B22c *1/18*; C04b *35/14*

U.S. Cl. 106—38.22 7 Claims

A metal resistant mold for use in the precision casting of metals which is derived from a mixture of an alumina coated silica sol and a refractory which is essentially free of uncombined silica.

3,445,251

MOLDING SAND

Michael J. Nevins, Houston, Tex., assignor to National Lead Company, New York, N.Y., a corporation of New Jersey

Filed Apr. 13, 1966, Ser. No. 542,320

Int. Cl. C04b *33/12*; B28b *7/34*

U.S. Cl. 106—38.3 5 Claims

A molding sand composition comprises sand as a major constituent, the binder being bentonite admixed with about one-eighth to about three times its weight of alkaline alkali metal humate, sufficient binder being used to obtain a green compression strength of at least four pounds per square inch. Within this range of humate:bentonite ratios, the green compression strength is very much higher than would be predicted from the individual components.

3,445,252

ALPHA- AND BETA-CRISTOBALITE GLASS-CERAMIC ARTICLES AND METHODS

John F. MacDowell, Painted Post, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

No Drawing. Filed Sept. 14, 1966, Ser. No. 579,204

Int. Cl. C04b *35/14*; C03c *3/22*

U.S. Cl. 106—39 12 Claims

7. A method for making a glass-ceramic body containing a derivative of alpha-cristobalite as the principal crystal form comprising the steps of:

(a) melting a glass-forming composition consisting essentially, by weight on the oxide basis, of 5–40% Al_2O_3, 55–90% SiO_2, and the balance 0.5–3% Li_2O;

(b) simultaneously cooling the melt below the transformation range of said melt and forming a glass shape therefrom;

(c) heating said glass shape to about 850°–950° C. for at least about ¼ hour to attain the desired nucleation;

(d) raising the temperature of said glass shape to about 1000°–1400° C. for a period of time sufficient to attain the desired crystallization; and

(e) cooling said glass shape to room temperature.

3,445,253

PERLITE COMPOSITION, POROUS LOW DENSITY PERLITE STRUCTURE AND METHOD OF MAKING SAME

John M. Lee, Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Aug. 24, 1965, Ser. No. 482,286

Int. Cl. C04b *35/18*

U.S. Cl. 106—40 14 Claims

Low density porous perlite structures, having good strength and insulating properties are prepared from a blend of (1) 45–87 parts of coarse perlite and 55–13 parts of fine perlite particles with (2) two to nine parts by weight of an alkali metal oxide, hydroxide, carbonate or bicarbonate or mixtures thereof, by drying the blend at a temperature not exceeding 400° C. and then further heating to 500–900° C., but below the fusion temperature, for ¼ to 24 hours, under a pressure of 1–200 p.s.i.g.

3,445,254

GLASS FIBERS AND TREATMENT THEREFOR

Ralph L. Tiede, Newark, Ohio, assignor, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission

Continuation-in-part of application Ser. No. 15,073, Mar. 15, 1960. This application Oct. 14, 1964, Ser. No. 403,831

Int. Cl. C03c *3/04, 13/00, 25/00*

U.S. Cl. 106—50 8 Claims

Siliceous fibers containing a network former, a leachable metal oxide, and at least one oxide excitable by fission recoil energy, are formed through conventional fiber forming units, and are post treated by a process of leaching and sintering to obtain a high-temperature resistant fiber comprising a network former and an oxide excitable by fission recoil energy. The fiber may be further enriched by coating it with a salt of the rare earth and subsequently reducing it to the oxide.

3,445,255

FOREHEARTH ADDITION PROCESS FOR VISCOSITY CHANGE

Joseph R. Monks, Jr., Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio

Filed Aug. 25, 1966, Ser. No. 575,179

Int. Cl. C03c *17/04*; C03b *5/13*

U.S. Cl. 106—52 10 Claims

1. In a method of altering the viscosity of soda-lime glass, the steps of preparing a molten soda-lime base glass, flowing the molten base glass through a forehearth, adding to the molten glass in the forehearth an alkaline earth-aluminosilicate frit glass, in an amount sufficient to produce a composite glass having a faster setting rate than said soda-lime base glass.

3,445,256

INFRARED ABSORPTIVE SEALING GLASS

Robert H. Dalton, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

Continuation of application Ser. No. 408,118, Nov. 2, 1964. This application Feb. 5, 1968, Ser. No. 703,180

Int. Cl. C03c *3/24, 27/02*

U.S. Cl. 106—53 3 Claims

This invention relates to infrared absorbing sealing glasses which are suitable for use in encapsulating electronic and lighting devices where radiant energy is utilized as the heat source. These sealing glasses consist essentially of the alkali metal oxides (R_2O), lead oxide (PbO), silicon dioxide (SiO_2), and a small amount of iron oxide (Fe_3O_4), are essentially free of As_2O_3, Sb_2O_3 and metallic Pb, and have a coefficient of thermal expansion between 0° and 300° C. of about 80–95$\times 10^{-7}$° C., and are transparent to visible radiation.

3,445,257

HARDENER FOR WATER GLASS CEMENTS

Albert Hloch and Rudolf Kohlhaas, Frankfurt am Main, and Nikolay Medic and Helmut Nelses, Kelkheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

Filed May 18, 1965, Ser. No. 456,757

Claims priority, application Germany, May 21, 1964, F 42,932

Int. Cl. C09c *1/64, 1/40*; C08k *1/82*

U.S. Cl. 106—84 3 Claims

An improved process has been provided for hardening water glass cements which comprises employing as a hardener a condensed aluminum phosphate prepared by subjecting acid aluminum phosphate consisting essentially of P_2O_5 and Al_2O_3 in a ratio within the range of 1.1 to 3 to a two-stage thermal treatment during the first stage of which, the acid aluminum phosphate is heated to a temperature of less than about 400° C. until the weight of said acid aluminum phosphate remains constant and during the second stage of which, the acid aluminum phosphate is heated to a temperature of less than about 750° C. until the weight of said acid aluminum phosphate remains constant.

3,445,258

BITUMINOUS EMULSIONS

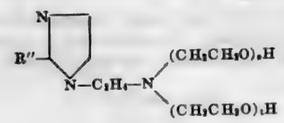
Richard L. Ferm, El Cerrito, and Russell F. Boynton, Orinda, Calif., assignors to Chevron Research Company, a corporation of Delaware

No Drawing. Filed Oct. 19, 1964, Ser. No. 404,930

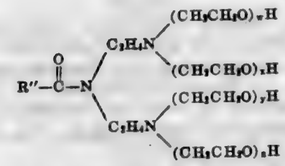
Int. Cl. C08h *13/00*

U.S. Cl. 106—277 3 Claims

1. An oil-in-water type mixing-grade cationic bituminous emulsion comprising from about 50 to about 75% by weight of bitumen; from about 0.15 to about 2.0% by weight of an emulsifier selected from the group consisting of materials corresponding to the formulae:



and



in which R'' is an alkyl radical containing from 7 to 21 carbon atoms, and s and t are integers, the sum of which equals from about 30 to about 60, and w, x, y and z are integers, the sum of which equals from about 30 to about 60; from about 0.10 to about 10.0% by weight of a material which aids coating of mineral aggregate and is selected from the group consisting of nitrogen bases and quaternary salts thereof, said nitrogen bases being the amine oil concentrate recovered overhead in the distillation of gilsonite from about 300 to about 750° F. and having a nitrogen content of from about 1.5 to about 10.0%; and water to make up 100% by weight.

3,445,259

COPRECIPITATED $CaHPO_4$-$2H_2O$ AND $CaSO_4$-$2H_2O$ PIGMENT AND METHOD OF PREPARATION

Arthur M. Brooks, Baltimore, Md., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Continuation-in-part of application Ser. No. 453,512, May 5, 1965. This application May 3, 1968, Ser. No. 726,595

Int. Cl. C09c *1/02*

U.S. Cl. 106—306 17 Claims

A pigment composition comprising coprecipitated calcium hydrogen phosphate dihydrate and calcium sulfate dihydrate, and a process for preparing this composition from calcium hydroxide, sulfuric acid, and phosphoric acid.

3,445,260

METHOD OF COLOR COATING BLOATED AGGREGATE

Philip W. Peter, 128 San Diego, San Clemente, Calif. 92672

No Drawing. Filed June 9, 1966, Ser. No. 556,256

Int. Cl. C03c *17/04*

U.S. Cl. 117—23 8 Claims

A method of coating a bloated ceramic aggregate with a ceramic glaze in which a glazing composition forming a glaze at a temperature below the setting temperature of the aggregate is applied as a coating thereto at an elevated temperature in a range between the bloating temperature of the aggregate and the glazing temperature of the glazing composition.

3,445,261

HEAT-SENSITIVE RECORD MATERIAL

Shashikant G. Talvalkar, Dayton, Ohio, assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

No Drawing. Filed Oct. 23, 1965, Ser. No. 504,080

Int. Cl. B41m *5/22*; C08c *17/16*

U.S. Cl. 117—36.9 1 Claim

There is provided by this invention an improved heat-sensitive record material wherein such material, comprises: (1) a base sheet such as paper; (2) a coating of finely dispersed acidic particles such as a di-phenol, finely dispersed colorless chromogenic particles such as a benzoindolinospiropyran derivative which give color when in liquid contact with an acidic material, and a film-forming polymeric material such as polyvinyl alcohol to act as a matrix for the two color-forming reactants; and optionally; (3) a protective overcoat such as a film of polyvinyl alcohol which may also have sodium carboxy methyl cellulose present in it to give a proper viscosity to the coating slurry for ease in machine application; is made resistant to pick-off of the record sheet surface and freeze-sticking of the record sheet to the printing head when the record material is used in conjunction with a rapidly heated and cooled printing head, particularly one of the planographic class. The improvement consists of providing the heat-sensitive record material with a lubricating overcoat comprising a film of hydrophilic, polymeric material, such as polyvinyl alcohol (with or without added sodium carboxy methyl cellulose), having dispersed therein to the extent of about 2% fine particles of a lubricating or nontacky wax, melting about 140° C.; optionally a primer coat of the same composition; and finally as a further option an added dispersion of calcium stearate in the coating or layer which bears the color-forming coreactants.

3,445,262

METHOD FOR LINING CONTAINER CLOSURES

Eugene Greck, Westfield, and George Kokinda, Clark, N.J., assignors to American Flange & Manufacturing Co. Inc., New York, N.Y., a corporation of Delaware

Filed Apr. 1, 1965, Ser. No. 444,638
Int. Cl. B05b 7/16; B44d 1/02; B05c 9/14
U.S. Cl. 117—37 1 Claim

A method and apparatus for gasketing closure members by the application of a semiliquid lining compound to the closure member by means of a heated metering nozzle. After receiving the lining compound the closures are conveyed through a heated curing oven which sets the compound into a permanent gasket.

3,445,263

PRESSURE SENSITIVE ADHESIVE TAPE

Bradley B. Alexander, Wilmington, Del., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 24, 1966, Ser. No. 552,417
Int. Cl. B44d 1/092
U.S. Cl. 117—47 5 Claims

Pressure sensitive adhesive tapes are prepared by hot-melt coating of films or ribbons of high density polyethylene having molecular weight of at least 1,000,000. A preferred pressure sensitive adhesive is based on ethylene-vinyl acetate copolymer and hydrogenated wood rosin esters.

3,445,264

METHOD AND COMPOSITION FOR TREATING THE SURFACE OF POLYMERIC ARTICLES TO IMPROVE ADHESION

Robert S. Haines, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

No Drawing. Filed June 24, 1965, Ser. No. 466,852
Int. Cl. B44d 1/20
U.S. Cl. 117—47 9 Claims

Surface treatment of polymeric articles to activate them and render them more adherent toward coating compositions is accomplished by exposing the surface of the polymeric article to an activating solution consisting of alkaline metals, alkaline earth metals, hydrides, or amides of alkaline metals or alkaline earth metals, in a dialkyl sulfoxide solvent vehicle.

3,445,265

COATING WOOD OR METAL WITH ORGANOPOLYSILOXANE RESIN

Roy Bentley, Largs, and John Craig, Paisley, Scotland, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Jan. 5, 1966, Ser. No. 518,798
Claims priority, application Great Britain, Jan. 11, 1965, 1,203/65
Int. Cl. B32b 15/08, 21/08; B44d 1/092
U.S. Cl. 117—49 18 Claims

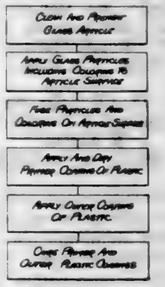
There is provided a process for treating surfaces of wood or metal by applying to the surface an aminobutanol or a salt thereof, and then applying to the surface an organopolysiloxane resin composition and thereafter curing or allowing the resin to cure to an insoluble infusible state. The product of the process is characterized by having coated on the wood or metal surface an organopolysiloxane resin composition cured to the insoluble infusible state, the surface having applied thereto prior to the application of the organopolysiloxane resin composition an aminobutanol or a salt thereof.

3,445,266

PRODUCTION OF DECORATED, POLYTETRAFLUOROETHYLENE COATED GLASS COOKING VESSEL

Lewis J. Wittman, Lancaster, Ohio, assignor to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware

Filed Oct. 5, 1965, Ser. No. 493,045
Int. Cl. C03c 17/26
U.S. Cl. 117—70 5 Claims



A method of simultaneously decorating and applying a plastic coating such as Teflon to a glass surface of a transparent or translucent cooking dish or other glass article. Small colored glass particles are first applied to the glass surface and these are partially fused to form a rough surface. In place of colored frit, a mixture of colored enamel particles and plain frit may be used. The plastic coating is applied to the rough frit decorated surface as a liquid and is hardened in place.

3,445,267

TREATMENT OF GLASS WITH SILSESQUIOXANES TO IMPROVE DURABILITY OF SUBSEQUENT SILICONE TREATMENTS TO WASHING

Douglas K. Layne, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed Jan. 12, 1966, Ser. No. 520,079
Int. Cl. C03c 17/30
U.S. Cl. 117—72 10 Claims

A process is disclosed for the treatment of glass with a silsesquioxane whereby the durability of subsequently applied silicone treatments to washing is improved.

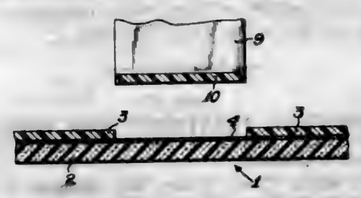
3,445,268

LAMINAR SHEET MATERIAL FOR MAKING NEGATIVE TRANSPARENCIES

Heinrich Heichlinger, 10 Leonrodstrasse, Munich 19, Germany

Filed Oct. 26, 1964, Ser. No. 406,512
Claims priority, application Germany, Feb. 27, 1964, H 51,897
Int. Cl. B44d 1/14; B41c 1/06
U.S. Cl. 117—76 4 Claims

A laminar transparency is prepared by contacting the raised lettering in a printing form under pressure with a laminar sheet material having a transparent carrier and an exposed layer of solvent-vapor activated adhesive composition including coloring material at least partly opaque to a portion of the light spectrum. When the form is moved away from the sheet material, a frangible separating layer interposed between the carrier and the activated adhesive composition yields, and a replica of the lettering



is lifted out of the colored composition, leaving a transparent opening.

3,445,269

ABRASION RESISTANT GLASS ARTICLE AND METHOD FOR PRODUCING SAME

Howard G. Braaz, Jr., Toledo, Ohio, Walter J. Schlientz, Rome, Ga., and Bradley E. Wiens, Toledo, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio

No Drawing. Filed Dec. 7, 1965, Ser. No. 512,238
Int. Cl. C03c 17/06
U.S. Cl. 117—88 8 Claims

The scratch resistance of glass surfaces is improved by the application of a pyrolyzable stannic compound to form a tenaciously adherent tin oxide coating, and then coating with an emulsion of a fatty acid triester of glycerol.

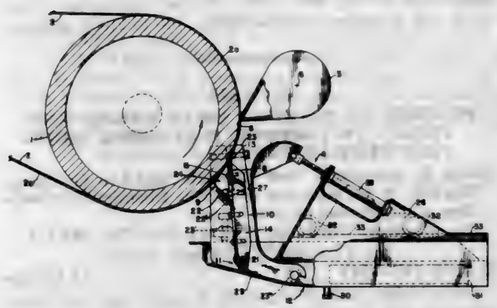
The instant invention relates to a process for improving the scratch resistance of glass surfaces, and particularly the exterior surfaces of glassware such as jars, bottles, tumblers and the like which are subject to abrasive contact with others in the course of manufacturing, packaging, filling and shipping. The invention further relates to improved abrasion resistant glass articles of commerce produced by the aforesaid method.

3,445,270

AIR KNIFE METERING APPARATUS AND METHOD

Flemming L. Lorck, Plymouth Meeting, Pa., assignor to Oxford Paper Company, Rumford, Maine, a corporation of Maine

Filed May 12, 1965, Ser. No. 455,119
Int. Cl. B05c 11/06
U.S. Cl. 117—102 10 Claims



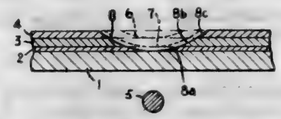
A metering system for metering the thickness of a web coating, the system including an air knife doctor for directing a metering stream of air against the coating to remove the excess therefrom and a series of baffles located adjacent to the coated web on the downstream side of the air knife. The stream of air laden with excess coating is first separated into primary and secondary paths and thereafter the laden air contained in the secondary path is drawn into the primary path and through an exhaust passage with the laden air of the primary path.

3,445,271

SIMULTANEOUS VAPOR PLATING OF PLURAL SUBSTANCES

Arne Jensen, Havnbjerg, Als, Denmark, assignor to Danfoss A/S, Nordborg, Denmark, a company of Denmark

Filed Jan. 18, 1966, Ser. No. 521,253
Claims priority, application Germany, Jan. 26, 1965, D 46,355
Int. Cl. C23c 13/02
U.S. Cl. 117—106 5 Claims



A method for vapor plating as a homogeneous mixture a plurality of substances each having a different vaporization temperature onto a base surface. Layers of substances to be plated are disposed on a carrying surface and heat is applied to only part of the layers to vaporize the layers consecutively and simultaneously establishing relative motion between the carrying surface and the heat source. The part of the layers being vaporized continuously changes position and this part is juxtapositioned to the base surface so that the substances are deposited on the base surface as a homogeneous mixture.

3,445,272

POROUS ELASTOMERIC COATING

Charles G. Newton, Jr., Beverly, Mass., assignor to United Shoe Machinery Corporation, Flemington, N.J., and Boston, Mass., a corporation of New Jersey

No Drawing. Filed Dec. 18, 1964, Ser. No. 419,576
Int. Cl. C23c 13/04; C09d 5/00, 3/72
U.S. Cl. 117—119 17 Claims

Coating, coating process and coating composition in which the composition includes a latex of elastomeric polymer in which are suspended droplets of a water-immiscible volatile organic liquid to form the coating, the composition is spread on a surface, the polymeric material is coalesced and the water or organic liquid are removed leaving pores where the organic liquid had been.

3,445,273

METHOD OF SEALING FIBER OPTIC DEVICES

Terence J. Gallagher, Mount Prospect, Ill., assignor, by mesne assignments, to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio

Filed June 17, 1965, Ser. No. 464,778
Int. Cl. C03c 25/02; C23c 13/00
U.S. Cl. 117—119 3 Claims

A method for sealing voids and fissures penetrating through a fiber optic plate. One face of the fiber optic plate is covered with a filler in a fluid condiiton. A pressure differential is applied across the fiber optic plate so as to force a portion of the filler into the voids and fis-

sures. The filler is then hardened to provide a sealing residue in said voids and fissures. A devitrifiable glass is used as the filler and is devitrified in situ.

3,445,274

FLUOROACID DERIVATIVES OF TRISAZINDINYL PHOSPHINE OXIDES AND SULFIDES AND METHOD OF COATING SURFACE HAVING ACTIVE HYDROGEN THEREWITH

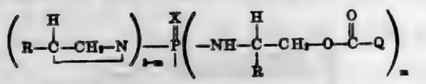
Domenick Donald Gagliardi, East Greenwich, R.I., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 288,490, June 17, 1963. This application Nov. 2, 1966, Ser. No. 591,411

Int. Cl. D06m *13/48*

U.S. Cl. 117—121 11 Claims

1. As a new composition of matter fluoroalkanoic acid derivatives of aziridinyl phosphine oxide and sulfide having a composition corresponding to the formula,



where R is selected from the group consisting of hydrogen and CH_3, N is nitrogen, P is phosphorus, X is selected from the group consisting of oxygen and sulfur, *m* is 1, 2 or 3, Q is the alkyl group of an alkanoic acid having 4 to 22 carbon atoms having a terminal group selected from CF_3 and CHF_2 groups and having about 70 to about 100 percent of the hydrogens other than the carboxyl hydrogen replaced with fluorine atoms.

7. A method of coating a substrate which comprises immersing said substrate in a solution of a tris-aziridinyl derivative selected from the group consisting of phosphine oxide and phosphine sulfides, adding fluoroalkanoic acid having 4–22 carbon atoms, a terminal fluoromethyl group and 70 to 100 percent of the hydrogen atoms other than carboxyl-hydrogen replaced with fluorine atoms, holding the mixture at a temperature in the range of 65° to 100° for time inversely as the temperature and about one hour at 75° F. and obtaining a substrate having a coating of fluoroalkanoic acid derivative.

3,445,275

GLASS CONTAINER COATED WITH A LUBRICATING FILM COMPRISING CARNAUBA WAX AND POLYVINYL ALCOHOL

Burton S. Bogart, Forest Hills, N.Y., assignor to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware

No Drawing. Filed May 25, 1965, Ser. No. 458,762

Int. Cl. C03c *17/28, 23/00, 17/00*

U.S. Cl. 117—124 8 Claims

A glass container coated with a lubricating film that is formed by evaporation of the water from an aqueous dispersion of carnauba wax and polyvinyl alcohol in a dispersing medium comprising an alkali or alkanolamine salt of a long chain fatty acid.

3,445,276

TEXTILE MATERIALS COATED WITH HYDROLYTICALLY STABLE SILOXANE-OXYALKYLENE BLOCK COPOLYMERS CONTAINING SiH

Joseph E. Pikula, Depew, N.Y., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 168,525, Jan. 24, 1962. This application Aug. 4, 1965, Ser. No. 477,323

Int. Cl. D06m; C09k *3/18*; C08f *47/22*

U.S. Cl. 117—138.8 11 Claims

This invention relates to organic textile materials coated with certain hydrolytically stable siloxane-oxyalkylene block copolymers. The copolymers contain at least one siloxane unit containing ≡SiH for every 14 siloxane units present in the copolymers and at least one oxyalkylene block containing at least two oxyalkylene groups. The coatings are durable and impart water repellency and antistatic properties to the textile materials.

3,445,277

DIFFERENTIAL TREATMENT FOR IMPROVING THE SHAPE HOLDING PROPERTIES OF CELLULOSIC FABRICS

Leonard Smith, Chevy Chase, Md., assignor to Cotton Producers Institute, Memphis, Tenn., a non-profit corporation of Tennessee

No Drawing. Filed Dec. 22, 1964, Ser. No. 420,437

Int. Cl. B44d *1/08, 1/44*; C09d *3/64*

U.S. Cl. 117—139.4 12 Claims

A shape holding cellulosic fabric having high abrasion resistance is produced by treating it preferentially on one side; as by coating one side of the fabric with a thickened mixture of creaseproofing agent and catalyst and thereafter curing it, or by impregnating it with a liquid containing a curable creaseproofing agent and thereafter selectively poisoning the creaseproofing agent on one side of the fabric prior to curing, or by impregnating the fabric with a liquid containing a curable creaseproofing agent and thereafter flash drying the resulting wet impregnated fabric by selectively contacting one side thereof with the heated surface. The invention causes the yarns composing the fabric to have along their length portions treated with a creaseproofing agent and ther portions relatively free from creaseproofing agent. This results in a shape holding fabric which has a higher abrasion resistance than similar shape holding fabrics whose yarns contain creaseproofing agent throughout.

3,445,278

CHLOROSILYL SUBSTITUTED POLYMERS AS WATERPROOFING AGENTS

Garth M. Stanton, Pinole, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed Nov. 15, 1965, Ser. No. 507,647

Int. Cl. C08h *19/02*; B44d *1/28*

U.S. Cl. 117—141 2 Claims

The invention is directed to novel polymeric silanes and their use for water proofing. The fabric to be waterproofed is impregnated with a polysilyl chloride substituted addition polymer of at least about 50,000 molecular weight and having about one silylchloro group per about 10 to 100 monomers and per about 100 to 2,000 carbons.

3,445,279

PROCESS OF MAKING URON RESINS AND PRODUCTS THEREOF INCLUDING MODIFIED TEXTILE FABRICS

David H. Abrahams, New Rochelle, and Leo Goldberg, Bayside, N.Y., assignors to Dexter Chemical Corporation, a corporation of New York

No Drawing. Filed July 9, 1964, Ser. No. 381,511

Int. Cl. C08g *9/24*; D06m *15/58*

U.S. Cl. 117—143 15 Claims

Uron resins, made by reacting at least 4 mols of formaldehyde per mole of urea, dehydrating the resulting product to methylol uron and etherifying the methylol uron to alkoxymethyl uron, are improved as textile finishing agents by reacting controlled proportions of excess formaldehyde for at least one-half hour with the resin material after the dehydration step and before the etherification step.

3,445,280

SURFACE TREATMENT OF SEMICONDUCTOR DEVICE

Takashi Tokuyama and Keijiro Uehara, Tokyo, Japan, assignors to Hitachi, Ltd., Tokyo, Japan

Filed Aug. 9, 1965, Ser. No. 478,113

Claims priority, application Japan, Aug. 8, 1964, 39/45,318

Int. Cl. H01b *1/00*; C23c *13/00*

U.S. Cl. 117—215 6 Claims

The present disclosure is directed to a method of surface treating a semiconductor device which comprises the steps of depositing a first silicon dioxide film with a thickness of about 2,000 A. or less on the surface of said semiconductor device by thermally decomposing organo-oxysilane, heat-treating said semiconductor device containing said first silicon dioxide film in a high vacuum of at least about 1×10^{-3} mm. Hg or more at a temperature of about 500 to 800° C. in order to substantially remove all of the absorbed gases produced by said thermal decomposition of organo-oxysilane, and after said vacuum-heat treatment, depositing a second silicon dioxide film on said first silicon dioxide film by thermal decomposition of organo-oxysilane.

3,445,281

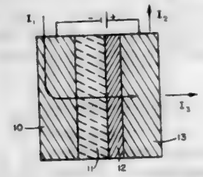
THIN-FILM COLD CATHODE

Donald L. Sullivan, Concord, Mass., assignor to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts

Filed June 22, 1964, Ser. No. 376,852

Int. Cl. B32b *15/04, 15/20*; H01j *1/30*

U.S. Cl. 117—217 7 Claims



A thin film tunneling cold cathode formed as an assembly of contacting layers in the following order: a first layer of a conductive metal such as aluminum capable of serving as an electron source, a layer of dielectric material typically aluminum oxide, a very thin layer of a high-work functional material such as platinum and a layer of another conductive metal such as gold.

3,445,282

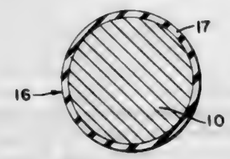
INSULATED ELECTRICAL CONDUCTORS AND THE METHOD FOR PRODUCING THE SAME

Emil H. Olson, North Muskegon, and William W. Ulmer and Richard L. Christensen, Muskegon, Mich., assignors to Anaconda Wire and Cable Company, New York, N.Y., a corporation of Delaware

Filed Oct. 5, 1964, Ser. No. 402,690

Int. Cl. B44d *1/42*

U.S. Cl. 117—232 23 Claims



A 100% solid epoxy composition containing rigid and flexible epoxy resins is used to prepare magnet wire. The coated wire is cured at a high temperature above the flashing point of the epoxy resins for a duration less than required for the degradation of the coating.

3,445,283

PROCESS FOR THE PREPARATION OF INSTANTANEOUSLY SOLUBLE, POROUS GRANULAR SUGAR

Minoru Amano, Toru Nishihashi, Shozo Shinada, and Yushi Ito, Tokyo, Japan, assignors to Nissin Sugar Mfg. Co., Ltd., Tokyo, Japan, a corporation of Japan

No Drawing. Filed Dec. 13, 1965, Ser. No. 513,604

Claims priority, application Japan, Dec. 22, 1964, 39/72,070

Int. Cl. C13f *1/04*

U.S. Cl. 127—58 12 Claims

A process for the preparation of instantaneously soluble, porous granular sugar having a uniform particle size which comprises cooling with agitation a sugar solution heated to a temperature within the range of 110–130° C. to crystallize the sugar in the form of micro-size fine sugar crystals; uniformly mixing the mixture of sugar crystals and uncrystallized sugar solution with 40 to 100% by weight of a hydrophilic liquid which does not dissolve sugar and which can be easily recovered by evaporation so as to form thin film coatings composed of the organic liquid and uncrystallized sugar solution on the surfaces of the sugar crystals; and thereafter separating the coated crystals from the the excess liquid of the system and granulating the same.

3,445,284

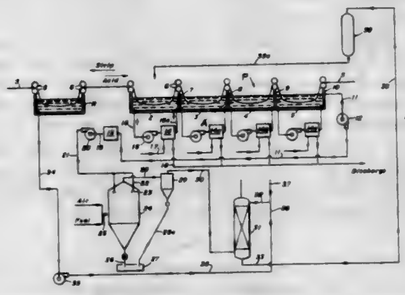
PROCESS FOR PICKLING OF STEEL STRIP AND REGENERATION OF THE CONTACT ACID

Melville W. Robinson, Jr., Beaver, Pa., Clarence Steelman, Jr., Wintersville, Ohio, and Enoch Perkins, Jr., Pittsburgh, Pa., assignors to Dravo Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Continuation-in-part of application Ser. No. 324,479, Nov. 18, 1963, now Patent No. 3,310,435, dated Mar. 21, 1967. This application Sept. 17, 1965, Ser. No. 488,031

Int. Cl. C23g *1/02, 3/02*

U.S. Cl. 134—3 3 Claims

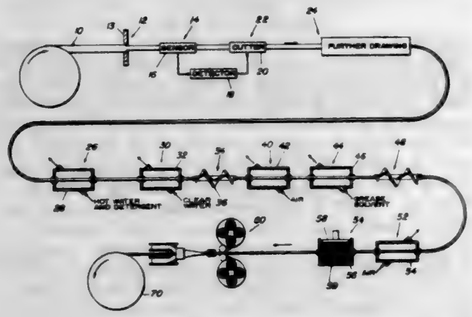


Process for pickling steel wherein continuous lengths of metal are moved through a succession of interconnected compartments and then into a separate rinse area wherein hydrochloric acid pickling solution flows through the several compartments countercurrent to the travel of the metal. The spent solution from the last compartment in the series is withdrawn and processed to regenerate hydrochloric acid solution and recover ferric oxide, and the regenerated hydrochloric acid solution is returned to the first compartment of the series at a constant 20% strength. The solution in each compartment is separately heated by indirect heat, so that optimum temperatures may be maintained in each compartment.

3,445,285
METHOD AND APPARATUS FOR CLEANING WELDING WIRE

Thomas D. Nast, White Plains, N.Y., and Richard G. Wooldridge, Glastonbury, Conn., assignors to All-State Welding Alloys Co., Inc., White Plains, N.Y., a corporation of New York

Original application Sept. 27, 1963, Ser. No. 312,221, now Patent No. 3,210,836, dated Oct. 12, 1965. Divided and this application Jan. 21, 1965, Ser. No. 435,771
Int. Cl. B08b *7/04, 3/10*
U.S. Cl. 134—9 10 Claims



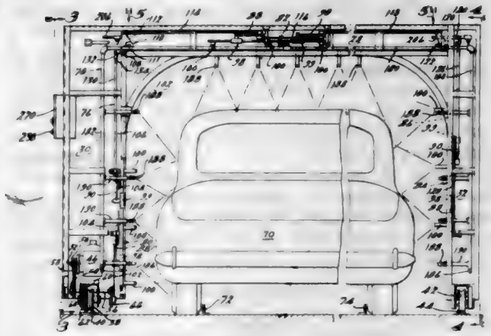
Method and apparatus for processing welding wire, particularly for cleaning the surface of the same wherein the wire is washed with a detergent solution, rinsed with an inert liquid, wiped, dried in an inert gas stream, washed with a grease solvent solution, wiped and subjected to another inert gas stream and again wiped, this last wiping being effected with a pair of fabric tapes moving both axially of the wire and circumferentially thereof. The fabric tapes are moved in engagement with opposite peripheral portions of the wire in a direction opposite the direction in which the wire is being moved through the wiping station and the fabric tapes are twisted during their engagement with the welding wire. A first pair of reels is rotatably mounted about a first pair of parallel axes and a second pair of reels is rotatably mounted about a second pair of parallel axes, the second pair of axes being disposed substantially perpendicularly to the first pair of axes. A first tape extends between one reel of the first pair and one reel of the second pair and a second tape extends between the other reel of the first pair and the other reel of the second pair. Guide means maintain the first and second tapes in engagement with one another between spaced points located between the first and second pairs of reels and at least one of the reels is driven.

3,445,286
CARWASH PROCESS

Courtland N. Smith, Jr., Glen Ridge, and Charles W. Knight, Riverton, N.J., assignors to Sherman Car Wash Equipment Co., Palmyra, N.J., a corporation of New Jersey

Original application Oct. 5, 1964, Ser. No. 401,434, now Patent No. 3,288,109, dated Nov. 29, 1966. Divided and this application Sept. 26, 1966, Ser. No. 581,828
Int. Cl. B08b *3/02*
U.S. Cl. 134—32 8 Claims

1. In the process of washing a vehicle the steps comprising directing a plurality of streams of heated detergent solution at relatively high pressure against the sides and top surfaces of the vehicle while effecting relative movement between said streams and vehicle longitudinally of the latter, each of said streams having a fixed direction generally normal to a plane generally paralleling the side or top of the vehicle containing the surface against which it is directed, during said relative movement substantially simultaneously moving certain of said fixed streams in a bank up and down relative to the sides of the vehicle and other of said streams in a bank back and forth transversely across the longitudinal top surface of the vehicle; said streams in each bank being of generally fan-like

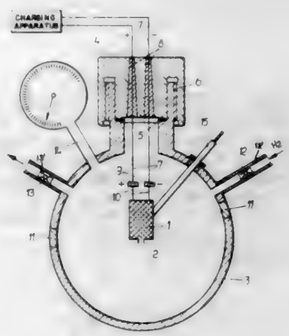


section, and certain of said fan-like streams during said movement in a bank impinging on a vehicle side or top surface portion also treated by an adjacent fan-like stream in the same bank so as to effect an overlap of the said surface portion treated by adjacent streams, and the apparent points of intersection of said fan-like streams in effecting said overlap generally defining a substantially vertical plane.

3,445,287
PRODUCTION OF STORAGE BATTERIES

Karl Schölzel, Bad Soden, Taunus, Germany, assignor to Werner Greutert, Baden, Switzerland

Filed Apr. 8, 1966, Ser. No. 541,322
Claims priority, application Germany, Apr. 8, 1965, Sch 36,851; Sept. 3, 1965, Sch 37,673
Int. Cl. H01m *9/00, 11/00*
U.S. Cl. 136—6 15 Claims



A method for preventing the creation of overpressures in a sealed storage battery when the battery is subjected to high charging currents, this being achieved by, before sealing the battery, concentrating the electrolyte solution by subjecting the battery to the desired high charging current level until gas no longer escapes from the battery, and then sealing the battery, whereby the interior of the battery will not be subjected to overpressures whenever the charging current does not exceed the desired level.

3,445,288
ALUMINUM ANODE ELECTRICAL ENERGY STORAGE DEVICE

Edward S. Buzzelli, Cleveland, Ohio, assignor to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

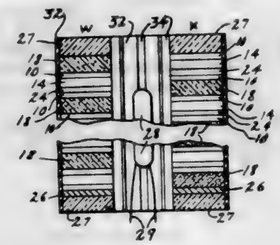
Filed Jan. 3, 1966, Ser. No. 518,473
Int. Cl. H01m *43/00*
U.S. Cl. 136—6 10 Claims

An electrical energy storage device is disclosed. It comprises a fused halide electrolyte, a negative electrode of aluminum or aluminum-lithium alloy, and an activated positive electrode.

3,445,289
BATTERY

Henry Norman Nerwin, Jr., Chicago, Ill., Willard S. Leadbeter, Lanham, Md., and John S. Hilten, Arlington, Va., assignors to the United States of America as represented by the Secretary of the Army

Filed June 27, 1956, Ser. No. 594,336
Int. Cl. H01m *17/06*
U.S. Cl. 136—83 1 Claim



1. A thermal battery comprising in combination: a first plurality of bimetal semi-washers composed of a first metal and having a quadrant surface covered with a second metal of different electrothermal characteristics, each of said first semi-washers being offset in the center; a second plurality of bimetallic semi-washers having the same construction as said first semi-washers except that said second semi-washers are left-handed with respect to said first semi-washers; a plurality of semi-washer heat pads made up of a mixture of asbestos and a combustible material; a plurality of quadrant electrolyte elements; said first and second semi-washers being stacked with said electrolyte elements and said semi-washer heat pads so as to form a cylinder having two halves, a first half of the cylinder containing first and second quadrants and forming a first series of cells which alternate between said first and second quadrants, and a second half of the cylinder containing third and fourth quadrants and forming a second series of cells which alternate between said third and fourth quadrants, each cell being made up of a quadrant electrolyte element placed between a quadrant of first metal and a quadrant of second metal, said semi-washer heat pads being placed between opposite first metal surfaces of said semi-washers so as to be alternately stacked with said cells; means for connecting said first and second series of cells in series; primer means placed within the cylindrical tube formed in the center of said cylinder by said semi-washers, said primer igniting said heat pads when said primer is fired; means for firing said primer; and silicon rubber means coating said cylinder to hold said cylinder together, insulate said cells, and prevent said electrolyte from leaking.

3,445,290
SILVER AND COPPER THIOCYANATE PRIMARY CELLS

William E. Elliott, Elm Grove, and James R. Huff, Milwaukee, Wis., assignor to Globe Union Inc., Milwaukee, Wis., a corporation of Delaware

No Drawing. Filed Dec. 12, 1966, Ser. No. 600,723
Int. Cl. H01m *17/02*
U.S. Cl. 136—83 10 Claims

Electrochemical primary cells using solid silver or copper thiocyanate cathodes and a nonaqueous electrolyte system including an organic electrolyte solvent and an electrolyte solute compatible with the cathodes and anodes of the cells. The anodes are solid alkali or alkaline earth metals such as lithium, potassium, sodium, calcium or magnesium.

3,445,291
THERMAL BATTERY WITH TEMPERATURE INDICATING POTTING COMPOSITION

Leonard A. Stein, Baltimore, Md., assignor to Catalyst Research Corporation, Baltimore, Md., a corporation of Maryland

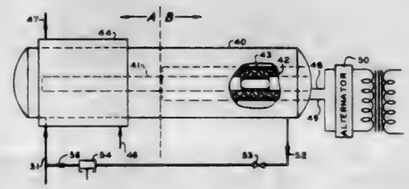
No Drawing. Filed July 14, 1966, Ser. No. 565,078
Int. Cl. H01m *31/04*
U.S. Cl. 136—83 1 Claim

A transparent potting composition that changes color at elevated temperatures has between about 0.5 and 1.5% of an inert salt that changes color at the elevated temperature dispersed in a transparent synthetic resin. Thermal batteries are encapsulated in the potting compositions and the color of the potting composition indicates whether the battery has been used.

3,445,292
THERMALLY REGENERABLE HYDROGEN HALIDE FUEL CELL

William V. Childs, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Feb. 10, 1964, Ser. No. 343,634
Int. Cl. H01m *27/06*
U.S. Cl. 136—86 5 Claims



An apparatus for an integral, thermally-regenerable fuel cell having a hollow, cylindrical, hydrogen-permeable, membrane centrally positioned in a vessel; a portion of the membrane being surrounded by an electrolytic material and metallic cathode for an electrochemical reaction between hydrogen and a halogen to produce electrical energy. A heating means is provided for heating one zone of the vessel to dissociate the hydrogen halide contained therein into hydrogen and halogen for the fuel and oxidant necessary for the electrochemical reaction.

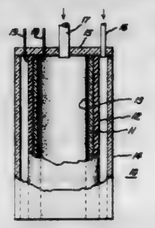
3,445,293
ELECTRICAL DEVICE COMPRISING SOLID ELECTROLYTE AND COMPOSITE GAS-IMPERVIOUS ELECTRODE

Donald W. White, Burnt Hills, N.Y., assignor to General Electric Company, a corporation of New York

Filed Jan. 4, 1965, Ser. No. 422,987
Int. Cl. H01m *27/10*
U.S. Cl. 136—86 4 Claims

A composite gas-impervious electrode for a high temperature electrical device. The composite electrode com-

prises a porous solid oxygen-ion conducting metal oxide matrix, the interstices (or pores) of which are occupied by metallic silver rendering the composite gas-impervious. With this construction molten metallic silver is made available during operation at temperatures over 960.5° C.



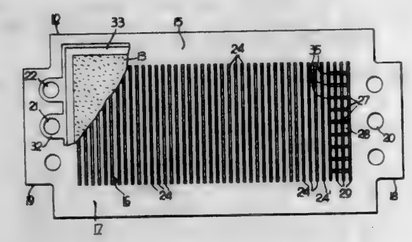
for the transport of gas therethrough, but the area of molten silver exposed at the outer surface of the composite electrode is greatly reduced in comparison to prior art molten silver electrodes for fuel cells, for example, and considerably less silver is required for comparable electrode areas.

3,445,294

ELECTRODE BACKING PLATE FOR FUEL CELLS

Ronald James Leonard, Milwaukee, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

Filed Oct. 20, 1965, Ser. No. 498,309
Int. Cl. H01m *27/12*
U.S. Cl. 136—86 **5 Claims**



1. A fuel cell backing plate assembly comprising in combination a plate having a first and a second major surface; a gas distribution means defined within each major surface; a fuel cell electrode mounted on said first major surface; a capillary matrix mounted on said second major surface; means for supplying reactant gas to the gas distribution means defined within the second major surface for contact with the capillary matrix prior to its contacting said fuel cell electrode; and means for diverting said reactant gas after contacting said capillary matrix onto the gas distribution means defined in the first major surface and outlet means for removing gas from said gas distribution means.

3,445,295

AMMONIA BATTERY

Holley R. Smith, North Wales, and Bernard P. Sykes, West Chester, Pa., assignors, by mesne assignments, to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed Sept. 30, 1966, Ser. No. 583,346
Int. Cl. H01m *17/00*
U.S. Cl. 136—90 **5 Claims**

A deferred-action electro-chemical battery wherein inter-cell leakage is minimized. The individual cells of the battery are sealed from each other so that no electrolyte flow between the cells is possible except via a central stem through which the electrolyte is delivered to the cells for energizing the battery.

3,445,296

METHOD OF MAKING SILVER CHLORIDE ELECTRODE HAVING A METALLIC SILVER COATING ON AT LEAST PART OF EACH PARTICLE

Hidekazu Abe, Kyoto, Hiromichi Shibata, Hirakata-shi, and Teruo Ito, Kyoto, Japan, assignors to Nihon Denchi Kabushiki Kaisha, Kyoto, Japan, a Japanese company

Filed Mar. 29, 1967, Ser. No. 626,850
Claims priority, application Japan, July 15, 1966, 41/46,402
Int. Cl. H01m *13/08*
U.S. Cl. 136—120 **5 Claims**

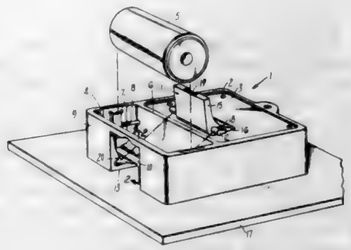
This invention relates to an improved silver chloride electrode and method of making such electrode by treating silver chloride particles to form a metallic silver coating on at least part of each particle and then compressing the powder to form a hardened electrode. By chemically reducing the silver chloride, a porous metallic layer is formed on part or all of the surface of each particle of the powder. The resultant silver chloride electrode has a relatively low internal resistance and thus provides a more efficient battery capable of supplying increased current.

3,445,297

BATTERY EJECTOR FOR PORTABLE APPLIANCES

Philip A. Sidell, West Hartford, Conn., assignor to The Ingraham Company, Bristol, Conn., a corporation of Connecticut

Filed June 5, 1967, Ser. No. 643,467
Int. Cl. H01m *1/04*; G04c *3/00*; F21l *15/08*
U.S. Cl. 136—173 **6 Claims**



A combination housing and battery ejector for a battery powered clock including a finger operated pivoted wall portion having a laterally extending arm disposed below the battery to eject the battery upwardly out of the housing when the wall portion is pivoted outwardly.

3,445,298

CHEMICAL TREATMENT OF METAL SURFACE TO IMPROVE PAINT ADHERENCE

Robert Rucoba, East Chicago, and William C. Sievert, Chesterton, Ind., assignors to Inland Steel Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed July 21, 1966, Ser. No. 566,762
Int. Cl. C23f *7/26*; C23c *3/00*
U.S. Cl. 148—6.16 **4 Claims**

1. A method of continuous in-line treatment of a surface of an endless strip of metal having a surface of a metal susceptible to damage by white rust corrosion which comprises; contacting a surface of said strip while preheated to a temperature between about 100° F. and 200° F. and moving continuously past a treating zone with a liquid treating composition having as an essential active ingredient between about 0.1% and about 30% by weight trialkyl phosphate having from 3 to 8 carbon atoms per alkyl group in combination with between about 0.1% and 10% by weight of a water soluble chromate and having at least a portion of said chromate solubilized by said trialkyl phosphate to form a solution of said chromate in said trialkyl phosphate, said liquid treating composition having a temperature between about 100° F. and 150° F. and having a pH between about pH 2.5 and 3.5, continuously forming on the surface of said metal strip as said strip moves past said treating zone a uniform wet film containing said solution of said chromate in said phosphate, and continuously drying said wet film to form a residual dry film containing chromium in an amount between about 0.25 and about 4.5 mg. per square foot of metal surface; whereby said strip when treated with a chromate conversion coating provides an improved paint adherent surface.

3,445,299

CAST FERROUS MATERIAL OF HIGH MAGNETIC PERMEABILITY

Harry B. Laudenslager, Jr., Jamestown, and Everett W. Hale, Falconer, N.Y., assignors to Blackstone Corporation, a corporation of New York

Continuation-in-part of application Ser. No. 402,570, Oct. 8, 1964. This application July 22, 1968, Ser. No. 756,699
Int. Cl. C22c *39/24*
U.S. Cl. 148—31.55 **4 Claims**

A cast ferrous material of high magnetic permeability comprising about 0.5% to 0.95% carbon, about 2.5% to 4.5% silicon, up to about 0.05% chromium, up to about 0.03% sulfur, up to about 0.05% phosphorus, up to about 0.6% manganese, up to about 0.05% magnesium and the balance iron with usual impurities in ordinary amounts, said carbon being in the form of temper carbon and ferrite substantially free of pearlite and the material being characterized by a permeability of at least 100 kilo lines/in.^{2} at 200 ampere turns per inch.

3,445,300

METHOD OF EPITAXIAL DEPOSITION WHEREIN SPENT REACTION GASES ARE ADDED TO FRESH REACTION GAS AS A VISCOSITY-INCREASING COMPONENT

Erhard Sirtl, Munich, Germany, assignor to Siemens Aktiengesellschaft, Berlin, Germany, a corporation of Germany

Filed Feb. 1, 1966, Ser. No. 524,200
Claims priority, application Germany, Feb. 5, 1965, S 95,337
Int. Cl. H01l *7/36*
U.S. Cl. 148—175 **6 Claims**

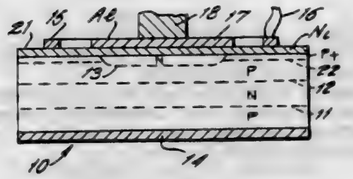
In the method of growing uniform epitaxial layers of semiconductor material, particularly silicon, by pyrolytic dissociation of a gaseous compound of the semiconductor material and precipitating the evolving semiconductor material upon a heated monocrystalline substrate, the improvement which comprises admixing partly spent residual gases of the pyrolytic reaction to fresh reaction gas, whereby said residual gases serve as a viscosity-increasing component. Other disclosed viscosity increasing components include nitrogen or a gas from the argon group. The spent residual gases may be added from the beginning of the deposition reaction or after a period of time has elapsed. A dopant material may be added to the reaction gas and its concentration varied during the course of the reaction.

3,445,301

CONTROLLED RECTIFIER HAVING SHUNTED EMITTER FORMED BY A NICKEL LAYER UNDERNEATH AN ALUMINUM LAYER

Benjamin Topas, Santa Monica, and Harold Weinstein, Van Nuys, Calif., assignors to International Rectifier Corporation, El Segundo, Calif., a corporation of California

Original application Apr. 15, 1965, Ser. No. 448,398, now Patent No. 3,297,921. Divided and this application Nov. 1, 1966, Ser. No. 591,283
Int. Cl. H01l *7/46, 11/10*
U.S. Cl. 148—177 **2 Claims**



A process for forming a shunted emitter for a controlled rectifier in which a thin nickel layer is interposed between a shunting aluminum strip on the upper surface of a semiconductor wafer which contains two opposite conductivity regions. The nickel layer permits a good ohmic contact to both regions and prevents the formation of a regrowth region in the N-type conductivity surface region.

3,445,302

METHOD FOR FABRICATING DOUBLE-DIFFUSED SEMICONDUCTIVE DEVICES

Donald C. Lepiane, Reading, Pa., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

No Drawing. Filed Dec. 20, 1966, Ser. No. 603,148
Int. Cl. C23c *9/04*; H01l *3/12, 7/46*
U.S. Cl. 148—186 **9 Claims**

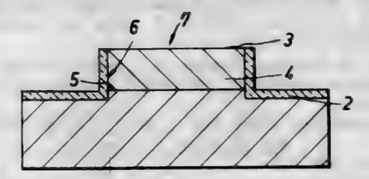
Semiconductive slices are maintained substantially flat and unbowed during double diffusion processes by diffusing impurities having similar atomic diameters into each side of the slice. In one example, phosphorus is diffused into one surface of a silicon slice, and a mixture of boron with either gallium or indium, is diffused into the other surface.

3,445,303

MANUFACTURE OF SEMICONDUCTOR ARRANGEMENTS USING A MASKING STEP

Wilhelm Engbert, Talheim, Germany, assignor to Telefunken Patentverwertungsgesellschaft m.b.H., Ulm (Danube), Germany

Filed Oct. 24, 1965, Ser. No. 504,685
Claims priority, application Germany, Oct. 31, 1964, 27,337
Int. Cl. H01l *7/44*
U.S. Cl. 148—187 **12 Claims**



A method for forming a semiconductor arrangement having a semiconductor body in which is diffused a semi-

conductor zone whose cross section is smaller than that of the body by removing portions of the semiconductor body to produce a protruding region having a cross section which is equal to that of the semiconductor zone to be diffused, covering all of the surfaces of the body which are produced by such removal with a diffusion mask so as to leave the upper surface of the protruding region free, diffusing the semiconductor zone into the region, starting from the unmasked surface thereof, and filling in the depressed regions formed by the removal step for providing a device having a flat upper surface which facilitates the mounting of conductive paths.

3,445,304

PROPELLANT COMPRISING NITROCELLULOSE NH_4NO_3, RUBBERY POLYMERS AND BURNING RATE MODIFIERS

Richard H. Cahill, Needham, Mass., and Paul H. Gehlhaus, Huntsville, Ala., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed Mar. 18, 1963, Ser. No. 266,114
Int. Cl. C06b 1/04
U.S. Cl. 149—19 11 Claims

9. In solid propellant compositions comprising an intimately cured mixture of 15% to 35% by weight nitrocellulose, 45% to 65% ammonium nitrate, and 15% to 50% of a rubbery polymer, the method of modifying the burning rate thereof by adding to said composition before curing a member selected from the group consisting of 2% to 15% by weight boron, 2% to 4% by weight antimony, 2% to 4% by weight titanium dioxide, and 2% to 4% by weight of a mixture consisting essentially of equal parts by weight of aluminum and boron.

3,445,305

GELATION OF GALACTOMANNAN CONTAINING WATER-BEARING EXPLOSIVES

William M. Lyerly, Hagerstown, Md., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 2, 1967, Ser. No. 643,050
Int. Cl. C06b 1/04, 21/00, 11/00
U.S. Cl. 149—39 7 Claims

The rate of gelling in aqueous compositions comprising a galactomannan crosslinked by chromium ions provided by a soluble chromate is accelerated by the addition of a soluble reducing agent to a hydrosol (colloidal solution) comprising the hydrated galactomannan prior to addition of the crosslinking agent. The accelerated crosslinking system is particularly suitable for use in blasting compositions comprising water, inorganic oxidizing salt and one or more fuels and/or sensitizers. Accelerating the rate of crosslinking finds special utility in the one-site formulation and mixing of these compositions, particularly in equipment known in the art as water gel trucks or slurry trucks.

3,445,306

SOLID PROPELLANT COMPOSITION CONTAINING THE REACTION PRODUCT OF POLYVINYLENE GLYCOL NITRATE AND AN AROMATIC DIISOCYANATE

Daniel R. Satriana, Verona, N.J., assignor to the United States of America as represented by the Secretary of the Army

No Drawing. Filed Dec. 1, 1967, Ser. No. 687,393
Int. Cl. C06b 5/00, 19/04
U.S. Cl. 149—96 6 Claims

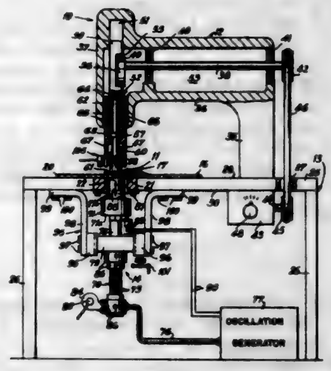
An improved high energy additive for use in a propellant subjected to a desert type environment consisting of the reaction product of polyvinylene glycol nitrate and an aromatic diisocyanate.

3,445,307

METHOD AND APPARATUS EMPLOYING VIBRATORY ENERGY FOR JOINING MATERIALS

Lewis Balamuth, New York, and Clifford A. Robertson, Bayshore, N.Y., assignors to Cavitron Corporation, Long Island City, N.Y., a corporation of New York

Filed Aug. 3, 1965, Ser. No. 476,975
Int. Cl. B32b 31/08; B30b 13/00
U.S. Cl. 156—73 27 Claims



Two or more materials, which are to be joined in an overlapping area, are passed through a sealing station consisting of a pair of opposed members having confronting working faces for engagement with the outer surfaces of the overlapped materials. As the materials are caused to pass through the spacing defined by said members, vibratory forces having one component in the low sonic frequency range and another component in the ultrasonic frequency range are applied. The low frequency component couples the ultrasonic frequency component to the materials during a portion of the low frequency cycle to effect a joining of the materials. Depending upon the sequencing of the low frequency component with respect to the movement of the sheets, the joining may be continuous or stitch-like.

3,445,308

METHOD OF MAKING CORRUGATED FLEXIBLE HOSE

Carroll H. Osborn, Waynesville, N.C., assignor to Dayco Corporation, a corporation of Delaware

Original application June 8, 1964, Ser. No. 373,257, now Patent No. 3,329,172, dated July 4, 1967. Divided and this application Jan. 10, 1967, Ser. No. 627,571
Int. Cl. B29c 17/00
U.S. Cl. 156—86 4 Claims



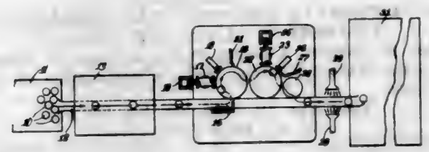
A method of manufacturing corrugated hose including the steps of coating a heat-shrinkable cord with an elastomer, forming this coated cord into a helical reinforcing coil, and placing an elastomeric tube over the coil. The tube is shrunk over the body to create corrugations and subsequent heat is applied to cause the cord to shrink and cut through the coating, thus leaving the coating in an arcuate shape to create the final reinforcing member.

3,445,309

METHOD OF APPLYING A VITREOUS DECALCOMANIA

Thomas J. Milliken, Chicago, Ill., assignor to The Meyercord Co., Chicago, Ill., a corporation of Illinois

Filed May 4, 1966, Ser. No. 547,506
Int. Cl. B44c 1/16
U.S. Cl. 156—89 10 Claims



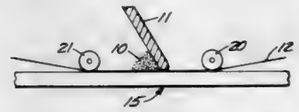
1. In the method of decorating an article of glassware, chinaware, or the like by means of a heat release vitreous decalcomania having a backing, a normally solid polyethylene glycol heat release coating on said backing, and a vitreous design disposed over said coating and having an exposed thermoplastic surface, which method includes the steps of (a) preheating the article, (b) pressing the vitreous design side of the decalcomania against the surface of the preheated article to temporarily adhere the design to the article and at the same time to melt the coating and release the backing, (c) removing the backing, and (d) subsequently firing the ware at an elevated temperature to permanently fuse the design thereto; the improvement which comprises the step of washing the outer surface of the temporarily adhered design, between steps (c) and (d), with an aqueous wash liquid to remove residual polyethylene glycol from said design, whereby to avoid possible distortion and disfiguration of the design during step (d).

3,445,310

SCREEN PRINTING PROCESS AND PRODUCT

Alton J. Danielson, Baytown Township, Washington County, and James V. Erwin and Harold A. Berg, Stillwater, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed Aug. 13, 1965, Ser. No. 479,587
Int. Cl. B44c 1/06
U.S. Cl. 156—230 11 Claims



Screen process printing on thermo-softenable receptor surfaces is accomplished with spheroidal dry ink particles of 5–50 micron diameter. After removal of the stencil, the powder is retentively embedded by heating of the thermosoftenable layer at least at the image areas.

3,445,311

BONDING OF PLASTIC MATERIALS BY POLYMERIZABLE SOLVENTS

Robert P. Cox and Ralph W. Buetow, Madison, Wis., assignors to Celanese Corporation, a corporation of Delaware

No Drawing. Filed Oct. 28, 1964, Ser. No. 407,221
Int. Cl. C09j 5/02; B32b 23/20
U.S. Cl. 156—307 13 Claims

The process for bonding cellulose ester, e.g., cellulose acetate, sheets together by applying to at least one of the mating sheet surfaces a monomeric polymerizable ketone which is a swelling agent or, preferably, a solvent for the cellulose ester and applying to at least one of the mating surfaces a polymerization catalyst, e.g., a quaternary ammonium base, for the ketone and subsequently polymerizing the ketone in situ. The laminated cellulose ester product is suitable for use in eyeglass frames.

3,445,312

METHOD FOR MAKING LAMINATED STRUCTURES

Osborne Lawrence Rider, Baltimore, Md., assignor to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 28, 1965, Ser. No. 459,916
Int. Cl. C09j 3/00
U.S. Cl. 156—332 5 Claims

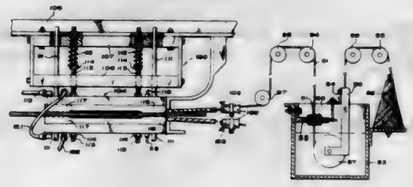
This specification discloses a method for the preparation of laminated structures which comprises coating a substrate with a film of a diallyl phthalate coating composition containing a polymerization inhibitor and a catalyst, laying over the coated substrate a fibrous sheet of reinforcing material and thereafter subjecting the composite assembly to laminating pressure at a temperature and for a time sufficient to activate the catalyst and convert the resin in the film to a thermoset condition.

3,445,313

WOOD VENEER JOINING AND HANDLING APPARATUS

Victor H. Clausen, Bellevue, and Arnold Zweig, Olympia, Wash., assignors to Simpson Timber Company, a corporation of Washington

Continuation-in-part of application Ser. No. 331,893, Dec. 19, 1963. This application Aug. 23, 1965, Ser. No. 481,839
Int. Cl. B27d 1/00; B29b 5/06
U.S. Cl. 156—433 8 Claims



A system for forming composite wood veneer sheets from a plurality of random width veneer pieces. The pieces are tenderized by shallow knife cuts, and passed in abutting relationship through a crowder conveyor. While the veneer pieces are crowded, a continuous strand of substantially untwisted fiber glass is applied to the adjacent face surfaces of the veneer pieces with a thermoplastic adhesive. The fibrous strand is pressed onto the surface of the veneer pieces by means of a pressure foot which also includes a heated toe portion and a cool heel portion to insure setting of the adhesive. The continuous ribbon is then edge-trimmed and clipped into proper dimensions for core veneer and stacked by vacuum apparatus.

3,445,314

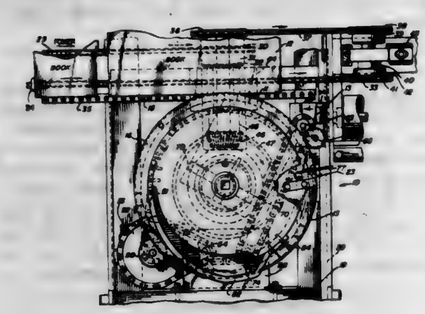
STRIP MATERIAL APPLICATOR

Elmo Parker Crim, 9418 S. Albany Ave., Evergreen Park, Ill. 60642

Filed Oct. 22, 1965, Ser. No. 501,542
Int. Cl. B65c 9/18
U.S. Cl. 156—521 8 Claims

An apparatus for providing a series of end pieces cut from the end of a strip of material having an adhesive coated surface. The apparatus includes a hollow cy-

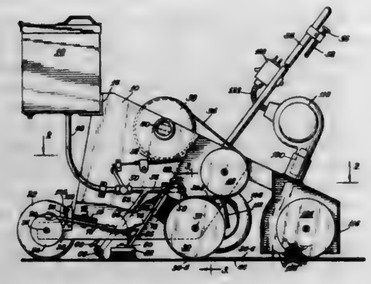
lindrical carrier and means for continuously advancing the strip material onto the circumferential surface of the carrier. Vacuum means are provided for yieldingly retaining the strip on the carrier circumferential surface. The strip advancing means causes the strip to advance at a constant rate slightly less than the linear rate of movement of the carrier circumferential surface whereby the strip moves at all times with the carrier circumferential surface but at a slightly slower rate. A knife mechanism is mounted on the carrier for accurately cutting the strip to define a severed end piece which moves directly with the carrier to an applying station. The vacuum retaining means comprises a plurality of spaced apertures in the circumferential surface which are closed at the applying station to provide facilitated transfer of the end piece onto an element for adhesion thereby by the adhesive coated surface thereof.



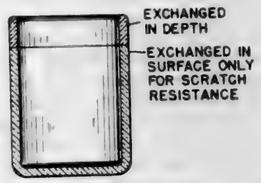
3,445,315
PLASTIC WELDING APPARATUS
William J. Strauss, Champaign, Ill., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Mar. 6, 1964, Ser. No. 349,984
Int. Cl. C09j 5/02, 5/10
U.S. Cl. 156—575 16 Claims

A method and machine for welding two plastic sheets together in a permanent fashion. The method involves, generally, the solvent wetting of the abutted edge portions of two sheets or films of plastic and one side of a capping strip followed by a brush-in application of the solvent. The strip, wet end down, is then pressed down upon the wetted edge portions to permanently affix the two sheets together.

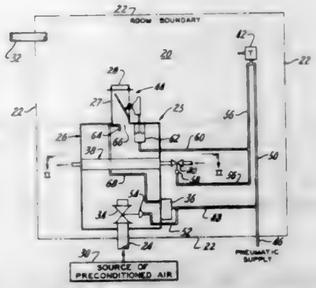
The machine in its broadest aspects comprises a vehicle having a supply of capping strip and a series of rollers for guiding the strip onto the abutted edge portions of the two plastic sheets to be joined. Prior to actual contact of the strip with the sheets, solvent is applied and worked into the strip and the edge portions by an oscillating brush so that a more permanent bond or weld is effected. Heat also may be applied to further enhance using of the sheets.



3,445,316
METHOD OF DIFFERENTIAL CHEMICAL TEMPERING GLASS AND ARTICLE
John E. Megles, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Apr. 14, 1966, Ser. No. 542,570
Int. Cl. B32b 7/02, 17/00
U.S. Cl. 161—1 2 Claims



This invention relates to a glass article strengthened by compressive stresses in a surface zone balanced by tension in an inner zone. It is particularly concerned with strengthening a glass article which has a peripheral or rim portion that is more vulnerable to impact breakage than an interior portion which it encloses or surrounds.



3,445,317
AIR CONDITIONING APPARATUS
Theodore W. Marshall, Frederick W. Rankin, and Norman E. Willett, Connersville, Ind., assignors to H. H. Robertson Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 21, 1967, Ser. No. 669,448
Int. Cl. F24f 3/06, 11/08, 13/10
U.S. Cl. 165—39 6 Claims

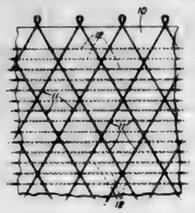
An air conditioning device for conditioning air in each individual room of a building requiring heating and cooling. A single stream of preconditioned air is conveyed to the device wherein the volume flow rate and/or temperature thereof are regulated in accordance with the existing conditions in the individual rooms to maintain the air temperature in the rooms at a selected temperature. The conditioned air is discharged from the apparatus at a constant velocity regardless of variations in volume flow rate and/or temperature of the conditioned air.

3,445,318
ADHESIVE COMPOSITION OF ETHYLENE-PROPYLENE COPOLYMERS AND TERPOLYMERS WITH CARBON BLACK PARTICLES
Stewart L. Brams, West Alexandria, Frederick W. Gage, Dayton, and Ronald L. Riege, West Alexandria, Ohio, assignors, by mesne assignments, to Whittaker Corporation, Los Angeles, Calif., a corporation of California
Filed Feb. 7, 1964, Ser. No. 343,239
Int. Cl. B32b 27/32, 27/08, 15/08
U.S. Cl. 161—46 6 Claims



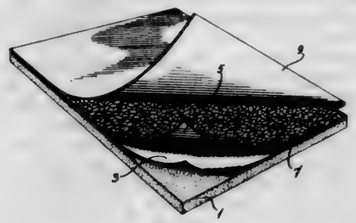
This invention relates to an adhesive composition or system for bonding ethylene-propylene elastomers to a variety of rigid and flexible substrates comprising a substantial weight proportion of an ethylene-propylene elastomeric material and a substantial proportion by weight (but more significantly by surface area) of a carbon black of very small particle size within the range of from nine to thirty-five millimicrons in diameter.

3,445,319
FILAMENT REINFORCED PLASTIC FILM
Henry D. Dawbarn, Waynesboro, Va., assignor, by mesne assignments, to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Apr. 17, 1964, Ser. No. 360,673
Int. Cl. B32b 23/10
U.S. Cl. 161—58 3 Claims



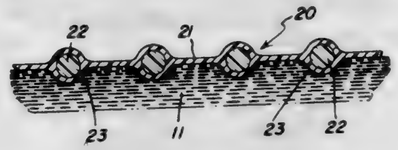
A thermoplastic product comprising a substantially unoriented thermoplastic film reinforced on both sides in at least two directions with substantially straight, oriented thermoplastic filaments, said filaments forming a diamond shaped pattern on one side of said film and on the other side said filaments being parallel to each other and to the longitudinal direction of the film.

3,445,320
FLOOR COVERING
Horace Bolvin, P.O. Box 399, 100 Dennison W., Granby, Quebec, Canada
Filed May 5, 1965, Ser. No. 453,298
Int. Cl. B32b 27/30, 17/10, 15/20
U.S. Cl. 161—83 6 Claims



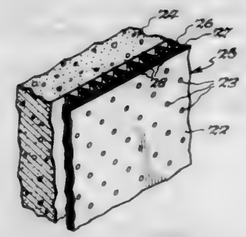
A floor covering formed of a backing layer of foam material covered on one face thereof with a fabric of tightly woven glass fibre followed by a first layer of polyvinyl chloride over the free surface of which a heat-absorbing layer constituted of a plurality of aluminum chips is bonded, and a final facing layer of polyvinyl chloride bonded over said heat-absorbing layer.

3,445,321
THIN, REINFORCED PERMSELECTIVE FILMS
James N. Groves, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed May 1, 1967, Ser. No. 635,176
Int. Cl. B01d 46/54, 46/00
U.S. Cl. 161—92 2 Claims



A thin, high strength, reinforced, hole-free elastomer membrane having reinforcing fibers covered with a substantially uniform coating of the elastomeric material and the preparation of such membranes is described. The diameter of reinforcing fibers are such that web portions are formed giving a waffle-like configuration to the reinforced membrane.

3,445,322
LAMINATED BUILDING COMPONENT
Samuel N. Saila, Cheektowaga, and Louis L. Chiusolo, Lewiston, N.Y., assignors, by direct and mesne assignments, of thirty-three and one-third percent each to Ignatius T. Agro and Charles Cassaro, both of Buffalo, and Louis L. Chiusolo, Lewiston, N.Y.
Filed Oct. 18, 1965, Ser. No. 497,245
Int. Cl. B32b 3/10, 3/26, 5/18
U.S. Cl. 161—113 3 Claims



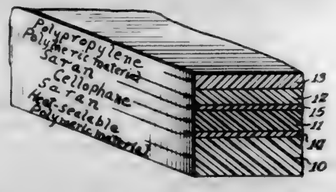
A water barrier laminate including a porous casing member, compartments in said laminate for holding bentonite clay in position against a wall and a tenacious plastic membrane forming the outside of the laminate for preventing rupture thereof. The plastic membrane may be either continuous or perforate.

3,445,323
MANUFACTURE OF PLASTERBOARD FROM SYNTHETIC GYPSUM
Adolph Schnabel, 12 Lincoln Lane, Broomall, Pa. 19008
No Drawing. Continuation-in-part of applications Ser. No. 251,493, Jan. 15, 1963, and Ser. No. 496,134, Oct. 14, 1965. This application Jan. 19, 1966, Ser. No. 521,500
Int. Cl. B32b 13/08, 5/16
U.S. Cl. 161—162 12 Claims

This invention contemplates the manufacture of plasterboard from synthetic gypsum, such as the byproduct gypsum of the phosphate recovery process, and involves

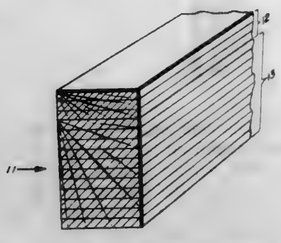
the neutralization of acidic impurities present in the gypsum by intimately admixing therewith nondolomitic calcium carbonate predominantly of a particle size smaller than 44 microns and in an amount sufficient to impart to the gypsum after calcination at temperatures below 374° F. and when slurried with water a pH of about 6.0 to 7.0.

3,445,324
FLEXIBLE WRAPPING MATERIAL
Howard J. Curler and Glenn E. Lineburg, New London, Wis., assignors to Curwood, Inc., a corporation of Delaware
Continuation-in-part of application Ser. No. 280,200, May 14, 1963. This application Dec. 6, 1966, Ser. No. 599,566
Int. Cl. B32b *27/30, 27/08*
U.S. Cl. 161—165 13 Claims



A flexible wrapping material resistant to flex cracking and pin hole development and impervious to gas and moisture made by bonding a sheet of biaxially oriented polypropylene to one surface of a sheet of cellophane coated at least on one side with vinylidene chloride copolymer (Saran) and bonding low density polyethylene or other heat-sealable polymeric layer having a melting point substantially below that of the polypropylene to the other surface of the cellophane sheet.

3,445,325
LAMINATED WOOD BEAM WITH IMPROVED PRESERVATIVE TREATMENT
Joe W. Clark, Madison, Wis., assignor to the United States of America as represented by the Secretary of Agriculture
Filed Aug. 22, 1966, Ser. No. 574,506
Int. Cl. B32b *7/02*
U.S. Cl. 161—166 5 Claims



1. A laminated wood beam treated with wood preservative, said beam comprising in combination a plurality of plies of wood of a first species that is not receptive to full penetration by said wood preservative, said plies being bonded together to constitute a base portion, and a top cap bonded to said base portion and comprising a plurality of plies of wood of a second species that is receptive to full penetration by said wood preservative to fully treat the same, the thickness of said fully treated top cap being such that when fasteners are attached to said top cap they do not penetrate deeper than the preservative.

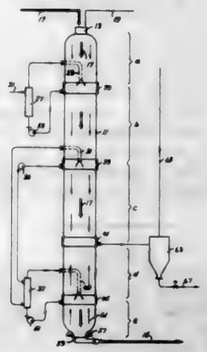
3,445,326
PRIMER FOR FLEXIBLE NON-POROUS SURFACES
Alan R. Hurst, Hinsdale, Ill., assignor, by mesne assignments, to Morton Salt Company, Chicago, Ill., a corporation of Delaware
No Drawing. Filed Jan. 31, 1964, Ser. No. 341,764
Int. Cl. B32b *15/04, 13/12, 13/06*
U.S. Cl. 161—207 16 Claims

An aluminum foil or other thin, flexible, non-porous structure is coated with a thin layer of primer which is a saturated amino-substituted silane such as gamma-aminopropyltriethoxysilane, and the primer is dried. A thin film of non-porous coating material, such as polypropylene or polyethylene film or polyvinylchloride-wax slip-coat, is applied over the dry layer of primer to provide a flexible laminate structure. The silane alone provides high strength adhesion between the surfaces.

3,445,327
ABRASIVE-RESISTANT DECORATIVE LAMINATES AND METHOD FOR MAKING SAME
Peter E. Fuerst, Coshocton, Ohio, assignor to General Electric Company, a corporation of New York
No Drawing. Filed Mar. 26, 1964, Ser. No. 355,061
Int. Cl. B32b *27/10, 5/16*
U.S. Cl. 161—264 6 Claims

Decorative laminates having hard or abrasion-resistant particles in the surface coating are given a textured surface by including between the surface of the laminate and press pan during pressing and curing a dead-soft foil of a soft metal.

3,445,328
METHOD FOR CONTINUOUS CELLULOSE DIGESTION UTILIZING TWO TEMPERATURE ZONES
Oliver Armas Laakso, Glens Falls, N.Y., assignor to Aktiebolaget Kamyr, Karlstad, Sweden
Filed Jan. 22, 1965, Ser. No. 427,420
Claims priority, application Sweden, Jan. 25, 1964, 940/64
Int. Cl. D21c *3/26*
U.S. Cl. 162—19 5 Claims



By performing the digestion in two stages using the same digesting liquor but different temperatures in these stages, the digesting temperature of the latter stage is reduced in comparison to that of the former. In the first stage, the high temperature stage, the fibrous material is in a condition thoroughly impregnated with digesting liquor and the reaction starts at once in full force. However, the diffusion of digesting liquor into the interior of the fibrous material cannot follow step. Consequently, in the interior of the fibrous material the content of digesting liquor is depleted and the content of dissolved substances increases considerably more rapidly than in the surface layer of the chip particles. In the second stage, the lower temperature stage, the digesting reaction takes place less rapidly and there the diffusion has comparatively more time to be

effective. Consequently, the concentrations of digesting liquor and dissolved substances are better equalized over the surface layers and the interior of the fibrous material with the result that the material is more uniformly digested.

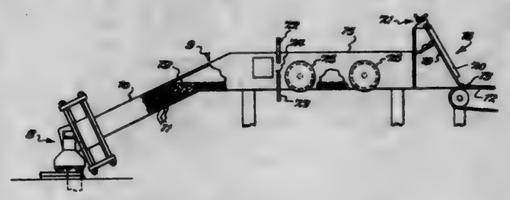
3,445,329
STORAGE OF HIGH CONSISTENCY REFINED PULP
William B. West and John T. Henderson, Camas, Wash., assignors to Crown Zellerbach Corporation, San Francisco, Calif., a corporation of Nevada
Filed Mar. 14, 1966, Ser. No. 534,023
Int. Cl. D21c *3/26;* D21b *1/30*
U.S. Cl. 162—19 9 Claims

A process for preparing a fibrillated pulp from defibered cellulosic fibers suitable for storage, wherein already defibered pulp of separated cellulosic fibers is processed to effect fibrillation of the separated fibers. The fibrillation is such that fibrils are formed in a fiber along its surface which are partially free to the extent that they separate and project from the fiber in hair-like strands while substantially maintaining the length of the fiber. Such fibrillated pulp is prepared for storage by introducing cool water to the pulp immediately after fibrillation thus to produce hydration of the separated fibrils, with water molecules attaching to hydroxyl groups in the fibrils through hydrogen bonding. Cooling of the fibrillated pulp with the addition of water promotes hydration of the fiber fibrils.

3,445,330
METHOD OF SIZING PAPER WITH CARBOXYLIC ACID ANHYDRIDE PARTICLES AND POLYAMINES
Russell Joseph Kulick and Edward Strazdins, Stamford, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Continuation-in-part of applications Ser. No. 112,781, May 26, 1961, Ser. No. 420,783, Dec. 23, 1964, and Ser. No. 490,636, Sept. 27, 1965. This application Apr. 28, 1966, Ser. No. 545,872
Int. Cl. D21d *3/00*
U.S. Cl. 162—164 4 Claims

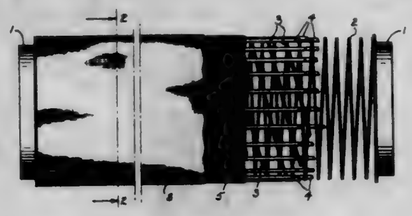
Paper is sized with a dispersion of carboxylic acid anhydride particles such as stearic anhydride and a cationic polyamine catalyst.

3,445,331
FIBER SUSPENSION DISTRIBUTION SYSTEM
Charles Allen Lee, Knoxville, Tenn., and James A. Murphy, Toronto, Ontario, Canada, assignors, by direct and mesne assignments, to Canadian International Paper Company, Montreal, Quebec, Canada, a body corporated and politic
Filed Aug. 16, 1965, Ser. No. 479,797
Int. Cl. D21f *1/06*
U.S. Cl. 162—338 7 Claims



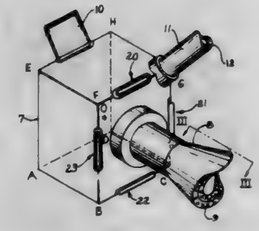
A movable distribution system for a paper making machine including a mixing chamber with a plurality of orifices distributed over its area. The total cross-sectional area of flow at the inlet end of the mixing chamber is intermediate the cross-sectional area of the mixing chamber and the total cross-sectional area of said orifices.

3,445,332
WINDING WIRE FOR AN OPEN FACE ROLL
William S. Johnston, 752 Lake Crest Drive, Menasha, Wis. 54952
Filed Dec. 14, 1964, Ser. No. 418,005
Int. Cl. D21f *1/60*
U.S. Cl. 162—357 1 Claim



The woven wire facing of a dandy roll for a papermaking machine is supported on a skeleton having trunnions at opposite ends joined together by a helix of brass strip, a pair of helixes of rods mounted about the helix of brass strip, axially oriented truss rods welded to the outside of the rod helixes and winding wire helically wound about the truss rods. The winding wire is crimped to support the facing on outwardly projecting knuckles.

3,445,333
PROCESS FOR THE PRODUCTION OF ENERGY BY CONTROLLED FUSION
Paul Lecomte, 35 Rue de Soupirs, Epinal, Vosges, France
Continuation-in-part of application Ser. No. 437,869, Mar. 8, 1965. This application Dec. 1, 1966, Ser. No. 598,367
Claims priority, application France, Mar. 10, 1964, 1,388,309
Int. Cl. G21b *1/02*
U.S. Cl. 176—1 6 Claims

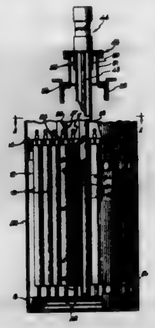


A process for the production of energy by controlled fusion in which a plurality of pairs of separate proton streams are focused and are directed toward a common point in a magnetic bottle, the streams of each pair being opposed to each other and the protons in the streams of each pair moving in helical paths whose circumferential components of movement extend in opposite circumferential directions in order to increase the probabilities of collisions of the atomic nuclei.

3,445,334
CONTROL ROD AND DRIVE MECHANISM THEREFOR
John R. Humphries, Jr., San Diego, Calif., assignor, by mesne assignments, to Gulf General Atomic Incorporated, San Diego, Calif., a corporation of Delaware
Filed Jan. 24, 1966, Ser. No. 522,609
Int. Cl. G21c *7/16*
U.S. Cl. 176—36 3 Claims

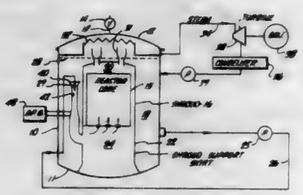
A high speed control rod and its associated drive mechanism are described in connection with a nuclear

reactor having a large prompt negative temperature coefficient. The control rod may be drawn upwardly from the core to cause a power pulse. The control rod is longer than the core and extends a substantial distance below the core. When it is withdrawn, this extra length enables the control rod to be accelerated to a substantial velocity



before any effective change in reactivity of the core occurs. A piston located on the linkage mechanism close to the control rod coacts with a dash pot cylinder to brake the mechanism after the control rod is withdrawn and, because of its position, places a tensile stress on most of the linkage during braking.

3,445,335
NUCLEAR REACTOR SYSTEM WITH JET PUMP FLOW MEANS
Douglas M. Gluntz, San Jose, Calif., assignor to General Electric Company, New York, N.Y., a corporation of New York
Continuation of application Ser. No. 459,836, May 28, 1965. This application Aug. 9, 1967, Ser. No. 659,536
Int. Cl. G21c *15/24, 19/28*
U.S. Cl. 176—61 **3 Claims**



A nuclear reactor system including at least one jet pump having means for measuring flow therethrough is disclosed. Flow is measured by a pair of pressure taps, both of which are located downstream of the jet pump inlet opening. In a preferred embodiment, the two pressure taps are located in spaced series along the jet pump diffuser.

3,445,336
PROCESS FOR PRODUCING FLAVIN-ADENINE DINUCLEOTIDE
Masao Tanaka, Machida-shi, and Nobuo Nakamura, Tokyo, Japan, assignors to Kyowa Hakko Kogyo Co., Ltd., Tokyo, Japan, a corporation of Japan
No Drawing. Continuation-in-part of application Ser. No. 465,185, June 18, 1965. This application Jan. 23, 1968, Ser. No. 699,764
Claims priority, application Japan, June 24, 1964, 39/35,561
Int. Cl. C12d *13/06*
U.S. Cl. 195—28 **15 Claims**

A process for producing flavin-adenine dinucleotide by fermentation which comprises culturing a flavin-adenine dinucleotide-producing microorganism belonging to the genus Brevibacterium, Flavobacterium, Micrococcus or Corynebacterium in an aqueous nutrient medium under aerobic conditions in the presence of at least one precursor of flavin-adenine dinucleotide. Precursors which may be employed include pyrimidine base precursors such as cytosine, thymine and uracil, purine base precursors such as adenine, guanine, hypoxanthine and xanthine, lumazine and derivatives thereof, ribityl derivatives of these precursors, ribofiavin and flavin mononucleotide.

3,445,337
YEAST FERMENTATION PROCESS
John Francis Theodore Spencer, Alexander Patrick Tulloch, and Philip Albert James Gorin, Saskatoon, Saskatchewan, Canada, assignors to Canadian Patents and Development Limited, Ottawa, Ontario, Canada, a corporation of Canada
No Drawing. Filed Sept. 30, 1966, Ser. No. 583,477
Int. Cl. C12c *11/00;* **C12d** *13/00*
U.S. Cl. 195—37 **11 Claims**

Hydroxy fatty acids are produced as glycolipids by fermenting strains of the osmophilic yeast *Torulopsis apicola.* Various aliphatic long chain compounds are desirably added to the medium to effect conversion thereof to hydroxy fatty acid glycoside. Suitable compounds include fatty acids and esters, hydrocarbons and alcohols.

3,445,338
EQUILIN PROCESS
Gunther Kruger, St. Laurent, Montreal, Quebec, Surendra N. Sehgal, Dollard des Ormeaux, Quebec, and Claude Vezina, Oka, Quebec, Canada, assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Feb. 3, 1967, Ser. No. 613,748
Int. Cl. C12b *1/00;* **C07c** *167/16*
U.S. Cl. 195—51 **11 Claims**

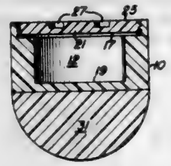
There are disclosed herein a process for preparing the naturally occurring estrogen equilin, starting from estra-4,6-diene-3,17-dione, 3,17 - dioxandrosta-4,6-dien-19-al, or 3,17-dioxoandrosta - 4,6 - dien-19-oic acid, comprising treating the above compounds with alkali to obtain estra-5,7-diene-3,17-dione, and converting the latter compound by microbiological means to equilin.

3,445,339
ISOLATION OF HEMOPHILUS BACTERIA
Guido Controni, 5327 85th Ave., New Carrolton, Md. 20784; Waheed N. Khan, 1703 East-West Highway, Apt. 503, Silver Spring, Md. 20910; James R. Patrick, Mullinix Mill Road, Mount Airy, Md. 21771; and Sydney Ross, 2831 Chesterfield Place NW., Washington, D.C. 20008
Filed Feb. 6, 1968, Ser. No. 703,480
Int. Cl. C12k *1/04*
U.S. Cl. 195—103.5 **7 Claims**

A method of isolating and discerning the presence of Hemophilus species in cerebral spinal fluid and body cavity fluid specimens, which is equally adapted to isolation and examination of these bacteria: meningococci; staphylococci; pneumococci. One principle application of the method lies in the ready identification of pathogenic *Hemophilus influenzae,* which are virtually always capsulated and nearly all belong to type B.

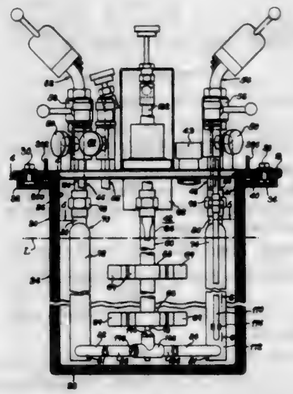
3,445,340
ROTOR CHAMBER INSERT
Nicholas Hahon, Frederick, Md., assignor to the United States of America as represented by the Secretary of the Army
Filed Aug. 25, 1966, Ser. No. 575,500
Int. Cl. C12b *1/02;* **B65d** *41/04*
U.S. Cl. 195—127 **5 Claims**

A sealed container having a cover slip positioned on the bottom thereof. In operation, a cell culture is positioned on the cover slip and a virus suspension introduced



thereon. The sealed container is then subjected to centrifugation to inoculate the cell culture.

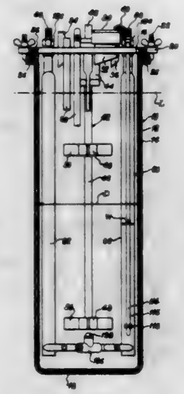
3,445,341
FERMENTATION APPARATUS WITH STERILIZATION CAPABILITIES
David Freedman, Highland Park, and Vytautas A. Liobis, Plainfield, N.J., assignors to New Brunswick Scientific Co., Inc., a corporation of New Jersey
Filed June 17, 1966, Ser. No. 558,506
Int. Cl. C12b *1/22*
U.S. Cl. 195—139 **11 Claims**



A vessel for containing a culture growth medium which has an open mouth and a head plate with an impeller in the vessel for agitating the growth medium and a baffle assembly in the vessel for providing turbulence and shearing action in the agitated growth medium and for establishing a path through the medium for circulating a heat exchange medium to control the temperature of the growth medium in response to the temperature sensing device located within the vessel and for circulating a relatively high temperature heat exchange medium for sterilization of the growth medium within the vessel. An additional feature relates to means for providing a steam barrier between the vessel and the head plate to prevent the escape of harmful pathogenic organisms.

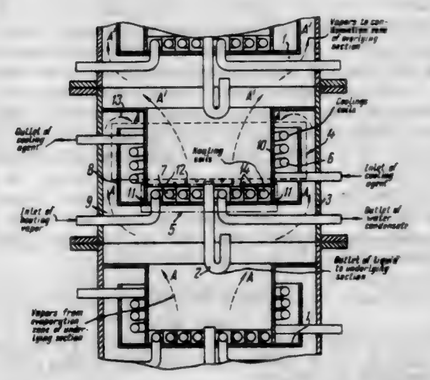
3,445,342
FERMENTATION APPARATUS
David Freedman, Highland Park, N.J., assignor to New Brunswick Scientific Co., Inc., a corporation of New Jersey
Filed Feb. 11, 1966, Ser. No. 526,764
Int. Cl. C12b *1/22*
U.S. Cl. 195—142 **15 Claims**

A vessel for containing a culture growth medium which has an open mouth and a removable head plate with an impeller in the vessel for agitating the growth medium and a baffle assembly in the vessel for providing turbulence and shearing action in the agitated growth medium and for establishing a path through the medium for circulating a heat exchange medium to control the temperature



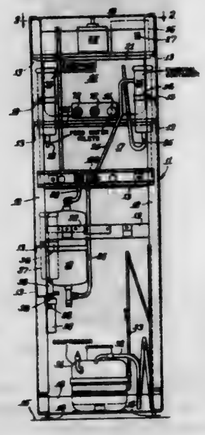
of the growth medium in response to a temperature sensing device located within the vessel and proximate to the baffle assembly for sensing the temperature of the medium and the baffle a. sembly.

3,445,343
APPARATUS FOR EVAPORATING-CONDENSING SEPARATION OF MIXTURES
Dmitry Mikhailovich Popov, Novopeschanaya ulitsa 26/11, kv. 40, Moscow, U.S.S.R.
Filed Feb. 1, 1967, Ser. No. 613,174
Int. Cl. B01d *3/10, 3/14*
U.S. Cl. 202—158 **8 Claims**



Apparatus for the evaporating-condensing separation of mixtures, comprising a plurality of sections arranged one above another and interconnected for the passage of vapor from the evaporating zone of the underlying section into the condensing zone of the overlying section. The condensing zone and evaporating zone in each section are separated from each other by a hydraulic seal for supplying condensate from the condensing zone into the evaporating zone of the same section. The sections are separated from each other by a plate accommodating a hydraulic seal for causing overflow of non-evaporated liquid into the underlying section.

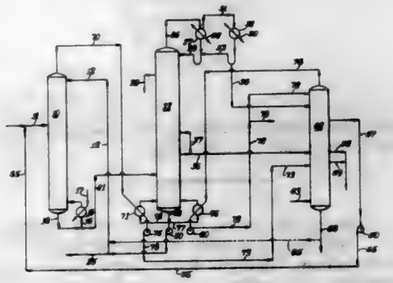
3,445,344
APPARATUS FOR PURIFYING WATER
Evans T. Morton, Milwaukee, Wis., assignor to Aqua-Chem, Inc., a corporation of Wisconsin
Filed Sept. 27, 1965, Ser. No. 490,601
Int. Cl. C02b 1/08; B01d 3/08
U.S. Cl. 202—176 13 Claims



A water purifying device for home or like use and which can be mounted in an upright cabinet. The device usually includes a heat pump or refrigeration cycle system for heating and evaporating impure water in an evaporating zone and for condensing distillate in a condensing zone. Below these two zones, product hot and cold water holding tanks are provided with the former mounted below the latter and an open conduit connecting the two to apply the cold water head to the hot water and for receiving condensate from the condensing zone. The feed water line to the evaporating zone retains a body of solid polyphosphate in direct contact with impure feed water for supplying polyphosphate to the feed water and a valve in the feed line opens responsive to the temperature of a supply of impure water in the evaporating zone still below the polyphosphate thermal decomposition temperature. Water can be delivered from this supply for vaporization by a rotating inverted open cone with an external circular intermediate ridge as a pump having its small open end in contact with the water so that water flows to the top of the cone inside the cone and to the intermediate ridge outside the cone for delivery radially to heating surfaces in the evaporating zone.

3,445,345
EXTRACTIVE DISTILLATION OF C_1 TO C_3 ALCOHOLS AND SUBSEQUENT DISTILLATION OF PURGE STREAMS
Raphael Katzen, Vincent B. Diebold, and George D. Moon, Jr., Cincinnati, Ohio, assignors to Raphael Katzen Associates, a partnership
Filed May 8, 1968, Ser. No. 727,540
Int. Cl. C07c 29/30; B01d 3/40
U.S. Cl. 203—25 10 Claims

A crude alcohol-containing mixture comprising a saturated aliphatic alcohol of not more than 3 carbon atoms and associated impurities is processed in a three-tower distillation system to permit recovery of the desired alcohol product in highly concentrated and purified form. In the first tower the crude feed is subjected to extractive distillation with water to remove substantially all the impurities overhead. An aqueous bottoms stream from the first tower containing 5 to 10 wt. percent alcohol and only minor amounts of impurities is fed to the second tower where the alcohol product is concentrated and recovered. Overhead and intermediate purge streams containing low boiling and high boiling impurities are removed from the second tower and are fed to the third tower along with the



overhead from the first tower. The impurities are recovered as by-products from the third tower, and an alcohol stream is recycled from the third tower to the first tower. Water may be recycled from the bottoms of the second and third towers to the first tower. Multiple pressure level operation may be used for heat economy.

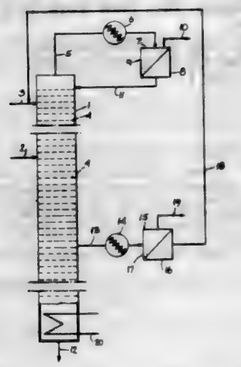
3,445,346
STEAM DISTILLATION OF SOLVENTS WITH URANIUM SALT ADDITION
Pierre Auchapt, Bagnols-sur-Ceze, Bernard Girard, Villeneuve-les-Avignons, and Roger Sautray, Bagnols-sur-Ceze, France, assignors to Commissariat à l'Energie Atomique, Paris, France
No Drawing. Filed Dec. 21, 1964, Ser. No. 420,163
Claims priority, application France, Dec. 31, 1963, 959,013
Int. Cl. B01d 3/38, 3/34, 3/10
U.S. Cl. 203—33 8 Claims

The present invention is directed to a process for the purification of solvents by steam distillation which is especially intended for the purpose of purifying and decontaminating solvents of the type employed in the nuclear industry. The process comprises steam distilling the solvent to be purified to which has been added a uranium salt. The salt added is added in such quantity that the total uranium content does not exceed 20 grams of uranium per liter of solvent. The distillation is preferably carried out at 100° to 160° C. and at either atmospheric pressure or at from 50 to 400 millimeters of mercury.

3,445,347
EXTRACTIVE DISTILLATION OF ACRYLONITRILE WITH SIDE STREAM IMPURITY WITHDRAWAL
Marcel Borrel, Oullins, Rhone, and Jean Konareff, Valmont, Moselle, France, assignors to Ugine Kuhlmann, Paris, France, a corporation of France
Continuation-in-part of application Ser. No. 516,103, Dec. 23, 1965. This application May 29, 1968, Ser. No. 733,002
Claims priority, application France, Dec. 24, 1964, 999,856
Int. Cl. B01d 3/40; C07c 121/16
U.S. Cl. 203—96 4 Claims

Extractive distillation process for the separation of acrylonitrile and acetonitrile from mixtures containing them together with higher nitriles and alcohols by removal

of the higher nitriles and alcohols as a low side stream from the distillation zone and the removal of water with



a minor amount of acetonitrile from the column as bottoms.

3,445,348
CELLULAR STRUCTURE AND METHOD OF MANUFACTURE
Leonard E. Aske, Minneapolis, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed May 12, 1965, Ser. No. 455,180
Int. Cl. C23b 7/08, 7/00
U.S. Cl. 204—9 4 Claims



In the present invention a cellular structure is made by an electroforming process as follows: form a waffle iron shape wax mold from a master; coat the mold with suitable material for electrode conductivity; electroplate a metallic material on the conductive wax mold; fill the depressions of the metallic coating with wax to form a continuous surface area of wax and metallic material; conductivate the localized wax surface; electroplate a second metallic material on the first metallic material and the conductive wax surface to form a solid sheet member; melt the wax from the electroformed cellular structure.

3,445,349
METHOD OF ANODIC OXIDATION OF ALUMINUM
Sakae Tajima, Tokyo, Nobuyoshi Baba, Tokorozawa, Saitama, Shin Matsuyama, Toyokawa, Aichi, and Masaburni Ono, Koda, Nukata, Aichi, Japan, assignors to Minoltacamera Kabushiki Kaisha, Osaka, Japan
No Drawing. Filed Nov. 30, 1966, Ser. No. 597,850
Int. Cl. C23b 9/02
U.S. Cl. 204—14 10 Claims

1. An electrolytic composition consisting essentially of:
50%–80% by weight formamide;
16%–40% by weight boric acid, and
1%–15% by weight oxalic acid anhydride.

3,445,350
METAL PLATING OF PLASTIC MATERIALS
Kenneth A. Klinger, Belpre, Ohio, John J. Randall and Joseph M. Sakach, Jr., Washington, W. Va., assignors to Borg Warner Corporation, Chicago, Ill., a corporation of Illinois
No Drawing. Filed Oct. 11, 1965, Ser. No. 494,861
Int. Cl. C23b 5/60
U.S. Cl. 204—30 15 Claims

To improve the adhesion between a substrate, which includes an acrylonitrile-butadiene-styrene (ABS) graft polymer, and a layer of metal electrolytically deposited thereon, the surface of the substrate is treated with an ABS solvent.

3,445,351
PROCESS FOR PLATING METALS
Donald A. Swalheim and Robert W. Mackey, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Oct. 21, 1964, Ser. No. 405,362
Int. Cl. C23b 5/52, 5/50, 5/14
U.S. Cl. 204—37 3 Claims

A bright tin coating on a base metal strip of high corrosion resistance is prepared by electroplating the base metal with a nickel or nickel-tin alloy preplate of about 2×10^{-6} to about 65×10^{-6} inch in thickness; plating tin on the preplate and then flow brightening by heating the tin-coated base metal at an elevated temperature of about 540° to 850° F.

3,445,352
GOLD ELECTROPLATING PROCESS AND SOLUTION
Gwynne I. Edson, Norristown, Pa., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
No Drawing. Filed Sept. 23, 1966, Ser. No. 581,463
Int. Cl. C23b 5/28
U.S. Cl. 204—46 6 Claims

3. A process for gold plating a substrate, comprising:
immersing the surface of the substrate to be plated in an aqueous solution consisting essentially, in each liter of aqueous solution, of about 40 to about 80 grams of potassium aurocyanide, of about 6 to about 9 grams of potassium cyanide and of about 32 to about 48 grams of potassium hydroxide; and
passing an electric current through the solution with the substrate to be plated being the cathode and the anode being the insoluble type.

3,445,353
ELECTROLYTE AND METHOD FOR ANODIZING FILM FORMING METALS
Alfred J. Harendza-Harinxma, Trenton, N.J., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed July 11, 1966, Ser. No. 564,332
Int. Cl. C23b 9/00; H01g 1/01
U.S. Cl. 204—56 10 Claims

1. An electrolyte composition consisting essentially of:
an alkali metal silicate,
glyoxal,
at least 50 weight percent water, and
a minor proportion of an inorganic, hygroscopic stabilizer;
the proportions of said silicate, glyoxal and water being controlled to produce a viscous, relatively stable material.

9. The method of anodically oxidizing a film forming metal comprising:
covering the area of said metal to be anodized with a viscous electrolyte comprising an alkali metal silicate, glyoxal and at least 50 weight percent water;

connecting said metal as the anode in an electrolytic cell; and

passing a current through said metal and said electrolyte.

3,445,354

ELECTROLYSIS

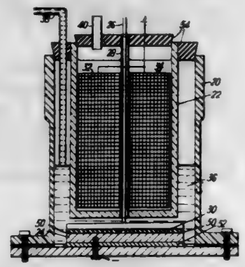
Peter John Herbert Carnell, Wilfrid Jesse Skinner, and Michael Staines Spencer, Norton-on-Tees, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

Filed Jan. 4, 1965, Ser. No. 423,155

Claims priority, application Great Britain, Jan. 8, 1964, 878/64; Aug. 7, 1964, 32,225/64

Int. Cl. B01k *3/02*

U.S. Cl. 204—73 **3 Claims**



There is provided a process for electrolyzing a dissolved substance to give a dissolved product wherein the susceptibility of the process to diffusion limitation is decreased by subjecting at least one electrode to a wiping action while immersed in the electrolyte whereby the stagnant boundary layer adjacent the electrode is at least partially removed.

3,445,355

METHOD AND COMPOSITION FOR THE ELECTROLYTIC ETCHING OF BERYLLIUM-COPPER ALLOYS

Paul T. Woodberry, Reading, Mass., and Herman Koretzky, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

No Drawing. Filed July 15, 1966, Ser. No. 565,386

Int. Cl. C23b *3/02*

U.S. Cl. 204—141 **9 Claims**

1. A method for smoothly etching the surface of a Be-Cu alloy part containing grains of cobalt beryllide comprising anodically etching said part in an electrolyte of the following composition:

a major portion of hydrofluosilicic acid, as 30% by weight H_2SiF_6,

a minor portion of ethylene glycol,

a small amount of hydroxylamine hydrochloride, and

a minor portion of isopropyl alcohol containing dissolved therein a small amount of 2,2′ diquinoline.

5. An electrolyte composition for smoothly etching a Be-Cu alloy part containing cobalt beryllide grains when said part is immersed as an anode in said electrolyte comprising:

a major portion of hydrofluosilicic acid, as 30% by weight H_2SiF_6,

a minor portion of ethylene glycol,

a minor portion of isopropyl alcohol having dissolved therein a small amount of 2,2′ diquinoline, and

a small amount of hydroxylamine hydrochloride.

3,445,356

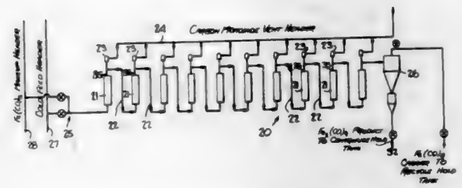
SYNTHESIS OF IRON ENNEACARBONYL

Heinz Paul Beutner, Arlington, Mass., and Charles Edward O'Neill, Upper Montclair, N.J., assignors, by direct and mesne assignments, to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware

Filed Aug. 25, 1966, Ser. No. 575,032

Int. Cl. C01g *49/16;* **B01j** *1/10*

U.S. Cl. 204—157.1 **10 Claims**



5. A continuous process for photochemically producing iron enneacarbonyl comprising irradiating a flowing stream of essentially pure liquid iron pentacarbonyl at a temperature below about 20° C. with light within the wavelengths of 400 to 700 millimicrons to form iron enneacarbonyl dispersed in said iron pentacarbonyl, separating the iron enneacarbonyl from said liquid pentacarbonyl, cooling the separated iron pentacarbonyl and recycling the cooled iron pentacarbonyl to the irradiation step.

3,445,357

PROCESS FOR PREPARING CYCLIC ORGANIC COMPOUNDS

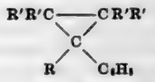
Gary W. Griffin and Haukur Kristinsson, New Orleans, La., assignors to Research Corporation, New York, N.Y., a non-profit corporation of New York

No Drawing. Filed June 15, 1966, Ser. No. 557,622

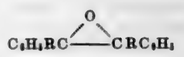
Int. Cl. C07c *1/20, 3/24;* **B01j** *1/10*

U.S. Cl. 204—158 **5 Claims**

1. A method for the preparation of compounds having the formula:



wherein each R′ is hydrogen or a lower alkyl radical having 1 to 4 carbon atoms and R′ is hydrogen, lower alkyl or phenyl, which comprises irradiating a compound of the formula:



with ultraviolet light in the presence of a compound having the formula R′R′C=CR′R′.

3,445,358

RADIATION POLYMERISATION PROCESS OF TRIOXANE AND A ISOCYANATE STABILIZER

Henri Sack, deceased, late of Verneuil-en-Halatte, France, by Berthe Sack, administratrix, Verneuil-en-Halatte, France, assignor to Houilleres du Bassin du Nord & du Pas-de-Calais, Douai, Nord, France

No Drawing. Filed Dec. 21, 1964, Ser. No. 420,209

Claims priority, application France, Dec. 20, 1963, 957,872

Int. Cl. C08g *1/04, 51/64;* **B01j** *1/10*

U.S. Cl. 204—159.21 **1 Claim**

From 0.1 to 5.0 percent by weight of an organic isocyanate, diisocyanate or polyisocyanate is dissolved in molten trioxan and the mixture is then quickly cooled as by pouring it into a non-solvent for either component. The resulting mixture is then subjected to ionizing radiation and then polymerized in a separate vessel under heat treatment. The resulting polyoxymethylene is stable against thermal degradation.

3,445,359

PROCESS FOR THE JOINT MANUFACTURE OF 2,2,3- AND 1,3,3-TRICHLOROBUTANES

Herbert Baader, Hermulheim, near Cologne, Kurt Sennewald, Knapsack, near Cologne, and Helmut Reis, Hurth, near Cologne, Germany, assignors to Knapsack Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany

No Drawing. Filed Sept. 26, 1966, Ser. No. 581,755

Claims priority, application Germany, Nov. 16, 1965, K 57,674

Int. Cl. C07c *17/10;* **B01j** *1/10*

U.S. Cl. 204—163 **6 Claims**

A process for jointly manufacturing 2,2,3- and 1,3,3-trichlorobutanes by contacting 2,2-dichlorobutane with a reactive amount of chlorine and exposing the mixture to ultraviolet light.

3,445,360

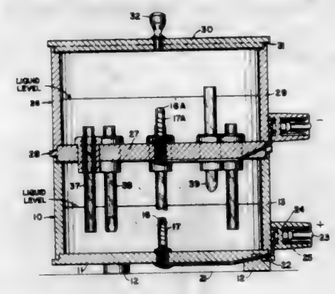
ELECTROPHORESIS MIGRATION CHAMBER AND METHOD OF USING SAME

Hugh D. Via, Jr., 117 N. Bozeman St., Bozeman, Mont. 59715

Filed Oct. 9, 1964, Ser. No. 402,741

Int. Cl. B01k *5/00;* **B01d** *13/02*

U.S. Cl. 204—180 **4 Claims**



An electrolytic apparatus for applying electric current to specimens in open ended tubes in which an open top receptacle is adapted to receive a second open top receptacle thereabove and specimen tubes are mounted in sealing openings in the bottom of the top receptacle with the openings being of substantial vertical axial length with sealing means at each end of the opening so that a specimen tube may be replaced without losing the electrolyte in the top receptacle and the distance between the bottom of the top receptacle and the bottom of the bottom receptacle is such that a specimen tube can be pushed down in the opening but will remain in sealed contact with the bottom of the opening so that a new specimen tube or a plug can be inserted in the upper part of the said opening. The top receptacle may then be removed and the downwardly extending specimen tube removed and thereafter the upwardly extending specimen tube may be pushed down in sealing engagement with both ends of the opening and into contact with the electrolyte in the bottom receptacle.

3,445,361

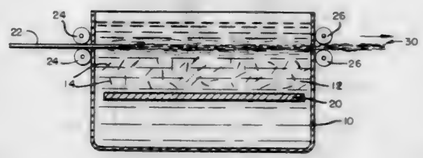
WHISKER REINFORCED COMPOSITE MATERIALS PRODUCED BY ELECTROPHORETIC DEPOSITION

Richard W. Sicka, Brecksville, Selwyn H. Rose, Warrensville Heights, and Theodore M. Harkulich, Chagrin Falls, Ohio, assignors to Horizons Research Incorporated, a corporation of Ohio

Filed May 4, 1966, Ser. No. 547,665

Int. Cl. C23c *13/04*

U.S. Cl. 204—181 **5 Claims**



Whisker reinforced composite materials are produced by a process in which the whisker material, in suspension, is electrophoretically deposited on a conductive filament moving through the suspension, whereby the whiskers are deposited aligned parallel to the axis of the filament.

3,445,362

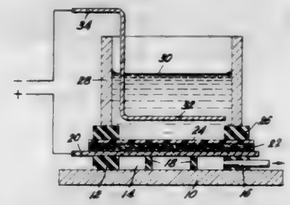
ELECTRODEPOSITED OLEFIN INTERPOLYMERS AND METHODS FOR MAKING SAME

Sui-Wu Chow and Rodwin E. Gulick, Somerville, and Frederick W. Orttung, Jr., Middlesex, N.J., assignors to Union Carbide Corporation, a corporation of New York

Continuation-in-part of application Ser. No. 431,716, Feb. 10, 1965. This application June 30, 1966, Ser. No. 561,877

Int. Cl. C23c *13/02*

U.S. Cl. 204—181 **27 Claims**



1. Method of coating a substrate with an olefin polymer which comprises electrodepositing, at a potential of at least 5 volts D.C., said olefin polymer onto a conductive anodic substrate from an aqueous bath containing an admixture of water and a carboxyl containing α-olefin polymer salt having monovalent cations, the α-olefin content of said polymer salt being at least 50 mole percent of the total polymer salt.

3,445,363

GLASS-ELECTRODE

Wilhelm Simon and Dorothée Wegmann, Zurich, Switzerland, assignors to Gebrüder Möller Glasblaserei, Zurich, Switzerland

Filed Nov. 5, 1964, Ser. No. 409,082

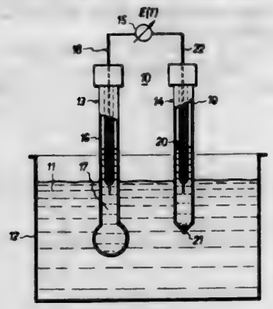
Claims priority, application Switzerland, Nov. 13, 1963, 13,946/63

Int. Cl. B01k *3/06, 3/04*

U.S. Cl. 204—195 **12 Claims**

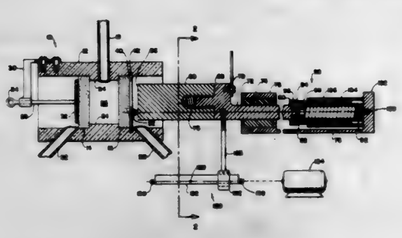
A glass-electrode cell assembly comprising a given reference electrode and a glass-electrode, said glass-elec-

trode incorporating an internal reference electrode and a buffer solution filling housed in said glass-electrode, wherein said buffer solution filling is selected so that there



is achieved independently of the temperature of the assembly, a potential of the cell assembly of zero at a pH of 7 of the sample.

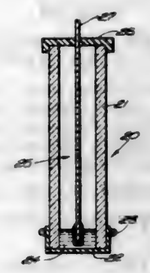
3,445,364
VIBRATOR-DEPOLARIZER FOR COULOMETRIC TITRATOR
Allen Strickler, Fullerton, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed Dec. 30, 1964, Ser. No. 422,191
Int. Cl. C23b *5/78*; B01k *3/06*
U.S. Cl. 204—195 **15 Claims**



A coulometric reagent generator in which means are provided for vibrating the titrant generating electrode and for pulsating the electrolyte delivered to the generator to maximize the titrant output of the generator. In one embodiment, the titrant generating electrode is formed of a dissolvable material such as silver and means are provided for automatically advancing such electrode toward the electrolyte chamber of the generator as the electrode dissolves during the generating process.

3,445,365
ELECTRODE WITH ORGANIC LIQUID ION-EXCHANGER RETAINED BY MEMBRANE
James W. Ross, Newton, Mass., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 390,016, Aug. 17, 1964. This application Aug. 10, 1965, Ser. No. 478,583
Int. Cl. B01k *3/10, 3/02*
U.S. Cl. 204—195 **7 Claims**

In an electrode for determining the concentration of ionic species in an aqueous solution wherein the sensing portion is a liquid organic phase containing an organic ion exchange material capable of exchanging ions with the aqueous solution and the organic phase being substantially immiscible with the aqueous solution, the improvement being a porous membrane for supporting the organic phase in interfacial contact with the aqueous solution at the pores of the membrane, the membrane being



a sheet of substantially homogeneous, electrically insulating material through which the pores extend substantially perpendicularly, the porosity of the membrane being less than about 1×10^{-3}, and the material being substantially chemically inert to both the organic phase and the aqueous solution.

3,445,366
PRESSURIZED ELECTRODE
Willem Vermeer, Barneveld, Netherlands, assignor to Maatschappij voor Electrische Bedrijfsautomatisering Electrofact N.V., Amersfoort, Netherlands, a Dutch limited-liability company
Filed Aug. 25, 1965, Ser. No. 482,517
Claims priority, application Netherlands, Aug. 31, 1964, 6410141
Int. Cl. B01k *3/02, 3/00*
U.S. Cl. 204—195 **10 Claims**



A probe for measuring pH-values in a fluid is composed of a housing forming a longitudinally extending chamber open at one end an exhaust tube disposed within the housing and slidably positionable through the chamber. The exhaust tube extends into the fluid being measured. The exhaust tube and the chamber within the housing are dimensioned to provide a difference in effective cross sectional areas acted upon by fluid being measured and the electrolyte fluid, to assure that the electrolyte fluid is pressurized to an extent greater than the fluid being measured.

3,445,367
CATALYST AND PROCESS FOR MAKING OLEFIN POLYMERS OF NARROW MOLECULAR WEIGHT DISTRIBUTION
Lyle R. Kallenbach, College Station, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Nov. 22, 1965, Ser. No. 509,154
Int. Cl. C08f *1/66*; B01j *11/46*
U.S. Cl. 260—94.9 **10 Claims**

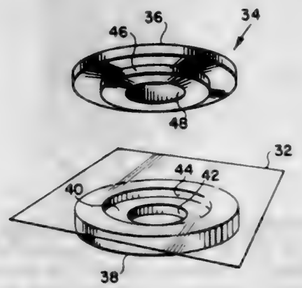
A catalyst of chromium oxide supported on silica, alumina, zirconia, or thoria is modified by the incorporation of ammonium fluoroborate, heavy metal fluoroborate, or heavy metal fluorosilicate. The catalyst is employed in an improved polymerization process for making olefin polymers having narrow molecular weight distribution.

3,445,368
REFERENCE ELECTRODE
Manfred Detemple, Mainz, Germany, assignor to Jenaer Glaswerk Schott & Gen., Mainz, Germany, a corporation of Germany
Filed Nov. 26, 1965, Ser. No. 509,893
Claims priority, application Germany, Dec. 11, 1964, J 27,100
Int. Cl. B01k *3/02, 3/04*
U.S. Cl. 204—195 **2 Claims**



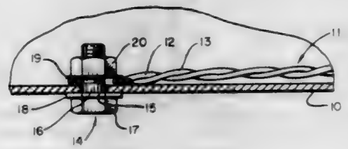
The invention relates to a reference electrode for measuring electrochemical potentials. A liquid-to-liquid junction means comprising a plurality of short wires made of precious metal and twisted or arranged parallel to each other or fused along their lines of contact and forming a plurality of capillaries, is arranged between the reference electrode electrolyte and the medium to be measured.

3,445,369
ELECTROLYTIC SENSOR WITH IMPROVED MEMBRANE SUPPORT
Joe A. Porter, Whittier, Calif., and Ronald F. Waters, Arlington, Va., assignors to Beckman Instruments, Inc., a corporation of California
Filed Oct. 31, 1966, Ser. No. 590,900
Int. Cl. B01k *3/00*
U.S. Cl. 204—195 **5 Claims**



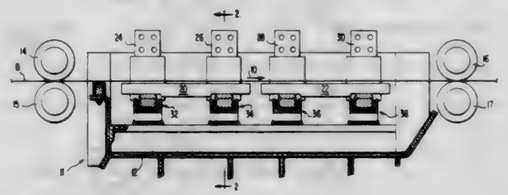
1. A cell for polarographic analysis of a constituent in a sample comprising:
- a body having a recess in one end thereof;
- a pair of spaced electrodes positioned in said recess and adapted to be joined by an electrolyte in said recess;
- a substantially flat membrane permeable to said constituent but impermeable to the electrolyte;
- a pair of frictionally engaged discs clamping said membrane under tension therebetween in a flat plane, said discs having aligned openings therein in alignment with one of said electrodes; and
- readily releasable means securing said pair of discs to said end of said body in such a position that the portion of said membrane within the openings in said discs bears against the end of said one of said electrodes.

3,445,370
CORROSION PREVENTION DEVICE FOR IRRIGATION PIPE
Roger M. Sherman, 975 Roble Ridge, Palo Alto, Calif. 94306
Filed May 7, 1965, Ser. No. 454,151
Int. Cl. C23 *13/00*
U.S. Cl. 204—197 **4 Claims**



A cathodic system for preventing the corrosion of aluminum pipe including a sacrificial zinc wire located within the pipe and secured by anchoring means at the ends of the wire to the inside pipe wall.

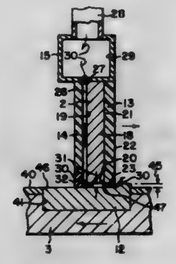
3,445,371
ANODE STRUCTURE FOR CONTINUOUS STRIP ELECTROPLATING
Samuel S. Johnston, Steubenville, Ohio, assignor to National Steel Corporation, a corporation of Delaware
Filed June 15, 1966, Ser. No. 557,830
Int. Cl. C23b *5/68*; B01k *3/00*
U.S. Cl. 204—206 **5 Claims**



1. In a plating cell for continuous strip electroplating in which metallic strip travels longitudinally through a plurality of plating cells with a bottom surface of the strip immersed in plating solution and in predetermined spaced relationship with a plating metal source, anode structure comprising
- a plurality of elongated anode bars, and
- a plurality of anode bar support members, the support members being elongated and extending lengthwise in a direction transverse to strip travel and being spaced from each other along the direction of strip travel,
- each anode bar support member presenting an upper surface for carrying plating current,

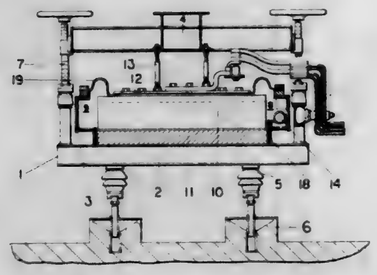
the individual anode bars being arranged in side-by-side relationship and extending lengthwise in the direction of the strip travel between spaced anode bar support members with bottom surface portions being in current conducting relationship with the upper surfaces of the support members and covering the upper surfaces of the support members.

3,445,372
APPARATUS FOR ELECTROCHEMICALLY REMOVING THE SURFACE LAYER FROM A WORKPIECE
Robert E. Fromson, Churchill, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 13, 1965, Ser. No. 513,417
Int. Cl. B23p *1/16, 1/00*
U.S. Cl. 204—212 5 Claims



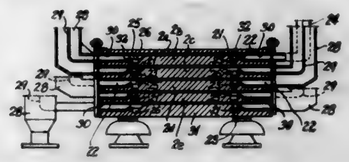
An apparatus for electrochemically removing a surface layer from a metal workpiece. The metal is removed by electrolytic dissolution as the working face of a cathodic tool electrode moves across the surface while a working gap is maintained. The electrolyte is fed to the gap in the same direction as the electrode is moving and the electrolyte is prevented from moving rearwardly by a wiper bar at the rear of the electrode.

3,445,373
MERCURY CATHODE ELECTROLYSIS CELL
Josef Schücker, Saarlandstr. 3; Franz Glos, Kaiserstrasse 43; and Willi Nemetz, Am Zehnthof 19, all of 46 Dortmund, Germany
Filed Nov. 14, 1966, Ser. No. 593,791
Int. Cl. C22d *1/04*
U.S. Cl. 204—219 4 Claims



1. An electrolysis cell for the production of chlorine and alkali hydroxides by means of graphite anodes and a mercury cathode comprising a support, a cell bottom on said support, a side board arrangement at opposite sides of and spaced from said cell bottom providing channels, anode block means disposed above said cell bottom, means for delivering electrical potential to said anode block means, said last means including a metal plate on said anode block means, a mercury cathode in said channel, and a flexible sheet membrane between said anode block means and said side board arrangement thereby to seal said anode block means from the atmosphere.

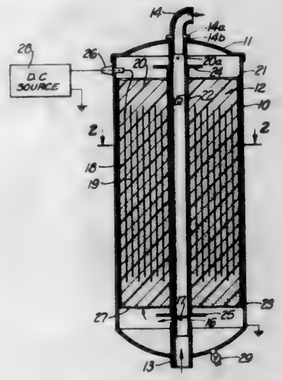
3,445,374
ALKALI CHLORIDE ELECTROLYTIC MERCURY CELLS
Tsuyoshi Ishimatsu 1 of 12 of 4 Sakuragaoka, Tamamura, Minami Tama-gun, Tokyo, Japan
Filed Sept. 1, 1965, Ser. No. 484,268
Claims priority, application Japan, Sept. 5, 1964, 39/50,806; Sept. 13, 1964, 39/70,126
Int. Cl. C23b *5/68*; C22d *1/04*
U.S. Cl. 204—270 17 Claims



Alkali chloride electrolytic mercury cells which are adapted to be superimposed one upon the other, each cell having a metallic cover, the inner face of which is coated successively with a layer of titanium and a layer of a platinum group metal and the latter layer serves as the anode in the cells.

WITHDRAWN
3,445,375

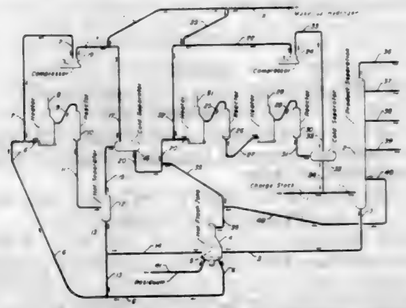
3,445,376
ELECTROFILTER
Richard W. Stenzel, 1880 McKinney Way, Apt. 20–H, Seal Beach, Calif. 90740
Filed Dec. 1, 1966, Ser. No. 598,299
Int. Cl. C10g *33/02*; B01d *13/02*
U.S. Cl. 204—302 3 Claims



1. An electrofilter for the removal of liquid and solid particles from oils of relatively low conductivities, comprising a spirally wrapped assembly of two oppositely charged electrodes utilizing a pliable porous organic filter medium to insulate and separate the electrodes from each other, said electrodes being constructed of metallic foil sufficiently thin and flexible so as to exert only slight distorting forces on the filter medium in the spirally wrapped state, said filter medium completely occupying the interelectrode space and extending longitudinally beyond the electrodes to protect them from external handling distor-

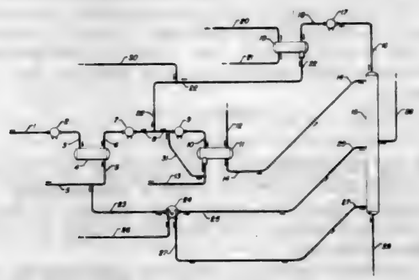
tions and contact with each other and with external objects; conducting means for attaching one of said electrodes to an electric power source and the other to ground; means for establishing a high unidirectional voltage gradient between said electrodes, encasing means for said assembly having appropriate inlet and outlet passages, and sealing means for permitting flow of said oils longitudinally through said assembly in a non-bypassing manner.

3,445,377
DESULFURIZATION AND CONVERSION OF BLACK OILS TO MAXIMIZE GASOLINE PRODUCTION
Laurence R. Steenberg, Chicago, Ill., assignor to Universal Oil Products, Company, Des Plaines, Ill., a corporation of Delaware
Filed Sept. 26, 1967, Ser. No. 670,546
Int. Cl. C10g *7/00, 37/00*
U.S. Cl. 208—93 6 Claims



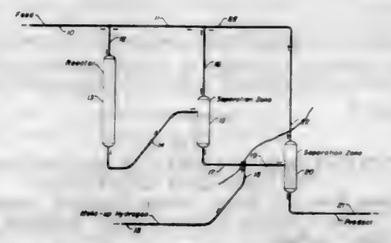
The conversion of contaminated hydrocarbonaceous material commonly referred to in the art as "black oil." Charge stock is initially admixed with liquid product effluent, the mixture being separated to provide a heavy fraction boiling above the gasoline boiling range. This heavy fraction is introduced into a sectioned, subatmospheric flash zone to provide a synthetic crude to be converted into lower boiling hydrocarbon products. The flash zone is sectioned in its lower portion to provide two separate flash chambers having a common upper portion for distillation.

3,445,378
SEPARATION PROCESS
Richard R. De Graff, Arlington Heights, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
Filed Oct. 11, 1967, Ser. No. 674,497
Int. Cl. B01d *3/38*; C10g *39/00, 37/00*
U.S. Cl. 208—104 10 Claims



Separation process wherein a reactor effluent containing vapor, liquid, and normally gaseous contaminants is separated in a system comprising a hot phase separator, two cold phase separators, and a steam stripping column. The process has particular application to the separation of the typical reactor effluent from a hydrotreating reaction zone or a hydrocracking reaction zone wherein the reactor effluent comprises hydrogen, hydrocarbon vapor, hydrocarbon liquid, hydrogen sulfide, and ammonia.

3,445,379
METHOD FOR CONVERTING HYDROCARBONS
Andrew C. Hansen, Jr., Palatine, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
Filed Apr. 13, 1967, Ser. No. 630,556
Int. Cl. C10g *13/00, 23/00*
U.S. Cl. 208—107 6 Claims



Method for converting hydrocarbons under conditions which consume hydrogen. The effluent from the reaction zone is passed through two separation stages, one at high pressure and then one at low pressure. Relatively impure makeup hydrogen is physically admixed with the converted hydrocarbons prior to the low pressure separator. Relatively pure makeup hydrogen is passed from the low pressure separator back to the reaction zone. The invention is applicable generally to hydrogenation reaction processes.

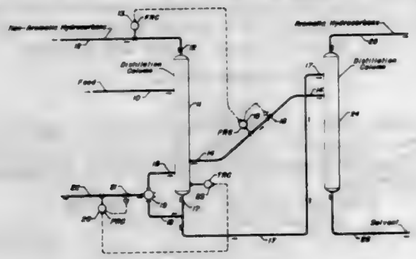
3,445,380
TREATING SOUR HYDROCARBON DISTILLATES CONTAINING MERCAPTO COMPOUNDS AND ACIDIC, SURFACE-ACTIVE MATERIALS
Peter Urban, Northbrook, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed July 7, 1967, Ser. No. 651,657
Int. Cl. C10g *21/08, 19/02*
U.S. Cl. 208—206 10 Claims

A sour hydrocarbon distillate containing mercapto compounds and acidic, surface-active materials is treated by (a) contacting the distillate with finely divided, solid NaOH or KOH, (b) separating the distillate which now contains alkali metal salts of the acidic, surface-active materials, (c) washing the distillate with an aqueous solution containing a detergent, such as a salt of an alkyl aryl sulfonate and (d) contacting the washed distillate with an oxidizing agent and a phthalocyanine catalyst in an alkaline solution to recover a distillate substantially reduced in mercapto compounds. The pretreatment steps with solid alkali metal hydroxide and the aqueous detergent wash eliminate acidic, surface-active materials, e.g. metallic naphthenates and phenolates, which have a deleterious effect on the phthalocyanine catalyst.

3,445,381
METHOD FOR CONTROL OF SOLVENT SEPARATION PROCESSES
Richard R. De Graff, Arlington Heights, and Martin W. Perga, Hoffman Estates, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
Filed May 29, 1967, Ser. No. 641,756
Int. Cl. C10g *21/28, 7/00*
U.S. Cl. 208—313 7 Claims

Method of solvent extracting aromatic hydrocarbons from a suitable feedstock such as catalytic reformate.

Solvent extract is fractionated to recover aromatic hydrocarbons in a two-tower system comprising first extractive



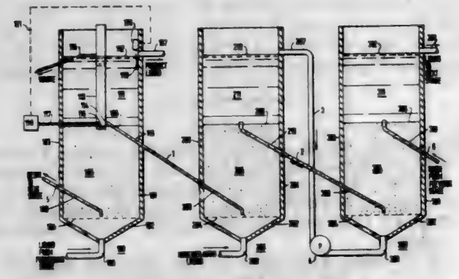
distillation and then fractionation. The extractive distillation column is controlled to provide optimum preheat to the subsequent aromatic recovery fractionation column.

3,445,382

CONTINUOUS MULTISTAGE ION EXCHANGE METHOD AND APPARATUS

Peter Frederick Wace, Oxford, England, assignor to United Kingdom Atomic Energy Authority, London, England

Filed Feb. 14, 1966, Ser. No. 527,117
Claims priority, application Great Britain, Feb. 18, 1965, 7,087/65
Int. Cl. C02b *1/16*; B01j *1/06*; B01d *15/04*
U.S. Cl. 210—24 **11 Claims**



A multistage ion exchange system using a plurality of countercurrent ion exchange columns each containing a fluidized bed. Successive columns are interconnected by narrow tubes each of which extends from near the bottom of the bed of a stage to a position slightly above the top of the bed in a succeeding stage to transfer the exchange resin from one stage to a succeeding stage.

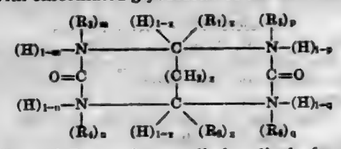
3,445,383

PROCESS FOR TREATING SEWAGE

Roland J. Horvath, South Euclid, Charles G. Parsons, Mentor, and Toby T. Zettler, Shaker Heights, Ohio, assignors to Diamond Shamrock Corporation, a corporation of Delaware

No Drawing. Filed Jan. 28, 1966, Ser. No. 523,524
Int. Cl. C02b *1/36, 3/08*
U.S. Cl. 210—62 **4 Claims**

The present invention teaches treatment of sewage effluent with chlorinated glycolurils of the structure:



wherein R_1 and R_2 are lower alkyl radicals from 1 to 4 carbon atoms and R_3, R_4, R_5 and R_6 are chlorine and x, m, n, p and q being 1. Preferred compounds used in the process of this invention are 1,3,4,6-tetrachloroglycoluril; 1,5-dimethyl - 2,4,6,8 - tetrachloro - 2,4,6,8 - tetrazabicyclo-(3·3·1)-nonan-3,7-dione and dichloroglycoluril.

3,445,384

DRY-TYPE FIRE-EXTINGUISHER COMPOSITION WITH HIGH ELECTRICAL RESISTANCE

Martin Hans Schreiber, Neuruppin, Germany, assignor to VEB Feuerloschgeratewerk Neuruppin, Neuruppin, Germany, a corporation of Germany

No Drawing. Continuation-in-part of application Ser. No. 470,591, July 8, 1965. This application Nov. 30, 1967, Ser. No. 686,801
Int. Cl. A62d *1/00*
U.S. Cl. 252—2 **10 Claims**

Fire-extinguisher composition in the form of a dry powder containing, in addition to conventional constituents, a mixture of formaldehyde-cresol resin and asbestos powder, the asbestos/resin mixture constituting up to one-fifth by weight of the total.

3,445,385

STABLE MINERAL OIL-SILICONE OIL COMPOSITIONS

Richard Dickran Vartanian, Bound Brook, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed June 2, 1967, Ser. No. 643,051
Int. Cl. D08m *15/30*; C10m *1/52*
U.S. Cl. 252—8.8 **8 Claims**

This invention relates to a process for the preparation of a silicone oil-in-mineral oil dispersion which comprises agitating a mixture of the two oils having at least 50% mineral oil, in the presence of an organophilic organoammonium bentonite, said bentonite material being present in an amount which is effective to maintain the silicone oil homogeneously dispersed throughout the resulting mixture. It relates further to the resulting composition.

3,445,386

DETERGENT COMPOSITIONS

Ferdinand P. Otto, Woodbury, N.J., and Andreas Logothetis, Philadelphia, Pa., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Jan. 13, 1967, Ser. No. 608,969
Int. Cl. C10m *1/48, 1/36*; C10l *1/10*
U.S. Cl. 252—32.7 **11 Claims**

Lubricant compositions containing polypropenylsuccinimide amides, imidazolines, and imidazolidines, wherein polypropenyl group is derived from polypropene having a molecular weight of from about 500 to about 3000, possess improved detergency at high temperatures. The lubricant compositions can optionally contain alkaline earth metal salts of sulfonic acids and phosphosulfurized polyolefins and zinc dialkyl dithiophosphates. The succinimide products are also useful as fuel additives.

3,445,387

POLAR SUBSTITUTED POLYMERS AS DETERGENTS-VISCOSITY INDEX IMPROVERS

Thomas V. Liston, Kentfield, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 477,935, Aug. 6, 1965. This application Aug. 9, 1967, Ser. No. 659,294
Int. Cl. C10m *1/50*; C08f *15/40*
U.S. Cl. 252—32.7 **17 Claims**

Terpolymers having two different 1-olefins of from 2 to 6 carbon atoms and 1-olefin of from 4 to 30 carbon atoms having at least one basic nitrogen atom at least β to the olefinic carbon atom or a highly hindered basic nitrogen atom at least α to the olefinic carbon atom. The polymers have an intrinsic viscosity in the range of 0.2 to 1.5 dl./g. The polymers find use in lubricating oils for viscosity index improvement, acid neutralization and detergency.

3,445,388

PREPARATION OF PETROLEUM SOLUBLE-OIL BASES

Frederick W. Schuessler, Valparaiso, Ind., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed Mar. 13, 1967, Ser. No. 622,408
Int. Cl. C10m *1/40*; C07c *139/06*
U.S. Cl. 252—33 **2 Claims**

Petroleum oils, preferably hydrofined dewaxed petroleum oils of suitable viscosity range, are first treated with weak sulfuric acid of 85% to 92% strength, and the weak surfuric acid-treated oil then treated with fuming sulfuric acid to form sulfonic acids which are then neutralized, in situ in the acid-treated oil, with sodium hydroxide to yield soluble-oil bases containing preferentially oil-soluble petroleum sulfonates.

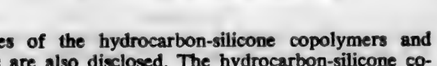
3,445,389

SILICONE LUBRICANT

Robert L. McKellar, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed Mar. 29, 1965, Ser. No. 443,631
Int. Cl. C10m *3/44, 1/50*; C07f *7/04*
U.S. Cl. 252—49.6 **37 Claims**

A hydrocarbon-silicone copolymer is disclosed in which a diorganopolysiloxane contains some organic radicals having at least 18 carbon atoms, such as



Mixtures of the hydrocarbon-silicone copolymers and alkanes are also disclosed. The hydrocarbon-silicone copolymers and the mixtures are useful as lubricants.

3,445,390

METHOD OF HIGH TEMPERATURE LUBRICATION AND FLUID OPERATION

James A. Brennan, Cherry Hill, N.J., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 420,806, Dec. 23, 1964. This application Dec. 7, 1967, Ser. No. 688,655
Int. Cl. C10m *3/44*; C07f *7/02*
U.S. Cl. 252—49.6 **6 Claims**

At very low and very high temperatures, the lubrication of metal surfaces and hydraulic operation are effectively carried out using as the lubricant or fluid, a methyl (C_8- to C_{10}-alkyl) silicone produced by reacting a straight-chain aliphatic olefin of 6 to 10 carbon atoms with a methyl hydrogen siloxane, having a molecular weight of from about 800 to about 3000 there being no more than one hydrogen atom attached to each silicone atom. The methyl hydrogen siloxane reactant contains from about 10 to about 40 reaction sites available for reaction with the olefin. The fluids used in the method of this invention are further characterized by the fact that no residual Si—H bonds remain in the molecule as measured by infra-red.

3,445,391

ORGANIC COMPOSITIONS CONTAINING AMINOQUINONES

Milton Braid, Barrington, and Derek A. Law, Pitman, N.J., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Oct. 31, 1966, Ser. No. 590,482
Int. Cl. C10m *1/32*; C08f *45/60*
U.S. Cl. 252—51.5 **22 Claims**

Lubricating oils containing aminobenzoquinones or aminonaphthoquinones to improve oxidation stability.

3,445,392

NONFOAMING PERFLUORINATED POLYETHERS

William Henry Gumprecht and Rulon Edward Johnson, Jr., New Castle County, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 18, 1967, Ser. No. 639,311
Int. Cl. C10m *3/24*; C07c *43/00*
U.S. Cl. 252—54 **3 Claims**

Nonfoaming lubricants of the formula

$$C_3F_7O[CF(CF_3)CF_2O]_nCF_2CF_3$$

having an average molecular weight of about 2000–8500 and a volatility range no broader than about 140 degrees on the centigrade scale.

3,445,393

PACKING AND SEALING COMPOSITION

Cyril Hinds, Lafayette, La., assignor to Oil Center Research, Inc., Lafayette, La., a corporation of Louisiana

No Drawing. Continuation of application Ser. No. 331,359, Dec. 18, 1963. This application Mar. 21, 1967, Ser. No. 624,964
Int. Cl. C10m *1/30, 3/24, 5/18*
U.S. Cl. 252—58 **18 Claims**

A packing and sealing composition which comprises comminuted particles of a polymer selected from the group consisting of polytetrafluoroethylene, polytrifluorochloroethylene, polyvinylidene fluoride and the copolymer of hexafluoropropylene and tetrafluoroethylene, wherein the polymer is sintered and incorporated in a lubricant carrier characterized by an easily extrudable fluid or paste consistency. The invention includes the utilization of sealing and packing compositions of the aforementioned formulation as packing, in stuffing boxes and the like for the sealing or reciprocating or rotating shafts passing therethrough.

3,445,394

VOLTAGE STABILIZED SOLID POLYOLEFIN DIELECTRIC

George H. Hunt, West Newton, Mass., assignor to Simplex Wire and Cable Company, Cambridge, Mass., a corporation of Massachusetts

Continuation of application Ser. No. 367,718, May 15, 1964. This application June 27, 1967, Ser. No. 649,355
Int. Cl. H01b *3/24, 3/18*
U.S. Cl. 252—66 **31 Claims**

A dielectric composition is disclosed consisting of a solid phase polyolefin, e.g., polyethylene, having dispersed therein an aromatic hydrocarbon oil containing at least 40 percent of aromatic or naphthenic hydrocarbons and a voltage stabilizing additive. The voltage stabilizing additives include the halogenated polycyclic aromatic compounds and substituted aromatic hydrocarbon compounds characterized by having an electron acceptor group and an electron donor group potentially hydrogen bonded together by a reversibly transferable proton. Suitable electron acceptor groups include —NO_2—CO, —CN, phenyl and polycyclic aryl; and suitable electron donor radicals include amino, lower alkyl and fluoro. The voltage stabilizing additive is present in amounts ranging from 5 to 50 parts by weight per 100 parts by

weight of aromatic oil, and the total amount of oil and additive present in the polyolefin ranges from 1 to 10 percent by weight based on the polyolefin.

3,445,395

COMPOSITION OF IMPROVED WATER-GLYCOL ANTIFREEZE AND HEAT EXCHANGE MEDIA AND PROCESS FOR MANUFACTURE OF SAME

Matthew A. Boehmer, Allen Park, Mich., assignor to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan

No Drawing. Continuation-in-part of application Ser. No. 452,354, Apr. 30, 1965. This application Oct. 12, 1967, Ser. No. 674,715

Int. Cl. C09k *3/02*

U.S. Cl. 252—75 6 Claims

A liquid composition suitable for use in aqueous liquid heat exchange-type cooling systems for internal combustion engines consisting essentially of about 90 to 96 weight percent dihydroxyaliphatic alkanol having about 2 to 6 carbon atoms, about 0.5 to 3.0 weight percent alkali metal orthophosphate, about 0.1 to 3.0 weight percent alkali metal borate, about 0.1 to 1.0 weight percent mercaptobenzothiazole compound, and about 0.05 to 0.5 weight percent water-soluble complex phosphate depicted by the general formula, $A_xZ_yP_wO_v$, wherein A is alkali metal, Z is selected from the group consisting of zinc and magnesium, P is phosphorous, O is oxygen, x is about 2 to 3.8, y is about 0.1 to 1.0, the ratio x/y is about 2 to 3.8, v is about 7 to 10, w is about 2 to 3 and the ratio v/w is about 3.3 to 3.8, and sufficient minor amount of water necessary to effectively dissolve the components.

3,445,396

METHOD OF MAKING SYNTHETIC RESINS ANTISTATIC AND ANTISTATIC AGENT COMPOSITION THEREFOR

Makoto Funatsu, Wakayama-shi, and Yasuhiro Torimae, Wakayama, Japan, assignors to Kao Soap Co., Ltd., Tokyo, Japan

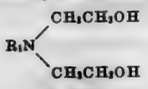
No Drawing. Filed Jan. 5, 1967, Ser. No. 607,370

Claims priority, application Japan, Jan. 14, 1966, 41/2,048

Int. Cl. C08k *1/44*; C08f *29/18, 29/04*

U.S. Cl. 260—92.8 4 Claims

An antistatic composition for incorporation in synthetic resins, said composition comprising a mixture of two compounds represented by the following formulas:



(I)

R_2OH (II)

wherein each of R_1 and R_2 is an alkyl or alkenyl group of 8 to 22 carbon atoms.

3,445,397

SYNERGISTIC COMBINATION OF A HALOGENATED BISPHENOL AND A POLYHALO-SALICYLANILIDE

Robert W. Casely and Darwin R. Noel, Chicago, Ill., assignors to Armour and Company, Chicago, Ill., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 739,477, June 3, 1958. This application Apr. 20, 1962, Ser. No. 188,978

Int. Cl. C11d *9/50*

U.S. Cl. 252—106 10 Claims

10. An antiseptic detergent composition consisting essentially of soap and about 1% by weight of a synergistic combination of a halogenated bisphenol selected from the group consisting of 2,2'-dihydroxy-3,5,6,3',5',6'-hexachlorophenyl methane, 2,2'-dihydroxy-3,5,3',5'-tetrachlorodiphenyl methane and 2,2'-dihydroxy-3,5,6,3',5',6'-hexachlorodiphenyl sulfide and a polyhalo-salicylanilide selected from the group consisting of 5-chlorosalicylic acid-3',4'-dichloroanilide and 5-chlorosalicylic acid-4-chloroanilide and wherein the ratio by weight of said bisphenol to said polyhalo-salicylanilide is 1 to 1.

3,445,398

SYNERGISTIC ANTIBACTERIAL COMPOSITIONS

Eric Jungermann, Chicago, and David Taber, Evanston, Ill., assignors to Armour and Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Apr. 7, 1967, Ser. No. 629,067

Int. Cl. C11d *9/50, 3/48*

U.S. Cl. 252—107 5 Claims

Compositions possessing antibacterial activity through the use of a synergistic mixture of 3,4,4'-trichlorocarbanilide and 2,4,4'-trichloro-2'-hydroxydiphenyl ether and in which the ratio of carbanilide to the diphenyl ether is from about nine to forty parts of the carbanilide to about one part of the diphenyl ether.

3,445,399

METHOD FOR COALESCING A DISPERSED AQUEOUS CAUSTIC PHASE FROM A STREAM OF HYDROCARBONS

Kent Jander, Dyer, Ind., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed Dec. 16, 1965, Ser. No. 514,369

Int. Cl. B01d *17/02*; C10g *33/04*

U.S. Cl. 252—324 4 Claims

An aqueous caustic dispersed in a stream of hydrocarbons is coalesced by passing the stream over silica sand having grains of an angularity between from 0.1 to 0.6 Krumbein roundness factor and an ASTM standard sieve size range between the larger and the smaller-sized particles of less than about 20 holes per lineal inch, said sieve size range also being within the broad range of about ASTM No. 10 sieve size to about ASTM No. 100 sieve size. From 50 to 100 parts of water per 1,000,000 parts of hydrocarbons are introduced into the stream before it passes over the sand. This water washes the sand free of any caustic entrained by the sand.

3,445,400

CHROMATE CORROSION INHIBITING COMPOSITION CONTAINING SURFACE-ACTIVE AGENTS

Clifford R. Everhart, Pampa, Tex., assignor to Midwest Chemical & Processing Co., Inc., Pampa, Tex., a corporation of Texas

No Drawing. Filed Dec. 27, 1965, Ser. No. 516,766

Int. Cl. C23f *11/10, 11/18*

U.S. Cl. 252—389 2 Claims

A corrosion inhibiting composition including sodium bichromate, zinc sulfate, sodium nitrite, and sodium lignin sulfonate and sodium lignosulfonate not to exceed 4.8 percent by weight of the composition.

3,445,401

METHOD OF PREPARING NOVEL MULTI-COMPONENT HETEROGENEOUS CONTACT MATERIAL

John L. Gring, Homewood, Ill., assignor to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 15, 1965, Ser. No. 448,272

Int. Cl. B01j *1/40*

U.S. Cl. 252—455 8 Claims

There is disclosed a multi-component contact material made by bonding a crystalline alumino-silicate having a particle size of up to about 10 microns and a substantially uniform pore size of about 6 to 20 A. to an amorphous, silica-based cracking catalyst of usually at least 20 microns in the smallest dimension, with an inorganic bonding agent that is usually an oxide of an element of atomic 12 to 14. The material can be made by mixing the above components in a slurry and drying and calcining the mixture.

3,445,402

HIGH TEMPERATURE CATALYSTS

Ronald E. Reitmeier, Middletown, Ky., assignor to Catalysts & Chemicals Inc., Louisville, Ky., a corporation of Delaware

No Drawing. Filed Dec. 30, 1964, Ser. No. 422,445

Int. Cl. B01j *11/54*; C10g *35/06*

U.S. Cl. 252—466 6 Claims

A high temperature reforming catalyst, and its method of production, consisting essentially of an Iron Group metal oxide in a pre-set calcium aluminate cement which is treated with 20 p.s.i.g. to 700 p.s.i.g. of steam at 258° F. to 506° F. from two to eight hours to improve crush strength.

3,445,403

ENHANCED CURE OF SELF-CURING ACRYLATE RUBBER COMPOSITIONS

Harold A. Tucker, Shaker Heights, and Henry J. Essig, Westlake, Ohio, assignors to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 292,128, July 1, 1963. This application Sept. 13, 1966, Ser. No. 578,994

Int. Cl. C08f *15/40, 45/72, 45/34*

U.S. Cl. 260—23 5 Claims

Heat curable acrylate elastomers prepared with from 0.2 to 2.5% of an N-substituted alkoxy methyl acrylamide or methacrylamide, 0.2 to 3.8% of another unsaturated amide, and lower alkyl esters of acrylic acid, are more readily cured when they contain organic acids. Such cured compositions also have improved heat aging properties when the acrylate elastomer also includes as a compounding ingredient a polyalkylene glycol.

3,445,404

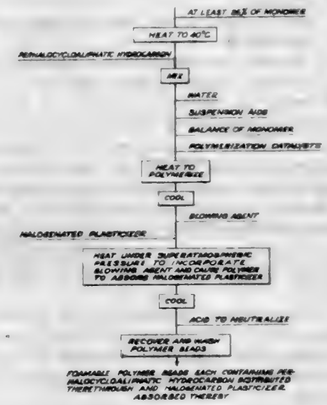
SELF-EXTINGUISHING ARYL VINYL POLYMER PRODUCTS CONTAINING PERCHLOROPENTACYCLODECANE AND TRIS(2,3-DIBROMOPROPYL)PHOSPHATE

Clifford P. Rouden and John Yu, Edmonton, Alberta, Canada, assignors, by mesne assignments, to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Mar. 1, 1965, Ser. No. 435,896

Int. Cl. C08f *45/56, 45/30*; C09k *3/28*

U.S. Cl. 260—2.5 3 Claims



The inclusion of a chlorinated hydrocarbon prior to polymerization of materials such as vinyl monomers so that it becomes chemically bonded to the polymer chain followed by incorporation of a halogenated plasticizer in the suspension gives greatly more flame resistant thermoplastic material than when the fire retardant materials are used separately or added after polymerization.

3,445,405

FLAME-RESISTANT POLYURETHANE COMPOSITIONS

Herwart C. Vogt, Grosse Ile, Mich., assignor to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan

No Drawing. Filed June 1, 1965, Ser. No. 460,569

Int. Cl. C08g *22/04, 51/00*; C09h *3/28*

U.S. Cl. 260—2.5 9 Claims

A polyurethane is prepared from the reaction of a polyisocyanate and a polyether polyol with the condensation product of tris(hydroxymethyl) phosphine oxide and an alkylene oxide.

3,445,406

PROCESS FOR ELASTICIZING FOAMED POLYSTYRENES AND RESULTANT PRODUCT

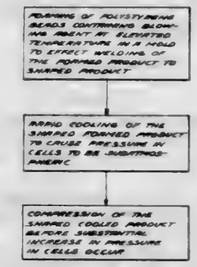
Hermann Koch, Gellertstrasse 12, Hannover, Germany

Filed Aug. 9, 1965, Ser. No. 478,450

Claims priority, application Germany, Aug. 10, 1964, K 53,707

Int. Cl. C08f *47/08, 47/22*

U.S. Cl. 260—2.5 10 Claims



Process for modifying the properties of foamed polystyrenes produced with the aid of a gas developed at an elevated temperature wherein the foamed product is cooled down directly after the foaming operation at least to room temperature sufficiently quickly that the pressure within the cells of the solid foamed product produced is subatmospheric and subsequently compressing such cooled product at a pressure of at least 2 kg./cm.² before diffusion of the atmosphere therein can cause a substantial increase in the pressure within the foamed product.

3,445,407

COMPOSITIONS CONTAINING 2-IMIDAZOLIDINONE FOR SIZING TEXTILE YARNS

Richard F. J. Ingleby, deceased, late of Harlow, Essex, England, by National Provincial Bank Limited, executor, London, England, assignor to Revertex Limited, London, England, a company of Great Britain

No Drawing. Continuation-in-part of application Ser. No. 201,746, June 12, 1962. This application Oct. 10, 1966, Ser. No. 587,370

Int. Cl. C08f *29/30*

U.S. Cl. 260—17.4 7 Claims

A new composition for sizing textile yarns prior to weaving or knitting of the yarn including 1 to 25% by weight of ethylene urea as an additive to a conventional sizing.

3,445,408
POLYAMIDE RESINS
Tibor Gabris, Paris, France, assignor to Liaison S.A., Geneva, Switzerland
No Drawing. Filed Sept. 6, 1966, Ser. No. 577,187
Int. Cl. C08g *20/36, 20/20, 20/38*
U.S. Cl. 260—18 10 Claims

Polymerized fatty acids and polyamines are copolymerized with a sulfur material to produce polyamides containing chemically bound sulfur. The resultant polyamides have heat stability, adhesion, elasticity and in some cases color retention that are considerably improved over the like properties of corresponding polyamides made without the sulfur material. This material may be, in general, an organic compound containing divalent sulfur, such as a thioacid, a thioalcohol, an aminoacid containing divalent sulfur, and elemental sulfur.

3,445,409
COMPOSITIONS CONTAINING TALL OIL PITCH AND EPOXY ETHER RESINS
Vincent Francis D'Agostino, South Huntington, N.Y., assignor, by mesne assignments, to Arizona Chemical Company, New York, N.Y., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 282,600, May 23, 1963. This application Aug. 22, 1966, Ser. No. 573,855
Int. Cl. C08g *45/00, 45/12*
U.S. Cl. 260—18 4 Claims

An epoxy resin composition consists essentially of a heat-cured blend of an epoxy ether resin, an amide of a polymeric fatty acid with an aliphatic polyamine, and a tall oil pitch containing about equal parts of fatty acids, rosin acids, and unsaponifiables.

3,445,410
STORAGE STABLE COATING COMPOSITION COMPRISING ALKYD RESIN, ESTERIFIED INORGANIC ACID, AND VOLATILE BUFFER MATERIAL
John S. Coulter, Ankeny, Iowa, assignor to Iowa Paint Manufacturing Company, Incorporated, Des Moines, Iowa, a corporation of Iowa
No Drawing. Continuation-in-part of application Ser. No. 590,207, Oct. 28, 1966. This application May 23, 1967, Ser. No. 640,475
Int. Cl. C09d *3/66;* C08g *51/78*
U.S. Cl. 260—21 25 Claims

A coating composition and the method of making the same which includes a combination of an alkyd resin, a urea resin, an inorganic acid and a volatile buffer material. The inorganic acid causes cross-linking of the alkyd and urea resins when the buffer material evaporates upon application of the composition as a film.

3,445,411
LOW FILM PRIMER AND RESINS UTILIZED THEREIN
Leroy A. Dunham and William J. Belanger, Louisville, Ky., assignors to Celanese Coatings Company, New York, N.Y., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 447,949, Apr. 14, 1965. This application June 6, 1967, Ser. No. 643,846
Int. Cl. C09d *5/02, 3/28*
U.S. Cl. 260—22 14 Claims

Novel low film paint primers containing novel water soluble amine-containing resins produced in a specific manner and combination from an esterified product of cyclopentadiene containing hydrocarbon resin modified unsaturated fatty acid and an aliphatic polyol, said esterified product adducted with an alpha, beta-ethylenically unsaturated aliphatic dicarboxylic acid to form an adduct and a polyepoxide resin reacted with said adduct.

3,445,412
ADHESIVE FOR BONDING POLYETHYLENE TO CROWN CAPS
Herbert W. Gerhardt, New Britain, and Conrad L. Lynch, Wethersfield, Conn., assignors to The Stanley Works, New Britain, Conn., a corporation of Connecticut
No Drawing. Filed Feb. 3, 1965, Ser. No. 430,183
Int. Cl. C08f *29/10;* C09j *3/14*
U.S. Cl. 260—23 6 Claims

An adhesive composition for securely bonding polyethylene film to a smooth surface metal substrate comprises at least 20 percent by weight of polyethylene having a molecular weight of less than 10,000, at least 10 percent by weight of a terpene resin having a melting point between about 100° C. and 135° C. and a molecular weight of about 1,200 and at least 10 percent by weight of a polymeric linseed drying oil. The adhesive produces a dry film which resists blocking and exhibits the ability of undergoing deformation without flaking or loss of adhesion.

3,445,413
NITROGEN-CONTAINING ACRYLIC ELASTOMERS STABILIZED WITH INORGANIC PHOSPHITES
August H. Jorgensen, Jr., and Philip H. Starmer, Avon Lake, Ohio, assignors to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
No Drawing. Filed Nov. 14, 1967, Ser. No. 683,000
Int. Cl. C08f *45/72, 45/58, 15/40*
U.S. Cl. 260—23 8 Claims

Heat-curable acrylate elastomers prepared with an N-substituted alkoxymethyl acrylamide or methacrylamide and lower alkyl esters of acrylic acid are stabilized with inorganic phosphites, particularly when the polymers contain organic acids which enhance the cure. The cured compositions have improved heat aging properties. Another unsaturated amide may be included in the polymer structure. Acids which can be used to enhance the cure include aliphatic and aromatic acids containing 8 to 20 carbon atoms, and representative stabilizers are the hypophosphites and metaphosphites of metals of Groups II–A, II–B and IV–A of the Periodic Table.

3,445,414
REPLACEMENT OF SOLVENT BY WATER IN PREPARATION OF ELASTOMER LATEX
Eakin M. Glymph, Cuyahoga Falls, and Henry G. Dawson, Akron, Ohio, assignors to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Continuation-in-part of application Ser. No. 358,901, Apr. 10, 1964. This application June 1, 1964, Ser. No. 373,130
Int. Cl. C08f *47/16, 47/18;* C08d *5/00*
U.S. Cl. 260—23.5 23 Claims

1. In a process for emulsifying a hydrocarbon solvent soluble elastomer, including the steps of:
(a) forming an aqueous solution of an emulsifying composition including at least one hydrocarbon soluble emulsifier, the total emulsifier composition content being in the range of from 10% to 50% by weight based on the weight of the elastomer,
(b) forming a hydrocarbon solution of a hydrocarbon soluble elastomer, said hydrocarbon containing from 4 to 10 carbon atoms, and the solids content of the solution being from about 5% to about 10% by weight,
(c) chilling each of said solutions to a temperature of from about 0° C. to about 15° C.,
(d) adding said elastomer solution to said aqueous solution which vigorously agitating the resulting dispersion,
(e) continuing to cool the resulting dispersion to maintain the temperature below the boiling point of the hydrocarbon solvent while applying a shearing force

to the dispersion until the disperse phase has a mass average particle size less than about 10,000 A., and
(f) creaming said dispersion to form a concentrated latex,
the improvement which comprises:
(g) exchanging water for the hydrocarbon solvent under conditions of temperature and pressure sufficient to vaporize the hydrocarbon solvent without substantially removing water and simultaneously adding a solvent replacing volume of water to form a hydrocarbon depleted dispersion prior to creaming said dispersion.

3,445,415
METHOD FOR MAKING ORGANIC LATEXES
Joseph Cekada, Jr., and Donald R. Weyenberg, Midland, Mich., assignors to Dow Corning Corporation, Midland, Mich., a corporation of Michigan
No Drawing. Filed Dec. 9, 1965, Ser. No. 512,769
Int. Cl. C08f *1/74, 35/02*
U.S. Cl. 260—29.6 10 Claims

A method for making organic latexes employing silsesquioxanes as polymerization seeds is disclosed.

3,445,416
PLASTICIZED VINYL CHLORIDE POLYMER COMPOSITIONS
Albert C. Condo, Newtown Square, Pa., assignor to Atlantic Richfield Company, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed Sept. 23, 1966, Ser. No. 581,459
Int. Cl. C08f *15/40*
U.S. Cl. 260—31.8 10 Claims

Thermoplastic compositions having low plasticizer extraction in oil and outstanding low temperature properties comprise a vinyl chloride polymer, a plasticizer for the polymer and a solid thermoplastic graft interpolymer prepared by graft polymerizing either methylmethacrylate or mixtures of methylmethacrylate with another compound having a single vinylidene group copolymerizable therewith onto a butadiene-styrene copolymer having from 50 to 90 weight percent butadiene.

3,445,417
CONTROLLED RELEASE AGENTS
Douglas K. Layne, Hal J. Northrup, and Carl D. Weber, Midland, Mich., assignors to Dow Corning Corporation, Midland, Mich., a corporation of Michigan
No Drawing. Filed Aug. 4, 1965, Ser. No. 477,304
Int. Cl. C08g *47/06, 51/28, 51/30*
U.S. Cl. 260—33.6 5 Claims

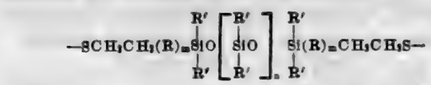
A controllable-release capability can be achieved by certain organopolysiloxane gums, silica and dispersing agent. By controlling the amount of phenyl groups in the organopolysiloxane a sequence of release agents can be formulated having varying release capabilities.

3,445,418
ORGANOSILICON COMPOSITIONS
Robert Muir Gibbon, West Kilbride, and Edward Keith Pierpoint, Largs, Scotland, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed Mar. 24, 1966, Ser. No. 536,961
Claims priority, application Great Britain Apr. 5, 1965, 14,328/65
Int. Cl. C08g *31/42*
U.S. Cl. 260—33.6 21 Claims

A process for the production of a stable organosilicon solution is disclosed, wherein a diorganopolysiloxane having at least two silicon-bonded hydroxyl groups per molecule, a linear organopolysiloxane, a solvent-soluble stannous salt of a carboxylic acid and water are reacted together.

3,445,419
ROOM TEMPERATURE VULCANIZABLE SILICONES
William Vanderlinde, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan
No Drawing. Filed Jan. 21, 1966, Ser. No. 522,075
Int. Cl. C08g *31/22, 47/06*
U.S. Cl. 260—37 19 Claims

A cured composition which is the reaction product of a vinyl terminated organopolysiloxane and an ester of an organic polyol and an acid of the formula HOOCR''SH where R'' is a divalent alkyl radical is disclosed. Also disclosed are compositions of the formula



where the sulfur atom is a sulfur atom of at least one ester described above, R is a divalent alkyl radical, R′ is a monovalent hydrocarbon or halohydrocarbon radical, *m* is 0 or 1 and *n* is over 50. The above compositions cure to resins and elastomers when exposed to air in the presence of alkali but are stable in the absence of air.

3,445,420
ACETYLENIC INHIBITED PLATINUM CATALYZED ORGANOPOLYSILOXANE COMPOSITION
Gust J. Kookootsedes and Edwin P. Plueddemann, Midland, Mich., assignors to Dow Corning Corporation, Midland, Mich., a corporation of Michigan
No Drawing. Filed June 23, 1966, Ser. No. 559,729
Int. Cl. C08g *47/02*
U.S. Cl. 260—37 12 Claims

A curable composition which can be stored in the presence of the catalyst but cures by heating or exposure to the atmosphere is a mixture of an olefin containing organosilicon polymer, an organosilicon compound containing silicon-bonded hydrogen atoms, a platinum catalyst and an acetylenic compound. The composition is usable as elastomers, potting compounds, sealants, dielectric gels, resins, coatings and the like.

3,445,421
POLYOLEFINS STABILIZED WITH DERIVATIVES OF 2-FURYL ACRYLONITRILE
Kshatra Pati Singh, Montreal, Quebec, Canada, assignor to Union Carbide Canada Limited, Toronto, Ontario, Canada, a company of Canada
No Drawing. Filed Apr. 13, 1967, Ser. No. 630,499
Int. Cl. C08f *45/60*
U.S. Cl. 260—45.8 7 Claims

Polymeric materials, particularly high density grades of polyethylene, are stabilized against degradation due to ultra-violet radiation by the incorporation of 2-furyl acrylonitrile derivatives, such as 1-phenyl 2-furyl acrylonitrile, having ultra-violet absorption maxima in the range of from 300 to 360 mμ.

3,445,422
ORGANIC SUBSTRATES CONTAINING BORATE OF POLYALKYL - POLYHYDROXYALKYL - ALKYLENEPOLYAMINE
Henryk A. Cyba, Evanston, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Original application May 12, 1964, Ser. No. 366,921, now Patent No. 3,301,888, dated Jan. 31, 1967. Divided and this application June 22, 1966, Ser. No. 559,410
Int. Cl. C08f *45/60*
U.S. Cl. 260—45.9 7 Claims

Organic substrates such as plastics and rubber containing a stabilizing concentration of a borate of a polyalkyl-

polyhydroxyalkyl-alkylenepolyamine. For example, polypropylene containing 1% by weight of borate of N,N'-di - sec - octyl - N,N' - di - (2 - hydroxyethyl) - ethylenediamine exhibits improved weathering properties.

3,445,423

POLYURETHANE COMPOSITION FOR GLASS COATING AND LAMINATING STABILIZED BY RESORCINOL MONOBENZOATE

Norman B. Sunshine, Mount Prospect, Ill., and Robert M. Hick, Jr., Springfield, and Joseph O. Gould, Norwood, Pa., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 30, 1966, Ser. No. 561,735

Int. Cl. C08g *51/58, 51/60;* B32b *17/06*

U.S. Cl. 260—45.85 2 Claims

There is disclosed an adhesive polyurethane composition containing a stabilizer compound (e.g. resorcinol monobenzoate); because of the presence of the stabilizer, the composition has beneficial utility for the formation of an adherent polyurethane layer on glass and acrylic plastic articles in the process of coating such articles or laminating them to structural members of metal or other materials. The composition is especially useful in applications where it is important that the polyurethane layer retains a high level of bond strength on prolonged exposure to sunlight.

3,445,424

STABILIZATION OF POLYMERS WITH UV STABILIZERS AND ANTIOXIDANTS

Robert J. Martinovich, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 207,017, July 2, 1962. This application Dec. 18, 1967, Ser. No. 691,139

Int. Cl. C08f *45/58, 29/04, 29/02*

U.S. Cl. 260—45.85 2 Claims

A solid polymer of an aliphatic 1-monoolefin is stabilized against weathering by incorporating an antioxidant such as, for instance, dilaurylthiodipropionate or 4,4'-thiobis-(3-methyl-6-t-butyl phenol), and a UV stabilizer such as, for instance, 2-hydroxy-4-n-octoxybenzophenone, into the polymer.

3,445,425

CYCLIC POLYSILOXANES

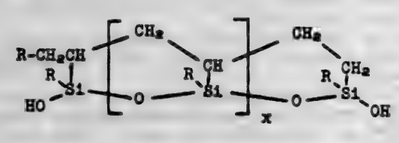
John L. Speier, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed Dec. 5, 1966, Ser. No. 598,892

Int. Cl. C08g *31/09;* C07f *7/18;* C07d *103/04*

U.S. Cl. 260—46.5 2 Claims

A compound of the formula



where R is alkyl, aryl, alkaryl or aralkyl and x is at least 1 is disclosed. These compounds are useful as thermoplastic coating and fibers.

3,445,426

PENTAVALENT SILANE AND TETRAVALENT BORON CATECHOLATES AS POLYMERIZATION CATALYSTS

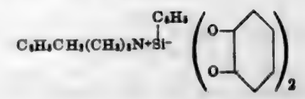
Chi-Long Lee, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

Continuation-in-part of applications Ser. No. 580,850, Aug. 22, 1966, and Ser. No. 545,014, Apr. 25, 1966. This application June 5, 1967, Ser. No. 643,730

Int. Cl. C08g *31/24;* C07f *7/18*

U.S. Cl. 260—46.5 20 Claims

Pentavalent silicon complexes and tetravalent boron complexes of 1,2-dihydroxyphenols are used as polymerization catalysts for diorganocyclotrisiloxanes, 2,2,5,5-tetraorgano-1 - oxa-2,5-disilacyclopentanes and 2,2,5,5-tetraorgano-1-aza-2,5-disilacyclopentanes in the presence of a hydroxyl compound and a polar solvent. Under certain conditions this method provides monodisperse polysiloxanes having a heterogeneity ratio of less than 1.3. For example, hexamethylcyclotrisiloxane is polymerized to a polymer having a molecular weight of 40,000 in one hour and 15 minutes by heating at 52° C., a solution of 40 g. of the siloxane, 40 g. of toluene, .04 g. of



160 parts per million by weight water and 5.5 g. of dimethylsulfoxide. The heterogeneity ratio of the polymer was 1.1.

3,445,427

ADHESIVE-FORMING COMPOSITIONS CONTAINING RANDOM POLY - m - CARBORANYLENE-SILOXANE COPOLYMERS AND ADHESIVES PREPARED THEREFROM

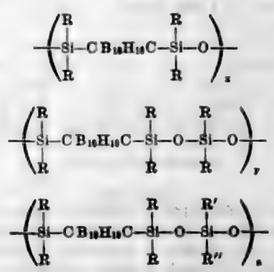
Trescott B. Larchar, Sr., Hamden, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed Dec. 29, 1967, Ser. No. 694,402

Int. Cl. C08g *33/18;* C09j *3/16*

U.S. Cl. 260—46.5 14 Claims

Adhesive-forming compositions are provided according to this invention by mixing a random poly-m-carboranylenesiloxane copolymer comprising units having the following formulas



wherein each R is an independently selected alkyl or aryl; R' is hydrogen, alkyl, aryl, vinyl or a vinyl-containing moiety; R'' is vinyl or a vinyl-containing moiety; x and y are independently selected integers greater than 1 and z is 0 or an integer greater than 0 with the proviso that the mole ratio of $x/y+z$ is between about .1 and about 10, with a boron-oxygen-containing compound. These compositions are cured to provide adhesives having high shear strengths and high temperature resistant properties.

3,445,428

PROCESS FOR THE PREPARATION OF POLYCARBONATES CONTAINING REPEATING BIS (HYDROXYARYL CARBONAMIDE) ALKYLENE UNITS

Ludwig Bottenbruch Krefeld-Bockum, Claus Wulff, Krefeld, and Hermann Schnell, Krefeld-Urdingen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Dec. 28, 1965, Ser. No. 517,118

Claims priority, application Germany, Dec. 31, 1964, F 44,860

Int. Cl. C08g *17/13, 51/66*

U.S. Cl. 260—47 9 Claims

A process which comprises reacting bis(hydroxyaryl) compounds, optionally in admixture with other aromatic, aliphatic or cycloaliphatic dihydroxy compounds, with a carbonate precursor characterized in that as the bis(hydroxyaryl) compound, a bis(hydroxyaryl-carbonamide) alkane is used, at least in part, in which the two hydrogen atoms of the nitrogen atoms are substituted by inert organic radicals.

3,445,429

PRODUCTION OF ALIPHATICALLY MODIFIED POLYGLYCIDYL ETHERS

Ralph F. Sellers, Somerset, N.J., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Feb. 3, 1966, Ser. No. 524,861

Int. Cl. C08g *30/02, 30/04*

U.S. Cl. 260—47 5 Claims

This invention relates to the preparation of aliphatically modified polyglycidyl ethers, which can be used as binders in structural glass laminates, by reacting a polyhydric phenol with a polyglycidyl ether of a polyhydric compound having an average of at least two glycidyl ether groups per molecule and then epoxidizing the resultant product, by reaction with an epihalohydrin, in the presence of an alkali hydroxide, to a product having at least two glycidyl ether groups per molecule.

3,445,430

RESINS CONTAINING BORON

Kenneth Petersen, 22 Bellaire Drive, Scotia, N.Y. 12302

No Drawing. Filed June 22, 1966, Ser. No. 559,406

Int. Cl. C08g *33/18*

U.S. Cl. 260—47 10 Claims

Boron containing resins of high thermal stability and resistance to hydrolysis are produced by heating to elevated temperatures with elimination of water of reaction a mixture of one mole boric acid, 1.25 to 2.0 moles of a polyhydric phenol such as resorcinol or hydroquinone and 0.25 to 0.75 mole of an aromatic polyamine such as m-phenylene diamine, 4,4'-diamino diphenyl ether or benzidine. When elimination of water of the condensation polymerization reaction is essentially theoretically complete the resulting thermoplastic resin may be cured to the thermoset stage by further prolonged heating at elevated temperatures or, more rapidly, by reaction with a methylenating agent such as formaldehyde.

3,445,431

ONE STEP PROCESS FOR PREPARING THE REACTION PRODUCT OF A SPACED POLYPHENOL, PHENOL AND AN ALDEHYDE

John D. Nelson, Pittsfield, Mass., assignor to General Electric Company, a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 549,484, May 12, 1966. This application Aug. 15, 1968, Ser. No. 752,763

Int. Cl. C08g *5/10*

U.S. Cl. 260—51 5 Claims

A process for preparing a phenolic resinous condensation product, which process is a one-step process of reacting a spaced polyphenol, a monohydric phenol and an aldehyde in the presence of a particular catalyst and at a temperature of at least 130° C. The catalyst employed may be either an earth-alkali metal, an earth metal or a heavy metal hydroxide or oxide. Further, the aldehyde employed must be present in an amount of less than one mole thereof per mole of the spaced polyphenol and phenol combined.

3,445,432

REACTION OF A SPACED POLYPHENOL, PHENOL AND AN ALDEHYDE

John D. Nelson, Pittsfield, Mass., assignor to General Electric Company, a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 549,463, May 12, 1966. This application Aug. 15, 1968, Ser. No. 752,764

Int. Cl. C08g *5/10;* B32b *27/10*

U.S. Cl. 260—51 8 Claims

An improved process for preparing resinous condensation products, which improved process consists of reacting a methylolated spaced polyphenol with a monohydric phenol in the presence of a particular catalyst at a temperature of at least 130° C. to produce a cross-condensate. The cross-condensate is then reacted with an aldehyde such as formaldehyde in the presence of the same particular catalyst and at a temperature of at least 130° C. The particular catalyst may be either an earth-alkali metal, earth metal or heavy metal hydroxide or oxide and the total aldehyde employed must be less than 1 mole thereof per mole of spaced polyphenol and monohydric phenol combined. The preferred catalyst employed herein is magnesium hydroxide.

3,445,433

COPOLYMERIZATION OF TRIOXANE WITH AN EPOXY-CONTAINING COMONOMER IN THE PRESENCE OF AN ALDEHYDE

Francis B. McAndrew, Springfield, N.J., assignor to Celanese Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 361,548, Apr. 21, 1964. This application Mar. 8, 1967, Ser. No. 621,465

Int. Cl. C08g *1/14, 1/10*

U.S. Cl. 260—67 14 Claims

Trioxane is copolymerized with an epoxy-containing comonomer in the presence of an aldehyde containing at least two carbon atoms in order to reduce the induction period.

3,445,434

COPOLYMERS OF TETRAFLUOROETHYLENE, ETHYLENE AND AN OLEFINIC ACID

Frederic B. Stilmar, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 30, 1964, Ser. No. 407,868

Int. Cl. C08f *15/40*

U.S. Cl. 260—80.71 16 Claims

Copolymers of (1) tetrafluoroethylene, (2) from about 0.75 to 1.75 moles ethylene per mole of tetrafluoroethylene, (3) from about 0.001 to 0.1 mole per mole of tetrafluoroethylene of at least one polymerizable olefinic acid having an acidity constant of from 1.0 to 5.5, the lower alkyl esters, the salts, and the anhydrides of such acids, and, optionally, (4) from 0 to 0.5 mole of an olefin chosen from (a) aliphatic hydrocarbons from 3 to 8 carbon atoms having only one terminal ethylenically unsaturated polymerizable group, (b) polymerizable aliphatic halogenated olefins of 2 to 3 carbons, said halogen being chlorine or fluorine, (c) vinyl alkyl ethers, wherein the alkyl group contains from one to six carbon atoms, and (d) vinyl esters of C_2 to C_{18} alkane carboxylic acids.

3,445,435
POLYMERISATION OF CONJUGATE DIENES

Adrien Azoulay, Pau, and Jean Teitgen, Arthez-de-Bearn, France, assignors to Societe Nationale des Petroles d'Aquitaine, Paris, France

No Drawing. Filed Feb. 18, 1966, Ser. No. 528,360
Claims priority, application France, Feb. 24, 1965, 6,754
Int. Cl. C08d *1/24, 3/06, 3/08*
U.S. Cl. 260—94.3 7 Claims

This invention relates to the polymerization of conjugate dienes and, more particularly, to a process for the emulsion polymerization of butadiene and polymeric substances obtained thereby having a low 1,2-vinyl structure content, having a low 1,4-trans structure content, while the proportion of 1,4-cis structure is relatively high.

3,445,436
POLYURETHANE POLYEPOXIDES

Clarence L. Lake, Cleveland Heights, Larry R. Barron, Euclid, and Robert H. Faud, Lyndhurst, Ohio, assignors to The Tremco Manufacturing Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed June 14, 1966, Ser. No. 557,362
Int. Cl. C08g *22/04, 30/00*
U.S. Cl. 260—75 15 Claims

A polyurethane polyepoxide formed by reacting an organic polyisocyanate with a triol or a mixture of a triol and diol, the mixture having a hydroxyl functionality in excess of 2.3, to form a liquid, isocyanate terminated polyurethane prepolymer; and reacting the prepolymer with a hydroxy aliphatic epoxide compound, or a precursor capable of undergoing epoxidation in situ, or mixtures thereof, to form a polyurethane polyepoxide having a functionality in excess of 2, consisting of epoxy groups.

3,445,437
PROCESS FOR THE PREPARATION OF HIGH MOLECULAR WEIGHT POLYNITROETHYLENE

Murray H. Reich, Princeton, N.J., and Aaron Rothwachs, Bronx, N.Y., assignors to Commercial Solvents Corporation, New York, N.Y., a corporation of Maryland

No Drawing. Filed July 21, 1966, Ser. No. 566,747
Int. Cl. C08f *3/88, 1/28*
U.S. Cl. 260—80 5 Claims

High molecular weight nitroethylene homopolymer which have an inherent viscosity of not less than 0.8. The high molecular weight nitroethylene homopolymers are useful in preparing self-supporting films. A method for preparing high molecular weight nitroethylene homopolymers which consists of polymerizing nitroethylene in the presence of an aryl lithium or alkyl lithium catalyst. The preparation is carried out in a liquid polymerization medium at a temperature of from about −120° to about +20° C.

3,445,438
POLYMERS FROM POLYMERISABLE AMINODICHLOROTRIAZINE DERIVATIVES

Hans Ludwig Honig, Erwin Alfons Müller, and Werner Kühnel, Leverkusen, Günter Kolb, Cologne-Stammheim, and Paul Elzer, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Feb. 16, 1966, Ser. No. 527,773
Claims priority, application Germany Mar. 13, 1965, F 45,518
Int. Cl. C08f *7/12;* D06m *15/00*
U.S. Cl. 260—88.3 7 Claims

Acyloxyalkylaminodichlorotriazines, homopolymers, copolymers and graft polymers thereof and the utility of said polymers for coating textile materials and for use as binders in textile printing and dyeing.

3,445,439
PROCESS FOR PRODUCING POLYVINYL CARBAZOLE

Eric Haydn Cornish, London, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 302,743, Aug. 16, 1963. This application Apr. 13, 1967, Ser. No. 630,533
Int. Cl. C08f *5/00, 45/50*
U.S. Cl. 260—88.3 6 Claims

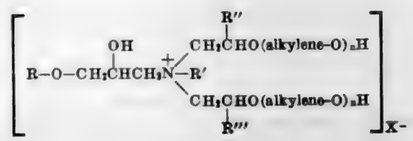
Plasticised polyvinyl carbazole is produced at room temperatures by mixing vinyl carbazole monomer with a phenolic phosphate or phosphite to cause an exothermic reaction.

3,445,440
HYDROXYALKYL QUATERNARY AMMONIUM ETHERS AS ANTISTATIC AGENTS

Peter Vincent Susi, Middlesex, and Frank Joseph Arthen, Jr., Franklin Township, Somerset County, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Oct. 15, 1965, Ser. No. 496,705
Int. Cl. C08f *29/18, 29/04;* C07c *91/26*
U.S. Cl. 260—89.5 7 Claims

Stable polymeric compositions having improved antistatic properties are obtained by incorporating in a polymeric composition a hydroxyalkyl quaternary ammonium ether of the formula:



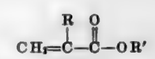
wherein R is aliphatic of from 8–19 carbon atoms or cycloalkyl of 5–6 carbons which may have alkyl substituents of 1–19 carbons; R′ is lower alkyl of 1–3 carbon atoms, R″ and R‴ are individually either hydrogen or lower alkyl of 1–4 carbon atoms; "alkylene" has 2–3 carbons; *n* is a number between zero and ten; and X is an anion.

3,445,441
AMINO-AMIDO POLYMERS

Brian M. Rushton, St. Louis, Mo., assignor to Petrolite Corporation, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 25, 1965, Ser. No. 442,793
Int. Cl. B01d *17/04;* C08g *20/26;* C08f *11/02*
U.S. Cl. 260—89.5 6 Claims

Amino-amido polymers characterized by being a reaction product of at least a polyamine and an acrylate-type compound having the formula



where R is hydrogen or methyl and R′ is methyl, ethyl, propyl, isopropyl, butyl, sec-butyl, tert-butyl, aryl or hexyl, or a cross-linked reaction product. Such polymers are used to break oil-in-water emulsions, to inhibit corrosion, and to clarify water.

ERRATUM

For Class 260—92.8 see:
Patent No. 3,445,396

3,445,442
HIGH MOLECULAR WEIGHT POLY(4-METHYL-1-PENTENE) FIBER

Harold M. Spurlin and Winfred E. Weldy, Wilmington, Del., assignors to Hercules Incorporated, Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 17, 1964, Ser. No. 375,928
Int. Cl. C08f *3/02, 47/12*
U.S. Cl. 260—93.7 1 Claim

1. An oriented fiber of poly(4-methyl-1-pentene) having a reduced specific viscosity of from about 5 to about 6.5 as measured on a 0.1% solution in decahydronaphthalene at 135° C., said fiber retaining at 100° C. at least about 50% of its strength at room temperature, said fiber having a uniform denier and having been oriented by stretching from 250 to 1300%.

3,445,443
PROCESS FOR THE PREPARATION OF POLYOLEFINS WITH A TRANSITION METAL HALIDE-ORGANO ALUMINUM COMPOUND CATALYST

Juntaro Sasaki, Iwakuni-shi, and Toshio Senoue and Tadaichi Tokuzumi, Ootake-shi, Japan, assignors to Mitsui Petrochemical Industries, Ltd., Tokyo, Japan, a corporation of Japan

No Drawing. Filed Mar. 15, 1965, Ser. No. 439,933
Claims priority, application Japan, Mar. 24, 1964, 39/15,898
Int. Cl. C08f *1/42*
U.S. Cl. 260—93.7 5 Claims

A process for the preparation of 1-olefin polymers, particularly polypropylene, which comprises employing a catalyst system consisting of an admixture of (1) an active complex insoluble in a liquid hydrocarbon obtained by reacting (a) a halogen compound of a metal at the highest valency selected from the group consisting of the metals of the Groups IV–A, V–A, and VI–A of the Periodic Table with (b), an organo metallic compound of the metals selected from the group consisting of alkali metals, alkaline earth metals, zinc cadmium and earth metals, and (2), an aluminum compound of the formula $Al(OR)R'X$, wherein R and R′ are monovalent radicals selected from the group consisting of alkyl and phenyl and X is a halogen atom.

3,445,444
PROCESS FOR PURIFYING POLYOLEFINS

Abraham Kutner, Wilmington, Del., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 18, 1966, Ser. No. 521,400
Int. Cl. C08f *1/88, 1/42*
U.S. Cl. 260—93.7 4 Claims

Olefin polymers prepared with a catalyst comprising an alkylaluminum compound and a reduced titanium halide are worked up by quenching the polymerization slurry with an alcohol, treating the quenched slurry with a small amount of sulfuric or phosphoric acid, and thereafter extracting with an aqueous alkaline reagent. The sulfuric or phosphoric acid treatment is effective in reducing the corrosivity of the polymer to metals in subsequent processing operations.

3,445,445
MODIFICATION OF POLYOLEFINIC RESINS

Herman S. Bloch, Skokie, and Louis Schmerling, Riverside, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed June 13, 1966, Ser. No. 556,916
Int. Cl. C08f *27/03, 27/00*
U.S. Cl. 260—93.7 9 Claims

Polyolefinic resins can be halocarbonylated in a process whereby the polyolefinic resin is treated with carbon monoxide and a halo-substituted paraffinic compound.

3,445,446
PROCESS AND CATALYST FOR POLYMERIZING BUTADIENE OR ISOPRENE WHEREBY THE CATALYST IS COMPOSED OF AN ORGANOALUMINUM COMPOUND, IODINE, AND TiX_2 OR TiX_3 COMPLEXED WITH FATTY ACID AMIDES

Ralph C. Farrar, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Jan. 19, 1966, Ser. No. 521,505
Int. Cl. C08d *1/14, 3/06, 3/10*
U.S. Cl. 260—94.3 8 Claims

Polymers of 1,3-butadiene or isoprene having a high cis content are prepared by a catalyst which forms on mixing (1) an organoaluminum compound, (2) iodine, and (3) a complex which forms on mixing titanium dichloride or titanium trichloride with fatty acid amides.

ERRATUM

For Class 260—94.9 see:
Patent No. 3,445,367

3,445,447
TERT-AMYLOXYCARBONYL DERIVATIVES OF AMINO ACIDS

Shumpei Sakakibara, Hyogo-ken, Japan, assignor, by direct and mesne assignments, of one-half each to Ajinomoto Co., Inc., Tokyo, and Tanabe Seiyaku Co., Ltd., Osaka-shi, Japan

No Drawing. Filed Jan. 27, 1966, Ser. No. 523,283
Claims priority, application Japan, Feb. 4, 1965, 40/6,213; Nov. 29, 1965, 40/73,522
Int. Cl. C07c *117/02, 103/52, 135/00*
U.S. Cl. 260—112.5 6 Claims

The amino group of amino acids and their esters may be protected for later formation of peptides by reaction with tert-amyloxycarbonyl azide which is readily prepared from tert-amyloxycarbonyl chloride, and the latter compound may be employed directly in the reaction with the esters. The tert-amyloxy reagents are more stable and can be prepared in better yields than the known corresponding butoxycarbonyl derivatives whose advantages they share.

3,445,448
METHODS FOR PRODUCING GLUES AND/OR GELATINS AND PROTEIN AND PHOSPHATE RICH RESIDUES

Joseph P. McCann, Roselle Park, N.J., assignor to The Theobald Industries, Kearny, N.J., a corporation of New Jersey

No Drawing. Filed Apr. 14, 1967, Ser. No. 630,846
Int. Cl. C09h *3/00, 7/00*
U.S. Cl. 260—118 12 Claims

Method for producing glue or gelatin and useful residues by soaking to plumped weight (measuring three (3) times) mixtures consisting essentially of collagen containing sponge bone and non-bone animal material in the ratio of 1 to 1–4 in aqueous HCl (conc. 1.5–5%); increasing pH to 3.0–4. Treating with SO_2 (at least .2 part per 100 parts of original material) then heating mass in water to recover glue or gelatin and also water-insoluble protein-and-phosphate-rich residue.

3,445,449
AZOPHTHALOCYANINE DYESTUFFS

Fritz Meininger and Hartmut Springer, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed July 27, 1965, Ser. No. 475,248
Claims priority, application Germany, July 29, 1964, F 43,600
Int. Cl. C09b *29/38, 45/28*
U.S. Cl. 260—147 6 Claims

Water-soluble azophthalocyanine dyestuffs characterized by the presence of chloroethylsulfonyl, sulfatoethyl-

sulfonyl, acetoxyethylsulfonyl, vinylsulfonyl, chloroethylsulfonylamino, sulfatoethylsulfonylamino, acetoxyethylsulfonylamino or vinylsulfonylamino reactive groups, which dyestuffs are distinguished by high absorptivity and tinctorial strength, and are very fast to wetting and to light.

3,445,450
METAL-CONTAINING DISAZO-DYESTUFFS
Fritz Meininger and Anni Signon, Frankfurt am Main, and Klaus Berner, Hofheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed Dec. 6, 1965, Ser. No. 511,993
Claims priority, application Germany, Dec. 12, 1964, F 44,683
Int. Cl. C09b *62/78, 62/84, 45/24*
U.S. Cl. 260—148 6 Claims

Fiber-reactive copper, cobalt and chromium complex compounds of disazo-dyestuffs containing

$$—SO_2—CH_2—CH_2—O—SO_3H$$

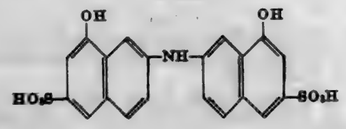
or

$$—SO_2—CH=CH_2$$

radicals as the reactive group, which dyestuffs are especially suitable for dyeing or printing cellulose materials and yield on such materials dyeings of intense reddish-blue to black shades having very good fastness to wet processing.

3,445,451
REACTIVE AZO DYES
Harry W. Grimmel, Warwick Neck, and Jonas St. Alban, Greene, R.I., assignors to American Hoechst Corporation, New York, N.Y.
No Drawing. Filed Jan. 11, 1966, Ser. No. 519,969
Int. Cl. C09b *62/78, 62/84, 45/08*
U.S. Cl. 260—148 8 Claims

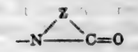
Reactive azo dyes having a dinaphtholamine nucleus of the formula



in which one of the naphthol moieties is substituted in ortho- or peri-position to the hydroxy by phenylazo substituted by $—SO_2CH_2CH_2OSO_3H$ or $—SO_2NHCOHN_2$, the phenyl thereof optionally being further substituted by chlorine, bromine, nitro, carboxylic acid, sulfonic acid, hydroxy, lower alkoxy or sulfonamide, and the other naphthol moiety optionally being substituted in ortho- or peri-position by phenylazo substituted by chlorine, bromine, nitro, $—SO_3H$, —COOH, hydroxy, lower alkoxy, sulfonamide. $—SO_2CH_2CH_2OSO_3H$, $—SO_3NHCONH_2$ or phenylazo-dinaphtholamino-azophenyl, as well as metal complex compounds thereof.

3,445,452
AZOBENZENE-AZO-ANILINE DYESTUFFS CONTAINING A PYRROLIDINONO, A PIPERIDONO OR A PHTHALIMIDONO GROUP
David J. Wallace and Max A. Weaver, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Dec. 10, 1965, Ser. No. 513,089
Int. Cl. C09b *33/12, 62/40*
U.S. Cl. 260—152 8 Claims

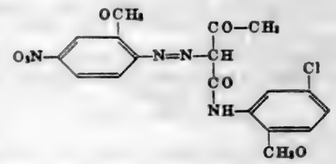
Azobenzene-azo-aniline compounds are useful as dyes for hydrophobic textile materials and are characterized by a heterocyclic group attached to the coupler moiety having the formula

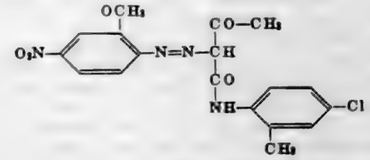


wherein Z represents the carbon atoms completing a pyrrolidinono radical, a piperidono radical, or a phthalimidino radical.

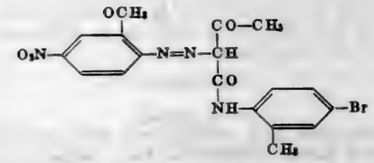
3,445,453
YELLOW MONOAZO PIGMENTS HAVING A GREENISH TINT
Emil Stocker, Rieben, Switzerland, assignor to J. R. Geigy A.G., Basel, Switzerland
No Drawing. Filed July 1, 1966, Ser. No. 562,112
Claims priority, application Switzerland, July 9, 1965, 9,638/65
Int. Cl. C09b *45/18*; C09d *3/32, 11/02*
U.S. Cl. 260—193 1 Claim

Yellow monoazo pigments are disclosed having the formulas:





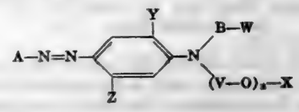
and



Also provided are multicolor prints comprising a pigment combination consisting essentially of a yellow component of the above formula together with a blue copper phthalocyanine pigment.

3,445,454
MONO AZO DYESTUFFS
Brian Ribbons Fishwick and Andrew Tze-Chiu Liu, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed July 23, 1965, Ser. No. 474,469
Claims priority, application Great Britain Aug. 10, 1964, 32,450/64
Int. Cl. C09b *29/06*; D06p *1/08*
U.S. Cl. 260—205 3 Claims

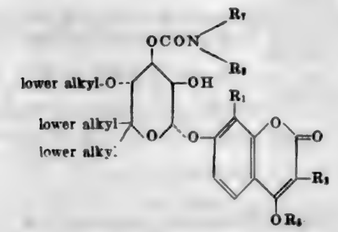
Water-insoluble azo dyestuffs free from sulphonic acid or carboxylic acid groups having the formula

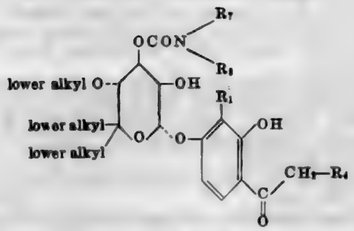


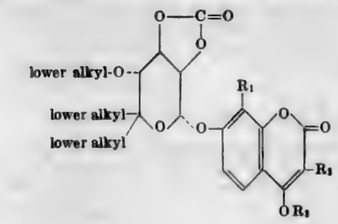
wherein A is the radical of a diazo component of the benzene series; Y is hydrogen, a halogen atoms, a lower alkyl or lower alkoxy group; Z is hydrogen, a halogen atom, lower alkyl, lower alkoxy, trifluoromethyl or acyclamino; B is alkylene; W is cyano, alkoxy, aryloxy, acyloxy, carboalkoxy, or aryloxycarbonyl group or B—W represents a group of the formula—$(V—O—)_n$; V is alkylene; X is hydogen or an acyl group and *n* is an integer from 2–10.

3,445,455
L-LYXOPYRANOSYLOXY-ALKYLCOUMARIN-CONTAINING GLYCOSIDES
Joseph Kiss and Hans Spiegelberg, Basel, and Bruno Peter Vaterlaus, Binningen, Switzerland; Albert Israel Rachlin, Hackensack, N.J., and Karl Doebel, Ossining, N.Y., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey
No Drawing. Continuation of application Ser. No. 150,203, Nov. 6, 1961, now Patent No. 3,268,511, dated Aug. 23, 1966. Divided and this application Apr. 25, 1966, Ser. No. 544,832
Claims priority, application Switzerland, Nov. 7, 1960, 12,423/60
Int. Cl. C07c *49/18*; C07d *7/46*
U.S. Cl. 260—210 9 Claims

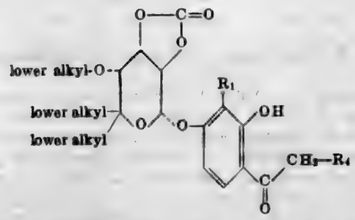
Compounds of the formulas







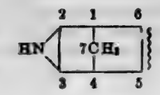
and



useful as intermediates in the synthesis of novobiocin, dihydro novobiocin and structurally analogous antibiotics are disclosed along with methods for their preparation.

3,445,456
NOVEL AZIRIDINE DERIVATIVES AND PRODUCTION THEREOF
Hiroshi Tanida, Osaka, and Teruji Tsuji, Takatsuki-shi, Japan, assignors to Shionogi & Co., Ltd., Osaka, Japan
No Drawing. Filed Oct. 27, 1965, Ser. No. 505,400
Claims priority, application Japan, Nov. 5, 1964, 39/62,796
Int. Cl. C07d *23/06, 55/02*; A61k *27/00*
U.S. Cl. 260—239 6 Claims

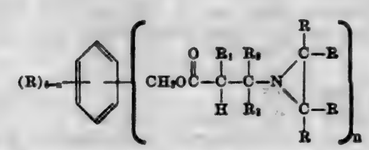
A compound from the group of compounds of the formula:



and the acid addition salts thereof, wherein the symbol ⁞ represents hydrogen atoms at positions 5 and 6, a double bond between said positions or a condensed benzene ring with or without one or more substituents selected from the group consisting of lower alkyl group, lower alkoxy group, halogen, amino group, alkylamino group, di(lower)alkylamino group and cyano group between the 5- and 6-positions. The compounds are useful as anti-depressants and psychomotor stimulants.

3,445,457
POLYVALENT ALKYLENEIMINE ADDUCTS OF α,β-UNSATURATED ESTERS
Joseph Adrian Hoffman, Somerville, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Sept. 28, 1966, Ser. No. 582,527
Int. Cl. C07d *23/06*; C08d *1/36*
U.S. Cl. 260—239 4 Claims

This invention relates to a compound of the formula:



wherein R in each occurrence is selected from the group consisting of hydrogen and lower-alkyl; R_1, R_2, and R_3 are individually selected from the group consisting of hydrogen, halogen, lower-alkyl and phenyl; and *n* is an integer of from 1 to 6.

The compounds of this invention, which contain one or more aziridinyl groups, are reactive monomers which can be used in the preparation of polymeric materials.

3,445,458
5-ARYL-3-CARBOXYACYLOXY-2H-1,4-BENZODIAZEPIN-2-ONES AND SALTS THEREOF
Stanley C. Bell, Philadelphia, Pa., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 134,569, Aug. 29, 1961. This application Apr. 12, 1965, Ser. No. 447,564
Int. Cl. C07d *53/06*; A61k *27/00*
U.S. Cl. 260—239.3 4 Claims

The preparation of novel 3-carboxyacyloxy esters of 5-aryl-3-hydroxy-2H-1,4-benzodiazepin-2-ones having anticonvulsant and muscle-relaxant effects is described.

3,445,459
e-CAPROIMIDO PYRIDAZINES

Edward W. Pietrusza, Morris Township, Morris County, and Rudolph Pinter, Morristown, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 185,537, Apr. 6, 1962. This application Apr. 4, 1966, Ser. No. 539,720

Int. Cl. C07d *57/22, 41/06;* C08g *20/12*

U.S. Cl. 260—239.3 2 Claims

The present invention relates to the preparation of the e-caproimido pyridazines from substituted pyridazines and metal salts of e-caprolactam. These pyridazines are useful in promoting the polymerization of lactams as described in the copending application Ser. No. 185,537, filed Apr. 6, 1962. Particularly outstanding as a promoter is 3,6-di(e-caproimido)pyridazine which is a novel compound.

3,445,460
2,3,4,5-TETRAHYDRO-1,5, BENZOTHIAZEPINE-4-ONE-3-YL-ACETIC ACID AND ITS METHYL ESTER

Jacques Bourdais, Paris, France, assignor to Centre National de la Recherche Scientifique, Paris, France, a corporation of France

No Drawing. Filed Aug. 8, 1966, Ser. No. 570,730

Claims priority, application France, Aug. 11, 1965, 28,008

Int. Cl. C07d *93/40;* A61k *27/00;* A01n *9/22*

U.S. Cl. 260—239.3 1 Claim

This invention is directed to 2,3,4,5-tetrahydro-1,5-benzothiazepine-4-one-3-yl-acetic acid and its methyl ester. These compounds are useful as fungicides.

3,445,461
STEROID DIAZIRINES AND DIAZIRIDINES AND A PROCESS FOR PRODUCING SAME

Poul Borrevang and Peter Fasrup, Copenhagen, Denmark, assignors to Novo Terapeutisk Laboratorium A/S, Copenhagen, Denmark, a Danish company

No Drawing. Filed Aug. 5, 1965, Ser. No. 477,602

Claims priority, application Great Britain, Aug. 12, 1964, 32,814/64; May 25, 1965, 22,075/65

Int. Cl. C07c *173/10, 167/00*

U.S. Cl. 260—239.5 13 Claims

Derivatives of the pregnane series and of 17,17-lower dialkyl steroids which carry a spiro-diazirine group, a spiro-diaziridine group or substituted spiro-diaziridine group in the 3-position are disclosed. These compounds may be prepared by reaction of chloramine in the presence of ammonia with the corresponding steroid which has in the 3-position a carbonyl group, an imino group or a group convertible to an imino group under the conditions of the reaction. The new compounds show anti-androgenic properties and compounds may be obtained with gestagenic effect.

3,445,462
16α,17α-CYCLIC ACETALS OF 6-HALO Δ^4-PREGNENE-16α,17α-DIOL-3,20-DIONE

Howard J. Ringold and George Rosenkranz, Mexico City, Mexico, assignors, by mesne assignments, to Syntex Corporation, a corporation of Panama

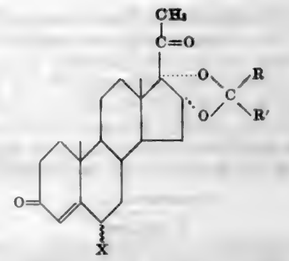
No Drawing. Continuation-in-part of application Ser. No. 56, Jan. 4, 1960. This application May 4, 1960, Ser. No. 26,708

Claims priority, application Mexico, June 24, 1959, 55,013

Int. Cl. C07c *173/00, 169/34;* A61k *27/00*

U.S. Cl. 260—239.55 36 Claims

1. A compound of the following formula:



wherein X is selected from the group consisting or fluorine, chlorine and bromine; and R and R' are each selected from the group consisting of hydrogen and a hydrocarbon radical containing up to 8 carbon atoms.

3,445,463
3-(CYCLIC ACYL)OXYMETHYL CEPHALOSPORINS

Earle M. Van Heyningen, Indianapolis, Ind., assignor to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Continuation-in-part of application Ser. No. 184,511, Apr. 2, 1962. This application June 17, 1965, Ser. No. 464,844

Int. Cl. C07d *99/24;* A61k *21/00*

U.S. Cl. 260—243 6 Claims

The invention is directed to derivatives of 7-acylamido-desacetylcephalosporanic acid which are useful antibiotic substances.

3,445,464
PHENOTHIAZINE DERIVATIVES

Ernst Jucker, Ettingen, Anton Ebnöther, Reinach, Basel-Land, and Erwin Rissi, Basel, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland

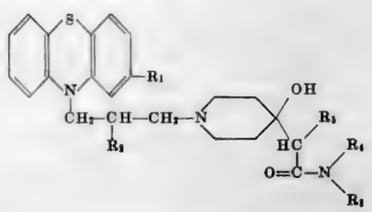
No Drawing. Filed May 8, 1967, Ser. No. 636,596

Claims priority, application Switzerland, May 10, 1966, 6,799/66; May 16, 1966, 7,081/66; Sept. 8, 1966, 13,014/66, 13,016/66; Mar. 8, 1967, 3,370/67, 3,371/67, 3,372/67

Int. Cl. C07d *93/14, 29/24;* A61k *27/00*

U.S. Cl. 260—243 29 Claims

The present invention provides compounds of formula:



in which R_1 is hydrogen or halogen, acyl of 2 to 5 carbon atoms, alkoxy or alkylthio of 1 to 4 carbon atoms, or trifluoromethyl or cyano, R_2 is hydrogen or methyl, and either each of R_3 and R_4 is alkyl of 1 to 4 carbon atoms, or R_3 and R_4 together with the nitrogen are pyrrolidine, piperidine, morpholine or N-methyl-piperazine, and R_5 is hydrogen, or R_3 is alkyl of 1 to 4 carbon atoms, and R_4 together with R_5 is dimethylene, and the pharmaceutically acceptable acid addition salts thereof, which compounds are characterized by sedative and neuroleptic properties. The production of these compounds is furthermore described.

3,445,465
3-(2-FLUOROPHENYL)-1,2,3-BENZOTRIAZIN-4-ONE

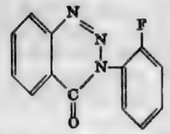
Gerhard Satzinger, Gundelfingen, Freiburg, Germany, assignor to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 432,012, Feb. 11, 1965. This application Sept. 11, 1967, Ser. No. 666,955

Int. Cl. C07d *55/08*

U.S. Cl. 260—248 1 Claim

This invention relates to 3-(2-fluorophenyl)-1,2,3-benzotriazin-4-one of the formula:



which is useful as an anoretic agent in the mammalian body.

3,445,466
PRODUCTION OF AROMATIC CARBOXYLIC ACIDS CONTAINING REACTIVE CHLORINE ATOMS

Erwin Hahn, Vierabeim, Hesse, and Matthias Seefelder, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Feb. 18, 1966, Ser. No. 528,378

Claims priority, application Germany, Feb. 24, 1965, B 80,671

Int. Cl. C07d *91/60, 51/36;* C09b *45/18*

U.S. Cl. 260—251 1 Claim

Production of carboxylic acids having the Formula I below by heating a benzene trichloromethyl compound of Formula II below with formic acid at 40–120° C. and synthesis of reactive dyes therewith.

3,445,467
BIPHENYL DIPHENYLALKANE AND DIPHENYL-ETHER COMPOUNDS, AMINO - SUBSTITUTED ON THE PHENYL RINGS

Albrecht Hueni and Ernst Schweizer, Basel, Switzerland, and Dorothy Schroeder, Austin, Tex., assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 18, 1965, Ser. No. 456,831

Claims priority, application Switzerland, May 25, 1964, 6,791/64; Apr. 13, 1965, 5,207/65

Int. Cl. C07d *51/42;* A61k *27/00*

U.S. Cl. 260—256.4 20 Claims

Compounds of the formula

Py—NH—Ph—X—Ph'—Py'

where Py and Py' each represents a pyrimidyl-(2) residue carrying in position 4 an amino group (Y) which is substituted by an aliphatic residue carrying an amino group and containing more than one carbon atom between the N-atoms; Ph and Ph' are phenylene residues and X represents a direct bond, oxygen or a lower divalent aliphatic hydrocarbon residue, and a process for the preparation thereof. The compounds are useful, inter alia, as antibacterial and anti-inflammatory agents.

3,445,468
SPIRO THIOPHOSPHATES

Rudi F. W. Rätz, Hamden, and Arthur D. Bliss, Guilford, Conn., assignors to Olin Mathieson Chemical Corporation, New Haven, Conn., a corporation of Virginia

No Drawing. Filed Oct. 13, 1964, Ser. No. 403,651

Int. Cl. C07d *105/04;* A01n *9/36*

U.S. Cl. 260—256.5 10 Claims

A series of valuable spiro thiophosphates has been provided by the reaction of 3,9-dichloro-2,4,8,10-tetraoxa-3,9-diphosphaspiro[5.5]undecane - 3,9 - disulfide with the alkali metal salts of a number of aromatic and heterocyclic hydroxy compounds. These thiophosphates have been found to be valuable pesticides, particularly as nematocides.

3,445,469
α-MONOGLYCERIDE OF 4-(2'-CARBOXYPHENYLAMINO)-8-CHLORO-QUINOLINE

Andre Allais, Les Lilas, and Pierre Girault, Paris, France, assignors to Roussel-UCLAF, Paris, France, a corporation of France

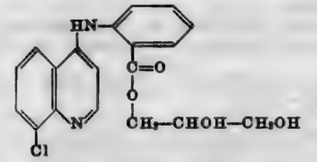
No Drawing. Filed Feb. 1, 1966, Ser. No. 523,848

The portion of the term of the patent subsequent to Feb. 1, 1983, has been disclaimed

Int. Cl. C07d *33/48;* A61k *27/00*

U.S. Cl. 260—287 3 Claims

The α-monoglyceride of 4-(2'-carboxyphenylamino)-8-chloro quinoline having the formula



and its non-toxic, pharmaceutically acceptable acid addition salts. The compounds are anti-inflammatory and analgesic agents.

3,445,470
HETEROCYCLIC DERIVATIVES OF ARYL SULFONYL CARBAMIC ACID

Ernst Jucker, Ettingen, and Adolf J. Lindenmann, Basel, Switzerland, assignors to Sandoz Ltd., Basel, Switzerland

No Drawing. Filed Jan. 6, 1965, Ser. No. 423,869

Claims priority, application Switzerland, Jan. 9, 1964, 222/64

Int. Cl. C07d *43/06;* A61k *27/00*

U.S. Cl. 260—292 6 Claims

Phenyl and substituted phenyl sulfonyl carbamic acid derivatives are prepared by treating an arylsulfonyl compound with a heterocyclic secondary amine. The resulting novel compounds, e.g., 8-(p-tolylsulphonyl-carbamoyl)-8-azabicyclo[3,2,1]octane, are useful as anti-diabetics.

3,445,471
LOWER ALIPHATIC SULTONE DERIVATIVES OF SCOPOLAMINE AND ATROPINE

Jean P. M. Raudnitz, 10 Rue Anatole de la Forge, Paris, and Henri Wahl, 14 bis Blvd. Cotte, Enghien-les-Bains, Val-d'Oise, France

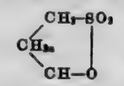
No Drawing. Filed Dec. 1, 1965, Ser. No. 510,960

Claims priority, application France, Dec. 3, 1964, 997,305

Int. Cl. C07d *43/10, 43/06;* A61k *27/00*

U.S. Cl. 260—292 9 Claims

A group of new compounds are prepared by the reaction of an aliphatic sultone of the formula



wherein *n* is an integer of at least one, preferably one or two, with a tropane alkaloid, preferably 1-hyoscyamine, d-1-hyoscyamine (atropine), homatropine and scopolamine. These novel compounds may be represented by the formula

$$Tr^+—A—SO_3^-$$

wherein A is an alkaline residue and Tr^+ is the residue of the starting tropane alkaloid linked to A through the nitrogen atom of the tropane nucleus.

3,445,472
MONO- AND DI-AROYL PYRIDYLETHYL AND PIPERIDYLETHYL INDOLES
John L. Archibald, Malvern, Pa., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Dec. 3, 1965, Ser. No. 511,358
Int. Cl. C07d *57/00, 31/40, 29/34*
U.S. Cl. 260—293.4 7 Claims
Mono- and di-aroyl pyridylethyl and piperidylethyl indoles, useful as analgesic and hypotensive agents.

3,445,473
3-ANILINO-THIOPHENE-4-CARBOXYLIC ACIDS, ESTERS, AND AMIDES
Heinrich Ruschig, Bad Soden, Taunus, Willi Meixner, Hofheim, Taunus, and Hans Georg Alpermann, Kelkheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed Mar. 30, 1966, Ser. No. 538,569
Claims priority, application Germany, Apr. 10, 1965, 45,788
Int. Cl. C07d *63/16, 99/06;* A61k *27/00*
U.S. Cl. 260—293.4 12 Claims
3-anilinothiophenes substituted in the anilino ring by halogen, trifluoromethyl, lower alkyl, lower alkoxy, phenyl-lower alkoxy, halophenyl-lower alkoxy, lower alkyl phenyl-lower alkoxy, lower alkoxyphenyl-lower alkoxy, cycloalkyl of 5 to 6 carbon atoms, or by an annulated alicyclic ring of 3–4 carbon atoms and in the 4-position by a carboxyl, carbonamide or a carboxylic acid ester group containing, in the ester grouping, a lower alkyl radical, a di-lower alkyl-amino-lower alkyl radical or an alkyleneimino-lower alkyl radical having 4–5 ring carbon atoms which may be interrupted by oxygen or the group

$>N—CH_3$

These compounds and the physiologically tolerable salts thereof antiphlogistic and antipyretic properties.

3,445,474
3 - HALO - 4 - (LOWER-ALKANOYLOXY) - 1-(LOWER - ALKYL) - 4-PHENYLPIPERIDINES AND INTERMEDIATES
Philip M. Carabateas, Schodack, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 20, 1965, Ser. No. 499,026
Int. Cl. C07d *31/36*
U.S. Cl. 260—294.3 8 Claims
3-halo-4-(lower-alkanoyloxy)-1-(lower-alkyl)-4-phenylpiperidines, having central nervous stimulant activity, are prepared in several steps by first reacting 1-(lower-alkyl)-4-phenyl-1,2,5,6-tetrahydropyridine with N-bromoacetamide in an acidic aqueous medium to form a 1-(lower-alkyl)-3-bromo-4-phenyl-4-piperidinol, next reacting the 3-bromo compound with aqueous alkali to form 1-(lower-alkyl)-3,4-epoxy-4-phenylpiperidine, then reacting the epoxy compound with a hydrogen halide to form 1-(lower-alkyl)-3-halo-4-phenyl-4-piperidinol as its hydrohalide salt and reacting the latter with a lower-alkanoylating agent, preferably a lower-alkanoic anhydride or a lower-alkanoyl halide.

3,445,475
DERIVATIVES OF CARBAZOLE-9-GLYOXYLIC ACIDS
Milton Wolf, West Chester, and Francis J. Greek, Philadelphia, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Original application Feb. 18, 1965, Ser. No. 433,778, now Patent No. 3,328,406, dated June 27, 1967. Divided and this application Mar. 10, 1967, Ser. No. 635,934
Int. Cl. C07d *29/28, 27/68*
U.S. Cl. 260—294.3 1 Claim
Carbazole-9-glyoxylic acid derivatives having central nervous system depressant activity, mydriatic activity and diuretic activity.

3,445,476
PROCESS FOR THE PREPARATION OF 2-(AMINOETHYL)PHTHALIMIDINES
Theodore S. Sulkowski, Narberth, and Albert A. Mascitti, Norristown, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Mar. 14, 1967, Ser. No. 622,919
Int. Cl. C07d *27/08, 31/42*
U.S. Cl. 260—325 5 Claims
This invention is concerned with a process for the hydrogenolysis of tetrahydroimidazoisoindolones to prepare 2-(2-aminoethyl)phthalimidines which are useful intermediates in the preparation of 2-(2-aminoethyl)isoindolines which are pharmacologically active as anti-depressants and anorexiants.

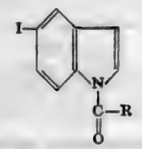
3,445,477
PROCESS FOR THE PREPARATION OF TRIMELLITIC ACID IMIDES
Gerhard Müller and Rudolf Merten, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Jan. 12, 1965, Ser. No. 425,082
The portion of the term of the patent subsequent to Apr. 17, 1984, has been disclaimed
Claims priority, application Germany, Feb. 6, 1964, F 41,928
Int. Cl. C07d *49/32, 57/00*
U.S. Cl. 260—326 8 Claims
1. A process for the production of trimellitic acid imide which comprises reacting trimellitic acid anhydride with an organic isocyanate selected from the group consisting of

butyl isocyanate,
stearyl isocyanate,
cyclohexyl isocyanate,
phenyl isocyanate,
1-naphthyl isocyanate,
tetramethylene-(1:4)-diisocyanate,
hexamethylene-(1:6)-diisocyanate,
hexamethylene-(1:4)-diisocyanate,
cyclohexane-(1:4)-diisocyanate,
dicyclohexylmethane-(4:4′)-diisocyanate,
phenylen-(1:3)-diisocyanate,
phenylen-(1:4)-diisocyanate,
toluylene-(2:6)-diisocyanate,
toluylene-(2:4)-diisocyanate and mixtures of such toluylene diisocyanates,
diphenylmethane-(4:4′)-diisocyanate,
diphenylether-(4:4′)-diisocyanate,
naphthylene-(1:5)-diisocyanate,
hexahydrodiphenyl-4:4′-diisocyanate,
triphenylmethane-4:4″-triisocyanate,
p-nitrophenylisocyanate,
3:4-dichlorophenyl-isocyanate,
allylisocyanate,
1-methoxybenzene-2:4-diisocyanate,
azobenzene-4:4′-diisocyanate,
diphenyl sulphone-4:4′-diisocyanate,
ω:ω′-dipropylether-diisocyanate,
diphenylsulphide-2:4-diisocyanate,
anthraquinone-2:6-diisocyanate,
1-cyanoethyl-2-isocyanate,
isocyanate-ethyl acetate,

and the triisocyanate from 1 mol of trimethylolpropane and 3 mols of toluylene diisocyanate, in a quantity of at least one mol of said anhydride per mol of isocyanate group present under anhydrous conditions at temperatures between 50 and 250° C.

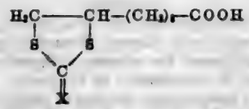
3,445,478
METHOD OF SYNTHESIZING ADRENOCHROME MONOAMINOGUANIDINE
Yasuhito Yamauchi, Suita, Osaka, Japan, assignor to Shiraimatsu Shinyaku Kabushiki Kaisha, Osaka, Japan, a corporation of Japan
Continuation-in-part of application Ser. No. 281,029, May 16, 1963. This application Oct. 15, 1965, Ser. No. 496,434
Int. Cl. C07d *27/34;* A61k *27/00*
U.S. Cl. 260—326.15 6 Claims
1. The process of producing adrenochrome monoaminoguanidine, comprising the steps of reacting adrenochrome in an acid solution with aminoguanidine while maintaining the pH between 2.5 and 3.58 and precipitating adrenochrome monoaminoguanidine with the addition of alkali.

3,445,479
N-ACYLATED-5-IODOINDOLES
Allan E. Hydorn, Milltown, N.J., assignor to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Dec. 9, 1966, Ser. No. 600,069
Int. Cl. C07d *27/56*
U.S. Cl. 260—326.16 2 Claims
Intermediates in the synthesis of 5-iodoindole having the formula



wherein R is lower alkyl. 5-iodoindole is an intermediate in the preparation of 5-iodo-DL-tryptophan, a diagnostic tool employed in radioactive iodine studies and in the preparation of anthranilic acids which are useful as dyes and flavorings.

3,445,480
4-(8′-CARBOXYOCTYL)-1,3-DITHIOLANES
Andre Allais, Les Lilas, and Pierre Girault, Paris, France, assignors to Roussel-Uclaf, Paris, France, a corporation of France
No Drawing. Filed June 27, 1967, Ser. No. 649,100
Claims priority, application France, July 6, 1966, 68,436; Oct. 4, 1966, 78,716
Int. Cl. C07d *71/00;* A61k *27/00*
U.S. Cl. 260—327 9 Claims
Novel 4 - (8′-carboxyoctyl)-1,3-dithiolanes of the formula



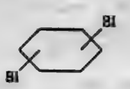
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wherein X is selected from the group consisting of oxygen and sulfur and their non-toxic, pharmaceutically acceptable salts and esters which possess choleretic and hepatoprotective activity.

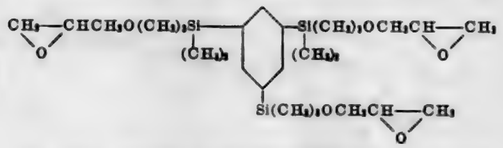
3,445,481
PROCESS FOR THE PREPARATION OF DICARBOXYALKYLIDENE COMPOUNDS CONTAINING HALO SUBSTITUTED BICYCLOALKENE MOIETIES AND DERIVATIVES THEREOF
Louis Schmerling, Riverside, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed Aug. 12, 1965, Ser. No. 479,321
Int. Cl. C07d *5/00;* C07c *69/00*
U.S. Cl. 260—347.3 9 Claims
Preparation of dicarboxyalkylidene compounds by condensing an unsaturated ketone with a dicarboxylic acid, anhydride, ester or salt thereof in the presence of a basic catalyst, followed by the condensation of the resultant adduct with a polyhalo substituted alkadiene.

3,445,482
BIS(POLYHALOCYCLOALKENE)DICARBOXYLIC ACIDS AND DERIVATIVES THEREOF
Louis Schmerling, Riverside, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed Aug. 12, 1965, Ser. No. 479,296
Int. Cl. C07c *55/02, 69/34;* C07d *5/00*
U.S. Cl. 260—347.8 14 Claims
Bis(polyhalocycloalkene) dicarboxylic acids and derivatives thereof exemplified by diethyl bis(1,4,5,6,7,7-hexachloro-5-norbornen-2-ylmethyl) malonate, 2,3-bis(1,4,5,6,7,7 - hexachloro-5-norbornen-2-ylmethyl) succinic acid, and bis(1,4,5,6,7,7 - hexachloro-5-norbornen-2-yl)-3,3′-dicarboxylic acid. The compounds are useful as flame retardant additives for plastics, resins and textiles.

3,445,483
ORGANOSILICON EPOXIDES
Roger G. Chaffee, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan
No Drawing. Continuation-in-part of application Ser. No. 531,021, Mar. 2, 1966. This application Mar. 31, 1966, Ser. No. 538,974
Int. Cl. C07f *7/08;* C07d *1/12;* C08g *31/32*
U.S. Cl. 260—348 8 Claims
Organosilicon compounds of the class of epoxy functional silcarbanes in which the epoxide group is attached to the silicon atom via an SiC linkage, the silicon atoms in the compounds being bridged by a phenylene linkage, i.e.,

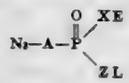


Illustrative of an epoxy functional silcarbane as defined is a compound of the formula

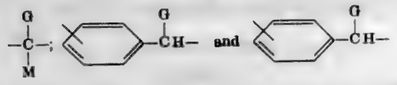


The epoxy functional silcarbanes are useful for modifying organic resins.

3,445,484
ORGANIC PHOSPHORUS COMPOUNDS
John Melvin Swan and Jocelyn Margaret Gregory, Melbourne, Victoria, Australia, assignors to Imperial Chemical Industries of Australia and New Zealand Limited, Melbourne, Victoria, Australia, a company of Australia, and Commonwealth Scientific and Industrial Research Organization
No Drawing. Filed Nov. 16, 1964, Ser. No. 411,545
Claims priority, application Australia, Dec. 20, 1963, 39,092/63
Int. Cl. C07f *9/02;* A01n *9/36*
U.S. Cl. 260—349 103 Claims
1. An organophosphorus compound of the formula:



wherein N_3 is an azido group, A is selected from the group consisting of:



the azido group being in the para- or ortho- position of the benzene ring, and G and M are radicals of no more than 12 carbon atoms independently selected from the group consisting of hydrogen and alkyl, aryl, alkaryl and cycloalkyl and X and Z are independently selected from the group consisting of O, S and N—R, R being a radical of no more than 12 carbon atoms selected from the group consisting of hydrogen and hydrocarbon, and wherein L, E and R independently represent a hydrocarbon radical of 1 to 12 carbon atoms selected from the group consisting of alkyl, alkenyl, alkynyl, aryl, alkaryl, aralkyl, aralkenyl, cycloalkyl, cycloalkenyl, and wherein any one of the radicals L, E, G, M and R, whenever it stands for a hydrocarbon, optionally may bear one or more substituents of no more than 12 carbon atoms selected from the group consisting of halogen, cyano, hydroxy, amino, alkylamino, dialkamino, oxo, alkoxy, aryloxy, alkylthio, arylthio, carbamido, alkanoyloxy, alkoxycarbonyl, aryloxycarbonyl, nitro, nitroso or azido, provided, however, that no carbon carries more than one azido group and that the total number of the azido groups in the molecule is not more than two and wherein whenever both X and Z stand for Y where Y is either O or S, L may also be hydrogen or a cation and wherein furthermore either one or both groups —XE and —ZL may be taken to represent a chlorine atom.

3,445,485

1-AMINO-2 METHYLOLCYCLO-HEXYLMETHOXY-4-HYDROXY-ANTHRAQUINONES

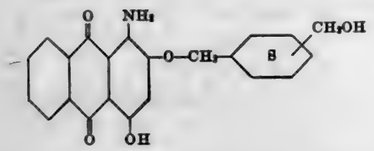
James M. Straley, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Sept. 21, 1964, Ser. No. 398,092

Int. Cl. C09b *1/22, 1/50*

U.S. Cl. 260—380 **4 Claims**

1. Anthraquinone compounds having the formula



3,445,486

TETRACHLORO-ALKYL-CYCLOHEXENE-DIONES

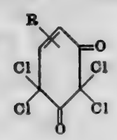
Wilhelm J. Schnabel, Branford, and Trescott B. Larchar, Sr., Hamden, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed July 5, 1966, Ser. No. 562,531

Int. Cl. C07c *49/44, 49/00*

U.S. Cl. 260—396 **5 Claims**

1. A compound having the formula:



wherein R is alkyl having from 1 to 5 carbon atoms.

3,445,487

PROCESS FOR THE PREPARATION OF 3-OXO-4,6-DEHYDRO-19-NOR-STEROIDS

Gordon Hanley Phillipps, Greenford, Middlesex, England, assignor to Glaxo Laboratories Limited, Middlesex, England, a British company

No Drawing. Filed June 21, 1966, Ser. No. 559,084

Claims priority, application Great Britain, June 22, 1965, 23,390/65

Int. Cl. C07c *167/16, 169/10, 173/10*

U.S. Cl. 260—397.3 **15 Claims**

This invention relates to the production of 3-oxo-4,6-dehydro-19-nor-steroids. The nor-steroids are produced by treating a 3-oxo-5(10), 7-dehydrosteroid with either an acid or a base. The preferred acids are hydrochloric, hydrobromic, perchloric, p-toluenesulphonic or phosphoric acid while the preferred bases are the alkali metal hydroxides, carbonates, bicarbonates and alkoxides.

3,445,488

NOVEL 5β,10α-STEROIDS

Eugene Farkas, Indianapolis, Ind., assignor to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed July 13, 1965, Ser. No. 471,704

Int. Cl. C07c *169/66, 169/10;* A61k *27/00*

U.S. Cl. 260—397.4 **3 Claims**

Novel 5β,10α-estranes and 19-norpregnanes useful as anti-hormones.

3,445,489

9β,10α-STEROIDS, INTERMEDIATES THEREFOR AND PHARMACEUTICAL PREPARATIONS CONTAINING THESE COMPOUNDS AS AN ACTIVE INGREDIENT

Engbert Harmen Reerink, Pieter Westerhof, and Hendrik Frederik Louis Scholer, Van Houtenlaan, Weesp, Netherlands, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 470,874, July 9, 1965. This application July 15, 1966, Ser. No. 565,671

Claims priority, application Netherlands, Apr. 12, 1958, 226,774

Int. Cl. C07c *169/66, 169/22*

U.S. Cl. 260—397.4 **6 Claims**

3(keto, alkoxy or acyloxy) - 6 methyl 9β, 10α steroids of the androstane series. Examples are 6α-methyl-17β-hydroxy-9β, 10α - androst - 4 - en - 3 - one 17 - acetate and 6 - methyl - 17α - ethinyl 17 - hydroxy - 9β, 10α-androsta - 4,6 - dien 3 - one. In general the compounds have anabolic activity.

3,445,490

6-HALO-Δ⁴-PREGNENE-16α,17α-DIOL-3,20-DIONES

Howard J. Ringold and George Rosenkranz, Mexico City, Mexico, assignors, by mesne assignments, to Syntex Corporation, a corporation of Panama

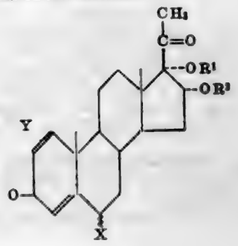
No Drawing. Continuation-in-part of applications Ser. No. 807,774, Apr. 21, 1959, and Ser. No. 56, Jan. 4, 1960. This application June 8, 1960, Ser. No. 34,633

Claims priority, application Mexico, Apr. 24, 1958, 50,807

Int. Cl. C07c *169/52, 169/50;* A61k *27/00*

U.S. Cl. 260—397.4 **9 Claims**

1. A compound of the formula



wherein Y is selected from the group consisting of a double bond between C–1 and C–2 and a saturated linkage between C–1 and C–2; R^1 and R^2 are each an acyl group of a hydrocarbon carboxylic acid of up to 12 carbons; and X is selected from the group consisting of chlorine and fluorine.

3,445,491

PERFLUOROALKYLAMIDO-ALKYLTHIO METHACRYLATES AND ACRYLATES AND INTERMEDIATES THEREFOR

Pier Luigi Pacini, Bronxville, N.Y., assignor to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of New York

No Drawing. Filed June 30, 1967, Ser. No. 650,239

Int. Cl. C08h *9/02;* C08f *3/84;* B44d *1/32*

U.S. Cl. 260—399 **13 Claims**

Perfluoroalkylamido-alkylthio methacrylates and acrylates are monomers which can readily be polymerized to corresponding polymers which are useful for imparting soil, water, and oil repellency properties to textile fabrics. A particularly preferred example is 2(n-perfluorooctanoamido)ethyl thiomethacrylate. Polymers of the monomers disclosed include homopolymers, copolymers and blends with other polymers useful in fabric finishes. Mercaptans useful as intermediates for these monomers are also disclosed.

3,445,492

ALKYLENE OR ARYLENE BIS(ORGANOSILYL, GERMANYL OR STANNYL IMIDOPHOSPHORANES, ARSANES OR STIBANES) AND THE PREPARATION THEREOF

Robert M. Washburn and Roger A. Baldwin, Whittier, Calif., assignors to American Potash & Chemical Corporation, a corporation of Delaware

No Drawing. Application Jan. 11, 1963, Ser. No. 268,425, now Patent No. 3,311,646, dated Mar. 28, 1967, which is a division of application Ser. No. 149,887, Nov. 3, 1961, now Patent No. 3,112,331, dated Nov. 26, 1963. Divided and this application Aug. 1, 1966, Ser. No. 574,850

Int. Cl. C07f *7/10, 9/78, 9/00*

U.S. Cl. 260—429 **8 Claims**

1. A process for the preparation of a new class of monomeric compounds which comprises reacting under anhydrous conditions,

(a) one mole of a compound having the formula

$$(N_3)_nR_{3-n}M—L—MR_{3-n}(N_3)_n$$

where

R is selected from the group consisting of aryl, alkyl, halogen, alkoxy, aryloxy, amino, alkylthio, and arylthio groups;

M is a metal selected from the group consisting of silicon, germanium, and tin;

L is an organic group selected from the group consisting of alkylene and arylene groups; and

n is a whole number of from 1 to 5; with

(b) from 2 to 6 moles of a compound having the formula

$$YR'R''R'''$$

wherein Y is selected from the group consisting of phosphorus, arsenic, and antimony; and R′, R″, and R‴ are selected from at least one of the group consisting of aryl, alkyl, alkoxy, aryloxy, amino, alkylthio, and arylthio groups.

3,445,493

SEPARATION OF ALKYL ALUMINUM COMPOUNDS ON AN EXCHANGE RESIN

Kenneth E. Harwell, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

Filed Mar. 19, 1965, Ser. No. 441,118

Int. Cl. C07f *5/06*

U.S. Cl. 260—448 **10 Claims**

Aluminum alkyls having alkyl groups of varying carbon atom distribution can be separated by passing the mixture past a porous exchange resin having a predetermined average pore size and containing a functional group capable of forming a bond with the aluminum alkyl. The smaller molecular weight material will enter the pores and be bonded thereto whereas the larger molecular weight material will pass through the system.

3,445,494

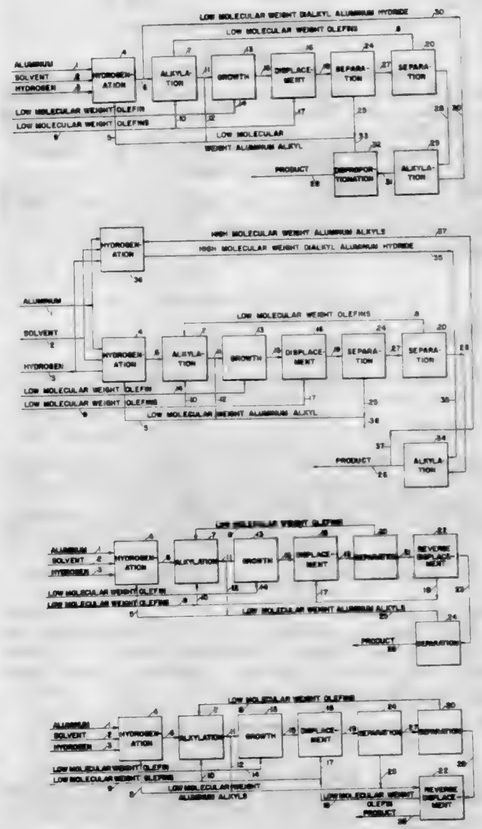
PREPARATION OF ALUMINUM ALKYLS

Jerry A. Acciarri, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

Continuation-in-part of application Ser. No. 353,375, Mar. 20, 1964. This application June 26, 1968, Ser. No. 744,250

Int. Cl. C07f *5/06*

U.S. Cl. 260—448 **9 Claims**

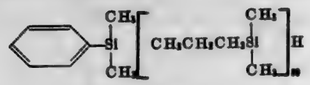


Aluminum alkyls of higher average molecular weight than that which would be predicted by Poisson distribution can be obtained by alkylating aluminum alkyl hydrides first with an olefin stream comprising a mixture of olefins up to

10 carbon atoms, subjecting the alkylate to growth and displacement, separating the low molecular weight olefins from the aluminum alkyls and high molecular weight olefins, utilizing the thus separated low molecular weight olefins for said alkylation step and recovering high molecular weight aluminum alkyls by reverse displacement and separation.

3,445,495
POLYMERS AND TELOMERS OF SILACYCLOBUTANES
Lee E. Nelson, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan
No Drawing. Continuation-in-part of application Ser. No. 377,492, June 24, 1964. This application May 6, 1966, Ser. No. 547,750
Int. Cl. C07f 7/02; C08g 47/02
U.S. Cl. 260—448.2 **11 Claims**

Silacyclobutanes and disilacyclobutanes are polymerized by reaction of the monomer in the presence of a platinum-containing material as catalyst. Novel polymers and telomers are useful fluids, gums and resins. An example is the reaction of 1,1-dimethyl-1-silacyclobutane and phenyldimethylsilane in the presence of chloroplatinic acid for 3 hours at 100° C. to produce



3,445,496
ORGANOSILICON XANTHIC ESTERS
John W. Ryan, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan
No Drawing. Filed Jan. 14, 1966, Ser. No. 520,667
Int. Cl. C07f 7/18; C08g 31/26, 31/32
U.S. Cl. 260—448.8 **7 Claims**

Organosilicon xanthic esters which are useful as sizing agents and chemical intermediates. Examples of such compounds are



and



3,445,497
METHOD FOR THE PRODUCTION OF ALKALI AND ALKALINE EARTH METAL ALKYL CARBONATES AND THIOCARBONATES
John E. Anderson, Clyde E. Parish, and George H. Ross, Houston, Tex., assignors to Signal Oil and Gas Company, Los Angeles, Calif.
No Drawing. Filed Dec. 20, 1965, Ser. No. 515,194
Int. Cl. C07c 153/07, 69/00
U.S. Cl. 260—455 **12 Claims**

A method of preparing metal alkyl carbonates and thiolcarbonates comprises reacting an adduct of a tertiary amine, an alkanol and carbon dioxide or carbonyl sulfide with an inorganic metal salt.

3,445,498
BORIC ACID ESTERS
Henryk A. Cyba, Evanston, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed May 25, 1965, Ser. No. 458,786
Int. Cl. C07f 5/04; C10m 1/54
U.S. Cl. 260—462 **4 Claims**

Reaction product of a polyhydroxyaromatic compound, a borylating agent, and an N,N-di-hydrocarbyl hydroxyamine formed at a temperature of from about 60° to about 200° C. The compounds are useful as stabilizing additives for plastics, rubbers, hydrocarbon distillates and other organic substrates normally subject to oxidative deterioration.

3,445,499
NOVEL PROCESS FOR THE PREPARATION OF TRANSCHRYSANTHEMUMIC ACID
Jacques Martel, Bondy, Chanh Huynh, Villemomble, Edmond Toromanoff, Paris, and Gerard Nominé, Noisy-le-Sec, France, assignors to Roussel-Uclaf, Paris, France, a corporation of France
No Drawing. Filed May 10, 1965, Ser. No. 454,691
Claims priority, application France, May 26, 1964, 975,870, 975,871
Int. Cl. C07c 147/08, 147/06, 51/09
U.S. Cl. 260—464 **11 Claims**

A novel process for selectively producing d,l-trans chrysanthemumic acid which has the same configuration as the naturally occurring said acid which is useful as an intermediate for pyrethreum esters widely used as insecticides and to novel intermediates formed therein.

3,445,500
PROCESS OF PREPARING UNSATURATED NITRILES
Jamal S. Eden, Akron, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
No Drawing. Filed Feb. 28, 1967, Ser. No. 619,173
Int. Cl. C07c 121/32, 51/00; B01j 11/82
U.S. Cl. 260—465.3 **7 Claims**

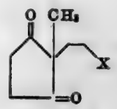
Acrylonitrile or methacrylonitrile are prepared by reacting propylene or isobutylene, ammonia and oxygen at elevated temperatures in the presence of a catalyst containing molybdenum, tellurium, thorium, oxygen and phosphorous.

3,445,501
CATALYTIC AMMOXIDATION OF OLEFINS TO NITRILES
Giorgio Caporali and Nicola Giordano, Milan, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy
No Drawing. Filed Dec. 21, 1966, Ser. No. 603,432
Claims priority, application Italy, Dec. 28, 1965, 28,837/65
Int. Cl. C07c 121/32
U.S. Cl. 260—465.3 **10 Claims**

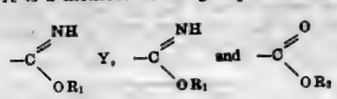
A catalyst of an oxygenated tellurium compound and an oxygenated antimony compound, the tellurium:antimony ratio therein preferably ranging from about 9:1 to about 1:1, and a process for the preparation of unsaturated nitriles by reacting an olefin, ammonia and either oxygen or an oxygen-containing gas in the presence of such catalyst.

3,445,502
2-METHYL-2(β-SUBSTITUTED ETHYL)-1,3-CYCLOPENTANEDIONE DERIVATIVES
Richard E. Brown, Hanover, and Robert I. Meltzer, Rockaway, N.J., assignors to Warner-Lambert Pharmaceutical Company, Morris Plaines, N.J., a corporation of Delaware
No Drawing. Original application Sept. 19, 1963, Ser. No. 310,146, now Patent No. 3,301,889. Divided and this application June 29, 1966, Ser. No. 561,368
Int. Cl. C07c 69/74, 87/34
U.S. Cl. 260—468 **4 Claims**

1. A compound of the formula:



wherein X is a member of the group consisting of



in which R_1 is lower alkyl and R_2 lower alkyl and R_3 is a member of the group consisting of hydrogen and lower alkyl, and Y is a member of the group consisting of hydrochloride, hydrobromide, hydroiodide and hydrogen sulfate.

3,445,503
[4-(2-NITRO-1-ALKENYL)ARYLOXY]ALKANOIC ACIDS
Everett M. Schultz, Ambler, and Edward J. Cragoe, Jr., Lansdale, Pa., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Filed Nov. 22, 1965, Ser. No. 509,201
Int. Cl. C07c 79/38; C07d 87/34; A61k 27/00
U.S. Cl. 260—471 **6 Claims**

[4-(2-nitro-1-alkenyl)phenoxy]alkanoic acid products which are substituted in the benzene nucleus by a single substituent selected from halogen, alkenyl aryloxy, aralkoxy and hydroxyalkyl; and the salt, ester and amide derivatives thereof. The products are diuretic and saluretic agents which are useful in the treatment of conditions associated with electrolyte and fluid retention and hypertension.

The products are obtained via the reaction of a nuclear formyl substituted phenoxyalkanoic acid with a primary amine and then with a nitroalkane and, if desired, hydrolyzing the [4-(2-nitro-1-alkenyl)phenoxy]alkanoate intermediate thus obtained to the desired carboxylic acid product.

3,445,504
STABILIZED TEREPHTHALATE COMPOSITIONS
Paul J. Mehalso, Highland, Ind., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana
No Drawing. Continuation-in-part of application Ser. No. 152,029, Nov. 13, 1961. This application Jan. 26, 1965, Ser. No. 428,249
Int. Cl. C07c 69/82, 149/36; C07f 9/08
U.S. Cl. 260—475 **5 Claims**

New compositions of matter are the lower alkanol diesters of terephthalic acid containing a hindered phenol and a dialkyl phosphite as inhibitors of acid number increase and discoloration resulting from high temperature degradation. The diesters are employed as intermediates in the preparation of film- and fiber-forming super polyesters.

3,445,505
METHOD OF PREPARING A LOWER-ALKYL-β FORMYLPROPIONATE AND RELATED COMPOUNDS
Hachiro Wakamatsu and Jiro Sato, Tokyo, and Masahiko Takesada and Seiicho Sato, Kanagawa-ken, Japan, assignors to Ajinomoto Co., Inc., Tokyo, Japan
No Drawing. Continuation-in-part of application Ser. No. 410,310, Nov. 10, 1964. This application Feb. 10, 1966, Ser. No. 526,344
Claims priority, application Japan, Nov. 11, 1963, 38/60,533; Feb. 15, 1965, 40/8,195
Int. Cl. C07c 69/24, 69/66
U.S. Cl. 260—483 **2 Claims**

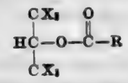
Lower-alkyl β-formyl propionate and related compounds are prepared in high yields from gaseous acetylene, carbon monoxide, and hydrogen in the presence of a cobalt carbonyl catalyst and of a lower alkanol at 100°–160° C. when the mole ratio of carbon monoxide and acetylene is at least 4:1, the mole ratio of hydrogen to carbon monoxide is less than 2:1, more than ½ liter alkanol is available per mole acetylene, and the partial pressure of the carbon monoxide in the mixture is at least 50 kg./cm.² (reduced to 20° C.). Ethylene may be hydroformylated simultaneously when not exceeding half of the acetylene.

3,445,506
METHOD FOR PREPARING ETHYL ACRYLATE
Stephen Sogal, Avon Lake, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
No Drawing. Filed Jan. 21, 1966, Ser. No. 522,021
Int. Cl. C07c 67/00, 103/08
U.S. Cl. 260—486 **6 Claims**

Ethyl acrylate is prepared by reacting acrylamide sulfate with ethyl sulfates in an integrated process whereby by-product diethyl ether, acrylic acid, beta-ethoxy ethyl propionate and ethanol formed during the reaction, along with unreacted sulfuric acid, may be recycled and utilized in the process. The acrylamide sulfate and sulfates are readily prepared by reaction of acrylonitrile and ethylene with sulfuric acid.

3,445,507
NOVEL FLUORINATED ESTERS
Peter E. Newallis, Morris Plains, Julian A. Otto, Lake Tamarack, and Pasquale Lombardo, Hanover, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Mar. 4, 1966, Ser. No. 531,744
Int. Cl. A01n 9/24; C07c 69/62
U.S. Cl. 260—487 **19 Claims**

Polyfluoroisopropyl alkanoates of the formula:



wherein X may be Cl or F and may be the same or different, wherein R is an unsubstituted alkyl group or a chlorinated alkyl group, with the proviso that at least three of the X atoms are fluorine and with the further proviso that when the number of X atoms which are F is three, R is a chlorinated lower alkyl group. These compounds possess biocidal properties, specifically insecticidal, nematocidal, or both.

3,445,508
ACYL AND HYDROXY OR ALKANOYLOXY-4,7-METHANOINDENE DERIVATIVES
Morris Dunkel, Paramus, N.J., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed Feb. 8, 1967, Ser. No. 614,560
Int. Cl. C07c 69/02, 49/04; C11b 9/00
U.S. Cl. 260—488 **9 Claims**

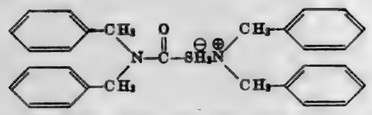
Novel acyl and hydroxyl or acyloxy substituted 4,7-methanoindenes useful as perfume ingredients prepared by hydration of corresponding hydroxy and acetylenic substituted methanoindenes.

3,445,509
PROCESS FOR THE MANUFACTURE OF ACETOACETIC ESTERS
Otto Probst and Lothar Hornig, Frankfurt am Main, Lothar Hirsch, Kelkheim, Taunus, and Helmut Gosse, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed June 22, 1965, Ser. No. 466,097
Claims priority, application Germany, June 26, 1964, F 43,267
Int. Cl. C07c 69/72, 143/84; C07f 9/50
U.S. Cl. 260—479 **9 Claims**

Improved process for making acetoacetic acid esters by reacting diketene and a compound having an esterifiable hydroxy group, wherein a tertiary phosphine and/or betaine catalyst is employed.

3,445,510
DIBENZYL AMMONIUM SALT OF DIBENZYL THIOLCARBAMIC ACID
Philip Bernstein, Yardley, Pa., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
No Drawing. Filed Dec. 30, 1965, Ser. No. 517,814
Int. Cl. C07c 155/06
U.S. Cl. 260—501.12 1 Claim

The reaction of carbonyl sulfide with dibenzylamine produces a novel compound having anthelmintic properties and having the structure:



3,445,511
[4-(2,3-DIHALOALKANOYL)PHENOXY] ALKANOIC ACIDS
Edward J. Cragoe, Jr., Lansdale, Pa., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Continuation-in-part of application Ser. No. 313,421, Oct. 3, 1963. This application Dec. 1, 1966, Ser. No. 598,202
Int. Cl. C07c 65/02; C07d 87/32, 29/20
U.S. Cl. 260—521 11 Claims

This invention relates to a new class of [4-(2,3-dihaloalkanoyl)phenoxyl]alkanoic acid products and to the salts, esters and amide derivatives thereof. The instant products are useful as diuretics and saluretics and, also, have utility as intermediates in the preparation of the diuretically active [4-(2-alkylidenealkanoyl)phenoxy]alkanoic acid compounds described in copending U.S. application Ser. No. 313,421, filed Oct. 3, 1963. The products of this invention are prepared by two routes: (1) via the Friedel-Crafts reaction of a 2,3-dihaloalkanoic acid halide with a phenoxyalkanoic acid and (2) via the treatment of a [4-(2-methylenealkanoyl)phenoxy]alkanoic acid with a suitable halogenating agent.

3,445,512
PURIFICATION OF ADIPIC ACID
Francis George Webster and Dereck James Sutherland Burleigh, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed Aug. 18, 1966, Ser. No. 588,641
Claims priority, application Great Britain, Aug. 20, 1965, 35,782/65
Int. Cl. C07c 55/14
U.S. Cl. 260—537 3 Claims

1. A process for purification of adipic acid obtained by oxidation of cyclohexane said process comprising contacting an aqueous solution of the said adipic acid with steam in a contacting zone at a pressure of 20 to 80 p.s.i.g. permitting steam to issue from the contacting zone whereby to remove monobasic acids therefrom and thereafter recovering purified adipic acid by crystallisation.

3,445,513
TRI(PHENYL OR ALKYL) PHOSPHAZOSULFURYL FLUORIDES AND THEIR PREPARATION
Santad Kongpricha, Hamden, Conn., assignor to Olin Mathieson Chemical Corporation, New Haven, Conn., a corporation of Virginia
No Drawing. Filed June 19, 1964, Ser. No. 376,551
Int. Cl. C07f 9/46, 9/28
U.S. Cl. 260—543 7 Claims

Phosphazosulfuryl fluorides having the formula

$$R_3P{=}N{-}SO_2F$$

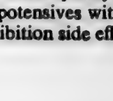
where R is alkyl, aryl, chlorine or fluorine are prepared by reacting amidosulfuryl fluoride with a phosphorus V chloride having the formula R_3PCl_2 at a temperature of about 60° C. to about 200° C.

3,445,514
1,2,4,7,7 - PENTACHLOROTRICYCLO[2,2,1,0,^{2,6}]HEPTANE-3-ONE-5-SULFONYL CHLORIDE
Everett E. Gilbert and Benjamin Veldhuis, Morris Township, Morris County, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Oct. 15, 1965, Ser. No. 496,696
Int. Cl. C07c 143/70
U.S. Cl. 260—543 1 Claim

Production of 1,2,4,7,7-pentachlorotricyclo[2,2,1,0^{2,6}] heptane-3-one-5-sulfonyl chloride, a new cyclic sulfonyl chloride having nematocidal activity.

3,445,515
SULFONEDIIMINE COMPOUNDS
Robert G. Laughlin and Jim S. Berry, Springfield, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
No Drawing. Filed July 13, 1966, Ser. No. 564,725
Int. Cl. C07c 147/00, 147/02
U.S. Cl. 260—551 5 Claims

1. A sulfonediimine having the structural formula



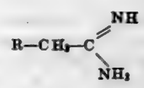
wherein R is an aliphatic radical containing from about 10 to about 18 carbon atoms and R' is selected from the group consisting of methyl and ethyl radicals.

3,445,516
REDUCTION OF TOLYLENE DIAMINES
James M. Cross, New Martinsville, W. Va., assignor to Mobay Chemical Company, Pittsburgh, Pa., a corporation of Delaware
No Drawing. Filed Jan. 28, 1966, Ser. No. 523,569
Int. Cl. C07c 85/14
U.S. Cl. 260—563 10 Claims

Hydrogenation of tolylene diamines is improved by charging a tolylene diamine and a member selected from the group consisting of low boilers obtained in the hydrogenation of tolylene diamine and residue obtained in the hydrogenation of tolylene diamine.

3,445,517
ARYL ACETAMIDINES
Jack Mills, Indianapolis, Ind., assignor to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana
No Drawing. Filed June 3, 1966, Ser. No. 554,962
Int. Cl. C07c 123/00; A61k 27/00
U.S. Cl. 260—564 4 Claims

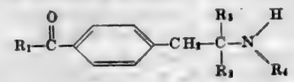
Various ar-substituted phenylacetamidines of the group



wherein R is o-tolyl, o-chlorophenyl, or α-naphthyl, and their salts, useful as hypotensives without the concomitant monoamine oxidase inhibition side effect.

3,445,518
p-ACYLPHENYLETHYLAMINES
John Shavel, Jr., Menham, and George Bobowski, Morristown, N.J., assignors to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware
No Drawing. Filed May 6, 1966, Ser. No. 548,037
Int. Cl. C07c 87/28; C07d 13/00; A61k 27/00
U.S. Cl. 260—570.8 9 Claims

A class of p-acylphenylethylamines are described. These amines have the following structural formula:



wherein R_1 is lower alkyl, cycloalkyl or aralkyl, and R_2, R_3 and R_4 are hydrogen or lower alkyl.

These compounds are useful as sympathomimetic amines.

3,445,519
PROCESS FOR PREPARING 5-(3-METHYLAMINO-PROPYL - OR - PROPYLIDENE)-5H - DIBENZO CYCLOHEPTENES OR 10,11-DIHYDRO COMPOUNDS
Janos Kollonitsch, Westfield, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Application Mar. 10, 1965, Ser. No. 438,780, now Patent No. 3,379,750, dated Apr. 23, 1968, which is a continuation-in-part of application Ser. No. 194,660, May 14, 1962. Divided and this application Nov. 14, 1967, Ser. No. 705,577
Int. Cl. C07c 85/02
U.S. Cl. 260—570.8 6 Claims

Compounds selected from 5H - dibenzo[a,d]10,11-dihydrocycloheptenes and 5H - dibenzo[a,d]cycloheptenes, substituted at the 5-carbon atom with a secondary aminopropyl or secondary aminopropylidene radical, are prepared from the corresponding tertiary-aminopropyl or propylidene compounds by reaction of the tertiaryamino compounds with a halothiolformate to produce a thiourethane intermediate, oxidizing the urethane reaction product and subsequently hydrolyzing the thiourethane intermediate to produce the desired secondary amino compound.

3,445,520
PROCESS OF OXIDATION OF OLEFINS TO UNSATURATED ALDEHYDES
James L. Callahan, Bedford, Ohio, assignor to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio
No Drawing. Continuation-in-part of application Ser. No. 230,684, Oct. 15, 1962, and a division of application Ser. No. 440,653, Jan. 11, 1965. This application Sept. 30, 1965, Ser. No. 508,880
Int. Cl. C07c 45/04, 47/22; B01j 11/32
U.S. Cl. 260—604 7 Claims

1. The process for the manufacture of unsaturated aldehydes from olefins which comprises the step of contacting in the vapor phase, at a temperature at which aldehyde formation proceeds, a mixture of oxygen and an olefin having only three carbon atoms in a straight chain, said mixture having a molar ratio of oxygen to olefin of from about 0.5:1 to about 5:1, with a catalyst composition consisting essentially of an active catalytic oxide complex of antimony and manganese as an essential catalytic ingredient, the Sb:Mn atomic ratio being within the range from about 1:50 to about 99:1, said complex being formed by heating the mixed oxides of antimony and manganese in the presence of oxygen at an elevated temperature above 500° F. but below their melting point for a time sufficient to form said active catalytic oxide complex of antimony and manganese.

3,445,521
PROMOTED ANTIMONY-IRON OXIDATION CATALYST
James L. Callahan, Bedford Heights, Robert K. Grasselli, Garfield Heights, and Warren R. Knipple, Bedford, Ohio, assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio
No Drawing. Filed Nov. 17, 1966, Ser. No. 594,985
Int. Cl. C07c 121/32, 47/22, 45/10
U.S. Cl. 260—604 3 Claims

A process for the catalytic oxidation of olefins such as propylene or isobutylene to the corresponding unsaturated aldehydes, acrolein and methacrolein, respectively, using a base catalyst composed of the oxides of antimony and iron, promoted with various metallic oxides.

3,445,522
ORGANOPHOSPHORUS COMPOUNDS
Hugh R. Hays, Colerain Township, Hamilton County, Ohio, and Gennady M. Kosolapoff, Auburn, Ala., assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
No Drawing. Filed Oct. 11, 1965, Ser. No. 494,904
Int. Cl. C07f 9/50
U.S. Cl. 260—606.5 6 Claims

gem-Diphosphines, having the general formula,

$$RR'C(PH_2)_2$$

and methods for their preparation are disclosed. The *gem*-diphosphines have utility as intermediates in the preparation of detergents, detergency builders and fabric softeners.

3,445,523
STABILIZATION OF ORGANIC HYDROPEROXIDES
Rudolph Rosenthal, Broomall, and Giovanni A. Bonetti, Wynnewood, Pa., assignors to Atlantic Richfield Company, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed Dec. 20, 1965, Ser. No. 515,247
Int. Cl. C07c 73/06; B01j 1/18
U.S. Cl. 260—610 6 Claims

Organic hydroperoxides stabilized with an aqueous mixture of (1) sodium or potassium hydroxide, (2) sodium or potassium dihydrogen phosphate, the pH of the hydroxide and aqueous mixture being 7 to 8.

3,445,524
FLUORINATED ALCOHOL AND ETHER DERIVATIVES THEREOF
Everett E. Gilbert and Benjamin Veldhuis, Morristown, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Original application Sept. 14, 1965, Ser. No. 487,334, now Patent No. 3,352,928, dated Nov. 14, 1967. Divided and this application Aug. 1, 1967, Ser. No. 667,876
Int. Cl. C07c 43/12
U.S. Cl. 260—614 2 Claims

Methyl and ethyl derivatives of 1,1,3,3-tetrafluoro-2-propanol useful as general inhalation anesthetics.

3,445,525
PREPARATION OF POLYETHERS
Heinrich Bormann and Herbert Nordt, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation
Filed Apr. 15, 1964, Ser. No. 359,933
Claims priority, application Germany, Apr. 20, 1963, F 39,529
Int. Cl. C07c 41/02, 41/00; C08g 23/00
U.S. Cl. 260—615 7 Claims

A process for preparing a homogeneous liquid and uniformly reactive reaction medium which comprises reacting about 1 mol of an alkali metal hydroxide for each 4 to 12 active hydroxyl groups of an organic compound

containing reactive hydrogen atoms in an inert organic liquid solvent capable of forming an azeotropic mixture with water, removing a portion of the azeotropic mixture which forms during the reaction and adding from about 1 to about 3 mols of an alkylene oxide having 2 to 4 carbon atoms to the reaction mixture per hydroxyl group contained therein until the liquid homogeneous medium is obtained; the liquid homogeneous and uniformly reactive reaction medium obtained by the aforedescribed process, and a method for preparing polyethers by adding measured quantities of an alkylene oxide to the reaction medium to form the polyether.

3,445,526

PRODUCTION OF PHENOLS

George Wallace Hooper, Norton-on-Tees, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Continuation-in-part of application Ser. No. 523,024, Jan. 26, 1966. This application May 25, 1966, Ser. No. 552,727

Claims priority, application Great Britain, June 10, 1965, 24,603/65

Int. Cl. C07c *39/12, 39/24*

U.S. Cl. 260—621 10 Claims

There is provided a process for the production of phenols in which benzene or substituted benzene is brought into contact with oxygen in the presence of hydrogen, a solid catalyst of at least one metal from Groups I–B or VIII of the Periodic Table and in a reaction medium comprising liquid water and titanous ions. The titanous ions in the reaction medium is within the range of 2×10^{-4} molar to 1.5×10^{-3} molar. The substituents on the substituted benzene must be substantially nonoxidizable under the reaction conditions.

3,445,527

STABILIZED CHLOROFLUOROALKANE COMPOSITION

Kazuo Okamura, Itami-shi, Japan, assignor to Daikin Kogyo Kabushiki Kaisha, Kita-ku, Osaka-shi, Japan, a juridical person of Japan

No Drawing. Filed Jan. 16, 1967, Ser. No. 609,360

Claims priority, application Japan, Jan. 21, 1966, 41/3,402; June 3, 1966, 41/35,935

Int. Cl. C07c *19/08*

U.S. Cl. 260—652.5 7 Claims

Chlorofluoroalkane based compositions containing trichlorofluoromethane, trichlorotrifluoroethanes or tetrachlorodifluoroethanes are stabilized against reaction with 85 to 95 volume percent hydrated alcohol having 1 to 4 carbon atoms by 0.1 to 5.0 weight percent of one or more epoxyethane compounds which are epoxyethane, 2-methyl-1,2-epoxyethane, 2-vinyl-1,2-epoxyethane and 2-methyl-2-vinyl-1,2-epoxyethane. The compositions may also contain nitromethane as an added stabilizer. Said compositions are particularly useful as aerosol compositions and solvent media for cleaning.

3,445,528

TRISORBITOL DIHYDRATE

Ralph A. Hales, West Chester, Pa., assignor to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 10, 1966, Ser. No. 548,881

Int. Cl. C07c *47/18*; C13k *9/00*

U.S. Cl. 260—635 1 Claim

Trisorbitol dihydrate is a novel hydrate of sorbitol. Trisorbitol dihydrate is a white crystalline compound having a vapor pressure of about 0.22 mm. mercury absolute at 15.0° C., starts to melt and decompose at about 48° C., is less soluble in water than anhydrous sorbitol at temperatures below 20° C., and is more soluble in water than anhydrous sorbitol at temperatures above 20° C. Trisorbitol dihydrate may be used in pharmaceuticals and foods in place of anhydrous sorbitol and as an intermediate in the preparation of ethers, uretnanes, and the like. The hydrate produces a cooler sensation on melting then does anhydrous sorbitol and thus is extremely useful for dusting chewing gum and candy to give a cool sensation in the mouth.

3,445,529

NITRATION OF HYDROCARBONS IN THE PRESENCE OF PERFLUOROALKANE OR PERFLUOROCHLOROALKANE

Richard D. Smetana, Beacon, N.Y., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed June 9, 1967, Ser. No. 644,816

Int. Cl. C07c *79/02, 77/00, 77/02*

U.S. Cl. 260—644 3 Claims

A method of nitrating alkanes and alicyclic hydrocarbons of between 2 and 50 carbons to produce nitration products comprising contacting said alkanes and alicyclic hydrocarbons in the presence of a liquid perhaloalkane selected from the group consisting of perfluoroalkane and perfluorochloroalkane of from 1 to 20 carbons with a nitrating agent selected from the group consisting of N_2O_5 and a P_2O_5—HNO_3—H_2O combination. The liquid perhalohydrocarbon functions to enhance the conversion of the hydrocarbon reactant to nitration products and as a nitration director favoring the production of nitro derivatives. By standard hydrogenation procedures the nitroalkane and nitrocycloalkane compounds formed in the resultant nitration product can be converted to their corresponding alkyl and cycloalkyl amines and the nitrate products therein can be converted to their corresponding alkanols and cycloalkanols.

3,445,530

NITROSO COMPOUNDS AND PROCESSES FOR THEIR PRODUCTION

Nylen L. Allphin, Jr., Pinole, Calif., assignor to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio

No Drawing. Filed May 14, 1965, Ser. No. 455,952

Int. Cl. C07c *81/00, 79/00*; C08g *33/00*

U.S. Cl. 260—645 7 Claims

The invention comprises a process for the production of nitrosyl derivatives of aromatic polycarboxylic acids comprising in combination the steps of reacting polycarboxylic acids with silver nitrate to form the corresponding silver salts of said acids, treating said silver salts with nitrosyl halide and heating the reaction product thus formed to from about 100 to about 400° C. and recovering the nitrosyl derivatives of polycarboxylic aromatic acids thus formed. Among the compounds formed in the above process are nitro-nitroso napthalene.

3,445,531

ARYL NITROSO COMPOUNDS

Donald J. Anderson, San Anselmo, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

No Drawing. Original application Mar. 25, 1966, Ser. No. 537,295, now Patent No. 3,380,918, dated Apr. 30, 1968. Divided and this application Oct. 24, 1967, Ser. No. 706,730

Int. Cl. C07c *81/02*

U.S. Cl. 260—647 3 Claims

Lubricating oil additives prepared by contacting at elevated temperatures an aryl C-nitroso compound of from 6 to 12 carbon atoms with a terminal aliphatic hydrocarbon olefin of from about 30 to 200 carbon atoms.

3,445,532

STABILIZATION OF 1,1,1-TRICHLOROETHANE

Hermann Richtzenhain, Cologne-Sulz, and Rudolf Stephan, Ranzel Ober Troisdorf, Germany, assignors to Dynamit Nobel Aktiengesellschaft Patentabteilung, Troisdorf, Bezirk Cologne, Germany, a corporation of Germany

No Drawing. Continuation of application Ser. No. 316,772, Oct. 16, 1963. This application Jan. 16, 1967, Ser. No. 609,681

Claims priority, application Germany, Oct. 18, 1962, D 40,087

Int. Cl. C07c *17/42, 19/02*

U.S. Cl. 260—652.5 1 Claim

1,1,1-trichloroethane is stabilized with a mixture comprising acetonitrile dioxane and tert. butanol.

3,445,533

REMOVAL OF CHLORINE FROM NITROGEN OR HYDROGEN CHLORIDE BY REACTION WITH A HYDROCARBON

Henry O. Mottern, Far Hills, N.J., assignor, by mesne assignments, to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York

Continuation of application Ser. No. 198,648, May 29, 1962. This application Sept. 24, 1965, Ser. No. 497,585

Int. Cl. C07c *17/02, 19/00*; B01d *53/00*

U.S. Cl. 260—660 6 Claims

1. A process for removing substantially the entire chlorine content of a gas stream containing from 0.77% to about 5% by weight of chlorine to produce a gas stream having a chlorine content of at most 0.1% by weight wherein said gas is selected from the group consisting of nitrogen and hydrogen chloride which comprises continuously countercurrently contacting said gas containing chlorine with a hydrocarbon mixture consisting essentially of hydrocarbons containing at least 15 and not more than 45 carbon atoms per molecule in the liquid state in a contact zone at a temperature of 110° to 150° C. to effect partial chlorination of said hydrocarbon mixture, recycling partially-chlorinated hydrocarbon mixture to said contact zone in a recycle ratio of at least 10:1 to produce a chlorinated hydrocarbon mixture having a chlorine of at most 0.1% and a partialy-chlorinated hyand separately recovering a gas having a content of chlorine of at least 0.1% and a partialy-chlorinated hydrocarbon mixture containing not more than about 5% by weight of chlorine, said recycling partially-chlorinated hydrocarbon mixture being introduced into said contact zone at a point below the point of introduction of said first-named hydrocarbon mixture but above the point of introduction into said contact zone of said gas containing chlorine, the residence time in the portion of said contact zone below the point of introduction of the recycling partially-chlorinated hydrocarbon mixture being from about 1 to about 20 minutes.

3,445,534

ETHYNYLATING AGENT AND PREPARATION THEREOF

Ricardo O. Bach and Conrad W. Kamienski, Gastonia, Matthew Henry Dellinger, Cherryville, Luther C. Mitchem, Lowell, and Robert C. Morrison, Gastonia, N.C., assignors to Lithium Corporation of America, Inc., New York, N.Y., a corporation of Minnesota

No Drawing. Filed Sept. 6, 1966, Ser. No. 577,161

Int. Cl. C07c *11/26*

U.S. Cl. 260—665 5 Claims

An improved ethynylation agent, for the ethynylation of aldehydes and ketones, in the form of a solution comprising the reaction product of acetylene with a suspension of lithium carbide in liquid ammonia.

3,445,535

METHOD FOR SEPARATION OF DIVINYLBENZENE ISOMERS FROM HYDROCARBON MIXTURE

Eduard Pavlovich Gendrikov, Ul. Schorsa, 61, kv. 63; Vsevolod Dmitrievich Enalev, Bulvar Pushkina, 12, kv. 70; and Galina Vladimirovna Samoilenko, Petrovskoe shosse, 1, kv. 8, all of Donetsk, U.S.S.R.

No Drawing. Filed May 3, 1966, Ser. No. 547,156

Int. Cl. C07c *7/16, 15/10*

U.S. Cl. 260—669 6 Claims

A method for separating divinylbenzene isomers from a hydrocarbon mixture by treating same with a cuprous salt mixed with aqueous ammonium chloride to form cuprous complexes of the divinylbenzene isomers and after separating the complexes from the reaction mixture, decomposing said complexes into the respective isomers and the cuprous salt.

3,445,536

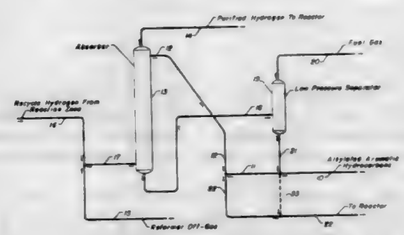
CONVERSION METHOD

Richard R. De Graff, Arlington Heights, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Dec. 27, 1966, Ser. No. 604,982

Int. Cl. C07c *15/04*

U.S. Cl. 260—672 3 Claims



Method for purifying hydrogen for use in a process for the conversion of hydrocarbons by contacting an impure hydrogen stream with hydrocarbons to be converted. The rich feed hydrocarbons are removed from the absorption zone and passed into a separation zone operating in the substantial absence of an external stripping medium. A purified hydrogen stream having increased hydrogen concentration is removed from the absorption zone. The hydrocarbons to be converted are removed from the separation zone and passed into the conversion zone. A fuel gas stream comprising normally gaseous hydrocarbons is also recovered.

3,445,537

PLURALITY OF EXTRACTIVE-DISTILLATION ZONES AND STRIPPING ZONES

Gunter Luther, Jurgen Ludwig, and Martin Schulze, Essen, Germany, assignors to Heinrich Koppers Gesellschaft mit beschrankter Haftung, Essen, Germany

Filed Apr. 3, 1967, Ser. No. 627,788

Claims priority, application Germany, Apr. 1, 1966, K 58,899

Int. Cl. C10g *7/00, 21/00*; C07c *7/08*

U.S. Cl. 260—674 10 Claims

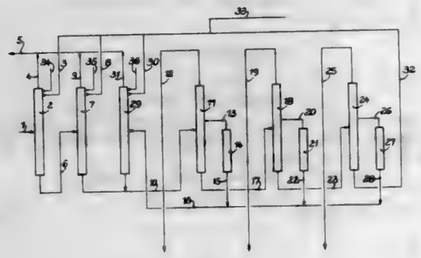
Extractive distillation process for simultaneously obtaining different aromatics with different boiling point ranges from a feed stock containing varied amounts of nonaromatics along with the desired aromatic compounds comprising in combination:

(a) Passing the feed stock through at least two extraction-distillation columns arranged in series after introducing the stock at a place in proximity to the vertical center of each column;

(b) Contacting the feed stock in each of said extractive distillation columns with an at least partially nonaromatic selectively active extraction agent containing aromatics other than the aromatics to be recovered, the said extraction agent being passed through the column from the top downwards;

(c) Each of said subsequent extraction-distillation columns being operated at a reduced pressure relative to the previous column;

(d) Withdrawing a mixture of aromatics and extraction agent from the bottoms of the said columns while withdrawing the nonaromatics in vapor form through the top of the columns;



(e) Then passing the said mixture of aromatics and extraction agent from the last extraction distillation column through a plurality of stripper columns arranged in series, one stripper column being provided for each desired type of aromatics;

(f) Withdrawing the aromatics to be recovered from the respective stripper columns at or in proximity to the top of the stripper column and withdrawing a nonaromatics containing product from a place above the place of introduction of the said mixture.

3,445,538

PREPARATION OF OLEFINS

Samuel Kahn, Rutherford, N.J., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Sept. 21, 1966, Ser. No. 580,906

Int. Cl. C07c *11/08, 1/30*

U.S. Cl. 260—677 **7 Claims**

Preparation of 2,3-dimethylbutenes by dehydrohalogenation of 1-halo-3,3-dimethylbutane in a catalyst system containing a high boiling mineral oil boiling above 200° C. and a dehydrohalogenation catalyst of alumina at a temperature of from about 200° to about 350° C.

3,445,539

SELECTIVE HYDROGENATION OF CONJUGATED DIENIC COMPOUNDS

George R. Lester, Park Ridge, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Oct. 13, 1967, Ser. No. 675,014

Int. Cl. C07c *11/00, 5/06*

U.S. Cl. 260—677 **8 Claims**

Dienic compounds are selectively hydrogenated from a mixture of monoolefinic and polyolefinic hydrocarbons by treating the mixture with a ruthenium chloride catalyst and hydrogen whereby any conjugated diolefinic hydrocarbons present are selectively hydrogenated to monoolefinic hydrocarbons.

3,445,540

ORGANOALUMINUM-COBALT SALT-TRISPHOSPHINE CATALYSTS FOR USE IN PREPARING 1,4-DIENES

Christos Sarafidis, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 3, 1968, Ser. No. 718,369

Int. Cl. C07c *3/60*; B01j *11/00*

U.S. Cl. 260—680 **13 Claims**

A catalyst for use in preparing 1,4-dienes from α-monoolefins and conjugated dienes is prepared by mixing an organoaluminum compound, a cobalt salt, and a trisphosphine. A process utilizing said catalysts for preparing 1,4-dienes is also desclosed.

3,445,541

COMBINED DEHYDROGENATION AND DISPROPORTIONATION

Louis F. Heckelsberg and Robert L. Banks, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Jan. 4, 1965, Ser. No. 423,206

Int. Cl. C07c *5/18*

U.S. Cl. 260—683 **6 Claims**

1. A hydrocarbon conversion process which comprises: passing a hydrocarbon feed comprising a reactant selected from the group consisting of acyclic paraffins and acyclic olefins having 3–6 carbon atoms per molecule into a zone containing a combined dehydrogenation-disproportionation catalyst comprising a mixture of between 10 and 98 volume percent of a dehydrogenation catalyst active for hydrocarbon dehydrogenation and formed of alumina promoted with a material selected from the group consisting of platinum, iron, potassium, sodium, chromium, uranium, vanadium, beryllium, magnesium, copper, calcium, and thorium and compounds thereof and between 2 and 90 volume percent of a disproportionation catalyst active for olefin disproportionation and formed of a base selected from the group consisting of silica and silica-alumina promoted with a compound selected from the group consisting of tungsten oxide and molybdenum oxide, said dehydrogenation component being effective to promote dehydrogenation under conditions for which said disproportionation component is effective to promote disproportionation; and

maintaining conditions, including conditions of temperature and pressure, in said zone to promote dehydrogenation and disproportionation.

3,445,542

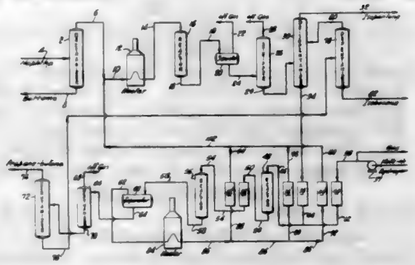
SEPARATION OF IMPURITIES IN AN ISOMERIZATION PROCESS

Dorrance P. Bunn, Jr., and Edward F. Janes, Houston, Tex., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

Filed Nov. 17, 1966, Ser. No. 595,142

Int. Cl. C07c *5/30, 7/12*; C10g *39/00*

U.S. Cl. 260—683.65 **12 Claims**



A process for isomerizing a C_4 to C_7 isomerizable hydrocarbon containing an impurity by passing the hydrocarbon through a molecular sieve bed to selectively separate the impurity, thereafter isomerizing the hydrocarbon and separating the isomerization product into a liqiud and gaseous effluent, passing the gaseous effluent through the spent molecular sieve bed to desorb the impurity contained in the bed and recovering the isomerized hydrocarbon from the liquid effluent.

3,445,543

CURED BLEND OF DIENE BLOCK COPOLYMER, OLEFIN RUBBER AND POLYSTYRENE

Jerry T. Gruver, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Dec. 13, 1965, Ser. No. 513,583

Int. Cl. C08f *19/06, 19/08*

U.S. Cl. 260—876 **8 Claims**

A composition comprising a block copolymer formed from a minor amount of a conjugated diene and a major amount of a monovinyl substituted aromatic compound such as styrene, a rubbery ethylene-1-olefin copolymer, and a homopolymer of a monovinyl substituted aromatic compound such as styrene, is cured to give a thermally stable impact resistant composition.

3,445,544

RUBBER-REINFORCED ACRYLATE RESIN CONTAINING POLYMERIC EPICHLOROHYDRIN

Joseph Michael Schmitt, Ridgefield, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Dec. 20, 1966, Ser. No. 603,173

Int. Cl. C08f *29/50*

U.S. Cl. 260—876 **10 Claims**

Compositions comprising a blend of (1) a two-phase impact polymer system composed of (a) a non-rubbery resinous polymer of a methacrylic ester monomer and (b) natural rubber or a synthetic rubber polymer and (2) a homopolymer of epichlorohydrin or a copolymer of epichlorohydrin and an alkylene oxide are disclosed.

3,445,545

ETHYLENICALLY UNSATURATED DERIVATIVES OF CINNAMIC ACID AND LIGHT RESISTANT POLYMERS PREPARED THEREFROM

Martin Skoultchi, Somerset, N.J., assignor to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 12, 1966, Ser. No. 600,795

Int. Cl. C08f *21/00, 3/62*; C07c *69/76*

U.S. Cl. 260—881 **14 Claims**

Ethylenically unsaturated derivatives of cinnamic acid and the polymers derived therefrom are prepared by a novel method involving reacting various cinnamic acid intermediates with an ethylenically unsaturated reagent such as glycidyl acrylate or glycidyl methacrylate. The resulting monomers may, thereafter, be homopolymerized or copolymerized with a wide variety of conventional ethylenically unsaturated, i.e. vinyl, monomers. The monomeric derivatives as well as the homo- and copolymers derived therefrom find utility as ultra-violet absorbers thereby providing synthetic plastics with resistance to the degradation which typically results from exposure to ultra-violet radiation.

3,445,546

BLENDS COMPRISING ETHYLENE/METHACRYLIC ACID COPOLYMER, POLYETHYLENE, AND ETHYLENE/VINYL ACETATE COPOLYMER

James Thompson Pledger, Jr., Orange, Tex., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Dec. 29, 1966, Ser. No. 605,624

Int. Cl. C08f *29/30, 29/26*

U.S. Cl. 260—897 **4 Claims**

Blends of 50–90% ethylene/methacrylic acid random copolymer, 5 to 45% polyethylene and at least about 5% ethylene/vinyl acetate that can be melt extruded into films.

3,445,547

PREPARATION OF ESTERS OF PHOSPHORIC ACID

Charles F. Baranauckas, Memphis, Tenn., and James J. Hodan, Tonawanda, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Dec. 1, 1964, Ser. No. 415,166

Int. Cl. C07f *9/08*; C08g *33/16*

U.S. Cl. 260—971 **10 Claims**

A process for the preparation of primary and secondary polyhydroxy phosphates by admixing oxygen in at least the stoichiometric amount with white phosphorus and a polyhydroxy reactant such as a diol in the presence of a metal or metal oxide catalyst such as aluminum, copper, scandium, titanium, vanadium, chromium, manganese, iron, cobalt, nickel, yttrium, zirconium, niobium, molybdenum, technetium, ruthenium, rhodium, palladium, rhenium, tungsten, osmium, iridium and platinum. The polyhydroxy phosphates are useful in the preparation of polyurethane foams.

3,445,548

PROCESS FOR MANUFACTURING TRIALKYL PHOSPHITE

Arthur C. Schulz, North Tonawanda, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

Continuation-in-part of application Ser. No. 284,493, May 31, 1963. This application Aug. 21, 1967, Ser. No. 661,926

The portion of the term of the patent subsequent to Aug. 17, 1982, has been disclaimed

Int. Cl. C07f *9/08, 9/12*

U.S. Cl. 260—982 **10 Claims**

Trialkyl phosphites are made by reacting an aryl phosphite with an alkanol in the presence of a transesterification catalyst, separating the catalyst and nonvolatile byproducts from the rest of the reaction mixture, by vaporizing off the volatiles and leaving the catalyst and nonvolatile byproducts as a residue, and then separating the desired trialkyl phosphite from the other vaporized volatile materials.

In a preferred embodiment, trimethyl phosphite is made from triphenyl phosphite and methanol in the presence of a sodium alcoholate catalyst.

3,445,549

METHOD FOR HEAT TREATMENT OF LYES AND SLUDGES

Bertel Kristian Hakulin, Varkaus, Finland, assignor to A. Ahlstrom Osakeyhtio, Noormarkku, Finland, a corporation of Finland

Filed June 15, 1967, Ser. No. 646,365

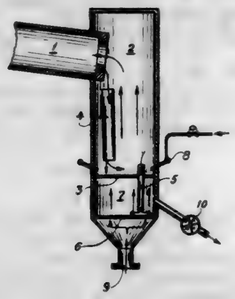
Claims priority, application Sweden, June 15, 1966, 8,156/66

Int. Cl. C04b *1/02*

U.S. Cl. 263—53 **5 Claims**

A method and an apparatus for heat treatment of lime sludge or similar materials such as different lyes and sludges. Such material is fed into the rotary kiln of com-

bined rotary and fluidized-bed kiln and is preheated whereafter it passed to the fluidized-bed kiln encountering in counter current air passed through the bottom of the



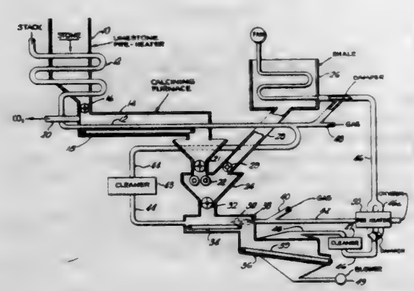
fluidized-bed kiln, through the cooler and the fluidized bed and further to the rotary kiln, whereby the material is finally burned and cooled and sluiced out.

3,445,550

METHOD OF MAKING CEMENT

John G. Hoad, Dearborn, Mich., assignor to John G. Hoad & Associates, Inc., Ypsilanti, Mich., a corporation of Michigan

Filed July 21, 1967, Ser. No. 655,198
Int. Cl. C04b 7/44, 1/00; F21b 7/00
U.S. Cl. 263—53 10 Claims



A method of producing portland cement clinker and carbon dioxide which includes heating limestone by radiant heat to separate therefrom and collect carbon dioxide, blending the remaining lime with argillaceous and siliceous material, heating the blend mixture by a direct fire to a state of incipient fusion to form clinker, cooling the clinker, utilizing the hot exhaust gases from the direct fire to supply part of the radiant heat for heating the limestone, and utilizing other heat exchange advantages to provide maximum thermal efficiency.

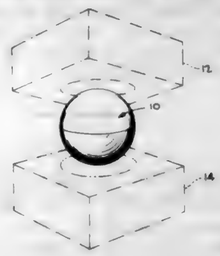
3,445,551

PEARLESCENT, PHOSPHORESCENT BALLS AND METHODS FOR MAKING THE SAME

Donald H. Griffin, Jamestown, N.C., assignor to The Flo-Back Company, Inc., High Point, N.C., a corporation of North Carolina

Filed May 20, 1966, Ser. No. 551,587
Int. Cl. C09k 1/12; B28b 1/28
U.S. Cl. 264—21 6 Claims

A toy article, specifically a hollow, expanded ball formed of a flexible, plastic material and incorporating non-toxic phosphorescent pigments, the ball having both a pearlescent appearance and exhibiting phosphorescent properties. Such articles are made by initially mixing the plastic material with the non-toxic phosphorescent pigments, casting the mixture into a hollow ball of an ori-



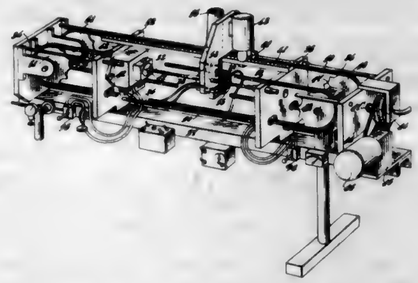
ginal diameter smaller than the final diameter of the article and then expanding the ball to increase the original diameter by at least approximately one and one-half times.

3,445,552

PROCESS FOR MAKING CORRUGATED PLASTIC TUBING

David C. Aungst, Media, and Ira T. Clement, Glen Mills, Pa., assignors to Pennsylvania Fluorocarbon Company, Inc., Clifton Heights, Pa., a corporation of Pennsylvania

Filed Sept. 29, 1966, Ser. No. 582,963
Int. Cl. B29d 23/18
U.S. Cl. 264—40 1 Claim



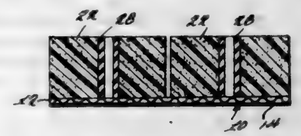
In making plastic tubing by pushing tubing forward by a mandrel, heat is applied at a place where a new corrugation is to be formed, and step by step as a corrugation forms, the heat is moved in the direction from the corrugated portion of the tubing, thus protecting against overheating.

3,445,553

METHOD OF MAKING A SHOCK ISOLATOR ELEMENT FOR CUSHIONED CONTAINER UNIT

James S. Hardigg, P.O. Box 89, Conway, Mass. 01341

Original application Apr. 2, 1965, Ser. No. 445,164, now Patent No. 3,283,988, dated Nov. 8, 1966. Divided and this application Mar. 7, 1966, Ser. No. 566,180
Int. Cl. B29h 7/20
U.S. Cl. 264—45 6 Claims



A method of making a shock isolator element which includes positioning at least one flexible rod element

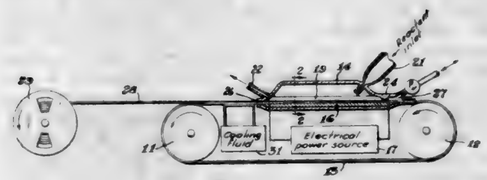
in a mold so that the rod element extends from the bottom of the mold substantially to the top of the mold, pouring a potentially foamable compressible cellular elastomeric material in said mold whereby the reaction mixture foams in place to substantially surround the rod element, curing the resultant foamed compressible cellular elastomeric material, removing foamed compressible cellular elastomeric material from the mold with the rod element encased therein, the cross-sectional area ratio of said compressible cellular elastomeric material to the rod element being at least about 20:1.

3,445,554

MANUFACTURE OF SILICON CARBIDE RIBBONS

George A. Jerome, Hemlock, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

Filed Mar. 11, 1966, Ser. No. 533,576
Int. Cl. C04b 35/64, 33/32
U.S. Cl. 264—56 4 Claims



A method of making continuous dense, homogeneous silicon carbide ribbons or sheets is disclosed. Silicon carbide is pyrolytically deposited onto a heated, moving substrate having a smooth surface and a coefficient of thermal expansion which is different from that of the deposited silicon carbide. As the moving substrate cools, stresses between the substrate and the deposited silicon carbide ribbon cause the ribbon to separate from the substrate.

3,445,555

PROCESS FOR AGGLOMERATING FINE METAL POWDERS

De Witt Henry West and Alexander Bowen Simpson, Swansea, Wales, assignors to The International Nickel Company, Inc., New York, N.Y., a company of Delaware

No Drawing. Filed Mar. 13, 1967, Ser. No. 622,426
Claims priority, application Great Britain, Mar. 17, 1966, 11,793/66
Int. Cl. B22f 3/02
U.S. Cl. 264—111 10 Claims

Finely divided soft metal powders, e.g. nickel powders, are agglomerated by ball milling the powders at temperatures between about 40° C. and 200° C. and in a non-oxidizing atmosphere.

3,445,556

METHOD OF PREPARING SHAPED ARTICLES OF CELLULOSE GRAFT COPOLYMERS

Joseph M. Kuzmak, Media, and Joseph W. Schappel, Morton, Pa., assignors to FMC Corporation, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed May 11, 1966, Ser. No. 549,167
Int. Cl. D01d 5/08; D01f 3/28
U.S. Cl. 264—195 6 Claims

Cellulose graft copolymers are prepared by extruding viscose containing a free-radical producing catalyst, in the form of a shaped article into a coagulating medium, then subjecting the article to graft copolymerizable conditions prior to complete regeneration of said article.

3,445,557

PROCESS FOR PREPARING FILAMENTS FROM β-POLYAMIDES

Ernst Horoldt, Kelkheim, Taunus, Germany, assignor to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Apr. 19, 1965, Ser. No. 449,283
Claims priority, application Germany, Apr. 18, 1964, F 42,651
Int. Cl. D02j 1/22; D01f 7/04
U.S. Cl. 264—210 3 Claims

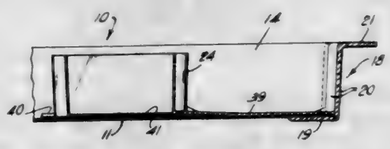
A process for preparing beta-polyamides is disclosed which consists of spinning an acid solution of the polymer at room temperature into an aqueous coagulating bath at a temperature of 5° C. to 50° C. and then drawing the coagulated filaments 3 to 15 times their original length outside the coagulating bath.

3,445,558

METHOD OF MAKING A CONTAINER

William R. Heffernan, Westfield, N.J., assignor to Johnson & Johnson, a corporation of New Jersey

Filed Mar. 14, 1966, Ser. No. 533,945
Int. Cl. B32b 7/06
U.S. Cl. 264—242 2 Claims



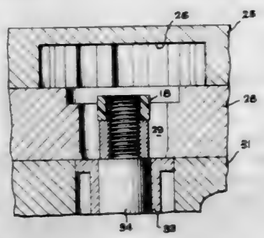
A composite container having flexible paneling with a molded plastic frame of structural member sections determining the contour of the flexible paneling and having plastic partitioning means for segregating the contents of one section of the container from contents in a different section, is molded by at least partially closing the mold matrices during the molding operation with the paneling material itself where adhesion between the plastic frame member is desired and by closing the partition matrix by a spacer adhesively incompatible with the plastic in areas where no connection between the partitioning means and the paneling is desired.

3,445,559

METHOD OF MAKING A SELF-LOCKING STRUCTURE

David C. Siteman, Los Angeles, Calif., assignor to Olympic Plastics Company, Inc., Los Angeles, Calif., a corporation of California

Original application Apr. 28, 1965, Ser. No. 451,604, Divided and this application Feb. 27, 1967, Ser. No. 641,073
Int. Cl. B29d 3/00
U.S. Cl. 264—263 5 Claims



A locknut of non-resilient material molded under high pressure by placing a metal, internally threaded sheath,

and a collar of somewhat dilatant abrasive resistant material on a stud projecting into a mold cavity. The sheath provides holding threads. The collar contracts under molding pressure to provide a seal around the stud during molding, and acts as a lock material to grip a stud when the locknut is installed in service.

3,445,560

METHOD FOR MAKING SPIRAL-SHAPED CONTINUOUS ROWS OF SLIDE FASTENER ELEMENTS

Arthur Steingruebner, Am Buchenhang 11, Bonn, Germany

Filed June 3, 1966, Ser. No. 555,172

Claims priority, application Germany, June 4, 1965, S 97,467

Int. Cl. B21d *53/50*

U.S. Cl. 264—281 4 Claims



Plastic wire is pushed into the winding zone of a coil winding machine at such a high rate that the turns of the coil formed in the zone have an internal circumference which is at least twice the circumference of the mandrel on which the wire is being wound. The loose turns are moved axially along the mandrel, heated for stress relief, and compressed locally while hot to form interlocking heads and other functional elements.

3,445,561

PROCESS FOR PRODUCING POLYCARBONATE FILMS AND PRODUCT THEREOF

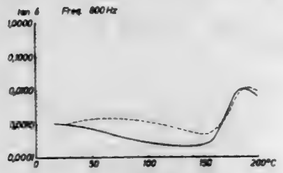
Karl Huff and Hermann Hofmeier, Dormagen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

Filed June 21, 1963, Ser. No. 289,697

Claims priority, application Germany, June 25, 1962, F 37,150

Int. Cl. D01d *5/00*; B29c *25/00*

U.S. Cl. 264—288 13 Claims



1. A process for the production of polycarbonate films having improved physical properties which comprises forming a polycarbonate film having a crystallinity of at least about 10%, longitudinally stretching said film to from about 2 to about 8 times its original length and subsequently shrinking said film while substantially free of tension in its longitudinal direction in an amount at least about 3% of its stretched length.

3,445,562

TREATMENT OF VINYL ALCOHOL POLYMER YARNS

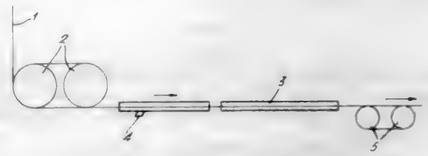
Pierre Jean Terra, Lyon, and Andre Pellet, Tassin-la-Demi-Lune, France, assignors to Societe Rhodiaceta, Paris, France, a corporation of France

Filed Mar. 25, 1965, Ser. No. 442,642

Claims priority, application France, Mar. 25, 1964, 968,673

Int. Cl. B29c *17/02*

U.S. Cl. 264—290 7 Claims



Vinyl alcohol polymer yarns are stretched in a tube which is at an angle between 0° and 25° to the horizontal, whose length, in meters, is between 2/3 and 4/3 the speed of the entry of the yarn into the tube, in meters per minute, which is of small (e.g. 2.5–50 times the diameter of the yarn) and advantageously uniform cross-section throughout its length, which is heated at a temperature between 235° and 250° C., and into and through which, in the direction of the path followed by the yarn, a gaseous fluid at atmospheric pressure and at a temperature between 150° and 250° C. is fed at a rate of flow of 0.5 to 1.7 cubic meters per hour per cm.² of cross-section of the tube.

3,445,563

PROCESS OF PREPARING VITAMIN-CONTAINING GELLED AQUEOUS COLLOID BEADS

John Brian Clegg, Ulverston, and Leonard Godfrey Elliott, Great Urswich, near Ulverston, England, assignors to Glaxo Laboratories Limited, Greeford, Middlesex, England, a British company

No Drawing. Filed May 23, 1966, Ser. No. 551,877

Claims priority, application Great Britain, May 28, 1965, 22,814/65

Int. Cl. A61k *15/00*

U.S. Cl. 424—35 15 Claims

Gelled aqueous colloid beads, preferably containing at least one vitamin, are prepared by dispersing the liquid aqueous colloid in a gas phase to produce gelled particles which are collected with agitation in a collecting powder which is a mixture of an inorganic flow-promoting powder which is non-sorbent with respect to water and an inorganic water-sorbing powder.

3,445,564

RAPIDLY DRYING LOWER ALIPHATIC ALCOHOL-ACETONE SANITIZING COMPOSITION AND METHOD

Ely A. Kirschner, Fair Lawn, N.J.
(24 Woodward Ave., Apt. 16, New Haven, Conn. 06512)

No Drawing. Filed Jan. 4, 1965, Ser. No. 428,007

Int. Cl. A61k *27/00*, *9/00*

U.S. Cl. 424—45 6 Claims

A method, compositions and articles for sanitizing public or communal facilities prior to individual use are described. The method consists of applying a thin layer of a rapidly drying liquid germicidal composition to a surface, such as a toilet seat, and drying the surface prior to use. The rapidly drying germidical compositions consist essentially of a lower aliphatic alcohol and at least about 5% of a volatilizing agent therefor, such as acetone. The articles of the invention are dispensing units containing the germicidal compositions, including aerosol and other spray units and other dispensing devices capable of applying a thin layer of the germicidal compositions to a surface to be sanitized.

3,445,565

SPRAYABLE COMPOSITION FOR THE APPLICATION TO THE FUR OF ANIMALS

Edmund G. Locher, Zurich, Switzerland (Chateau-de-la-Motte, Chateaurenard, Loiret, France); Eugen Wyler, 18 Allmendboden, Kusnacht, Zurich, Switzerland; and Hermann Nolting, 43 Kulmannstrasse, Zurich, Switzerland

No Drawing. Filed Jan. 24, 1966, Ser. No. 522,356

Claims priority, application Switzerland, Jan. 26, 1965, 1,085/65

Int. Cl. A61k *27/00*; A01n *9/00*, *17/08*

U.S. Cl. 424—46 3 Claims

A sprayable composition for the application to the fur of animals consists essentially of a normally gaseous propellent at a pressure sufficient to liquify same, a minor amount of a normally liquid insect repellent or insecticide as an active agent, the active agent being dissolved in the propellent while the latter is in the liquid state, and a major amount of an inert solid carrier in powder form, dispersed in the solution of the active agent in the propellent. Each particle of the powdered carrier has a minute part of said solution absorbed therein or adsorbed thereon to help the active agent penetrate more deeply when sprayed from an aerosol can on an animal's fur.

3,445,566

HAIR SPRAY COMPOSITIONS CONTAINING AN ULTRAVIOLET ABSORBING FILM FORMING COPOLYMER

Martin Skoultchi, Somerset, and Frank Theodore Koehler, Jr., Plainfield, N.J., assignors to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 18, 1966, Ser. No. 535,340

Int. Cl. A61k *7/10*

U.S. Cl. 424—47 3 Claims

Aerosol formulations suitable for use as hair spray lacquers comprising an organic solvent solution of an ultraviolet absorbing, film forming copolymer in admixture with a propellant therefor.

3,445,567

STABLE STANNOUS FLUORIDE COMPOSITION

Joseph C. Muhler, Indianapolis, Ind., assignor to Indiana University Foundation, Bloomington, Ind., a not-for-profit corporation of Indiana

No Drawing. Filed Feb. 10, 1966, Ser. No. 526,371

Int. Cl. A61k *27/00*, *7/16*

U.S. Cl. 424—52 4 Claims

Stable anticariogenic compositions effective in increasing the caries resistance of tooth tissues, especially the walls of a tooth cavity prior to restorative filling, may be obtained by admixing with an aqueous stannous fluoride solution comprising up to about 30% by weight stannous fluoride, a stabilizing agent selected from the group consisting of sorbitol and mixtures of sorbital and glycerine comprising at least about 25% sorbitol, by volume, with the volumetric ratio of stabilizing agent to water being about 1:1.

3,445,568

ELECTROHYDRAULIC PROCESS FOR PRODUCING ANTIGENS

Merton Allen, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed Feb. 2, 1965, Ser. No. 429,817

The portion of the term of the patent subsequent to Jan. 30, 1985, has been disclaimed

Int. Cl. A61k *27/00*; A61l *3/00*, *1/00*

U.S. Cl. 424—92 2 Claims

A process and apparatus are disclosed wherein viable microorganisms are suspended in a relatively noncompressible dielectric liquid medium and subjected to one or more steep pressure or shock waves produced by an electric spark discharge within said liquid as the result of a capacitor discharge. The shock wave destroys the viability of the microorganisms without destroying their antigenicity and is therefore useful in the production of vaccines or bacterins.

3,445,569

URINARY ACIDIFICATION COMPOSITION

Alfred R. Globus, Long Island City, N.Y., assignor to Guardian Chemical Corporation, Long Island City, N.Y., a corporation of the United States

No Drawing. Continuation of application Ser. No. 400,218, Sept. 29, 1964. This application Oct. 25, 1967, Ser. No. 678,110

Int. Cl. A61k *27/06*

U.S. Cl. 424—128 4 Claims

1. A medicinal agent for acidifying urine comprising equal parts by weight of monosodium phosphate and sodium acid pyrophosphate.

3,445,570

FUNGICIDAL COMPOSITIONS AND METHODS USING MESOMERIC PHOSPHONIUM COMPOUNDS

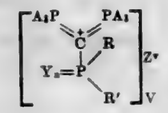
Gail H. Birum, Kirkwood, and Clifford N. Matthews, St. Louis, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed June 13, 1966, Ser. No. 556,853

Int. Cl. A01n *9/36*; C07f *9/54*

U.S. Cl. 424—204 16 Claims

Fungicidal compositions comprising a mesomeric phosphonium salt of the formula



wherein A is aryl, R and R' are alkyl, cycloalkyl, aryl, aralkyl, alkaryl, haloaryl or haloaralkyl, Y is oxygen, sulfur or selenium, *n* is 0 or 1 and Z is an anion, and methods for the control of fungal organisms.

3,445,571

HYDROCORTISONE CYCLOHEXYLSULFAMATE, PHARMACEUTICAL COMPOSITIONS THEREOF, AND METHOD OF USE

Ernest J. Sasmor, Yonkers, N.Y., assignor to The Purdue Frederick Company, Westchester County, N.Y., a corporation of New York

No Drawing. Filed May 23, 1966, Ser. No. 552,678

Int. Cl. A61k *17/16*; C07c *169/34*

U.S. Cl. 424—243 17 Claims

6. A pharmaceutical composition comprising a pharmaceutically acceptable carrier and from 0.5 mg. to 50 mg. of hydrocortisone cyclohexylsulfamate.

3,445,572

INCREASING POULTRY EGGSHELL THICKNESS BY ORALLY ADMINISTERING ADRENERGIC COMPOUNDS

Lawrence J. Machlin, St. Louis, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Aug. 16, 1965, Ser. No. 480,178

Int. Cl. A61k *27/00*; A23k *1/18*

U.S. Cl. 424—264 5 Claims

A method for increasing poultry eggshell thickness by orally administering to laying hens a feed composition containing an adrenergic compound in an amount in the range of from 1 to 50 milligrams per pound of feed.

3,445,573
PHARMACEUTICAL COMPOSITIONS WITH SALIDIURETIC AND RESERPINE ANTAGONIST ACTIVITY COMPRISING N-[2',6'-DIMETHYL-PIPERIDYL-(1')]-3-SULFAMYL - 4 - CHLOROBENZOIC ACID AMIDE

Ernst Jucker, Ettingen, Baselland, and Adolf J. Lindenmann, Basel, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland

No Drawing. Continuation-in-part of application Ser. No. 325,784, Nov. 22, 1963. This application June 24, 1966, Ser. No. 560,062
Claims priority, application Switzerland, Nov. 9, 1960, 12,547/60; Dec. 2, 1960, 13,544/60; June 6, 1961, 6,547/61; Sept. 11, 1961, 10,474/61
Int. Cl. A61k *27/00*; C07d *29/34*
U.S. Cl. 424—267 2 Claims

Pharmaceutical composition with salidiuretic and reserpine antagonist activity comprising a carrier and N-[2',6' - dimethyl-piperidyl-(1')] - 3-sulfamyl-4-chlorobenzoic acid amide which is effective at smaller dosages of between 20 and 40 mg. daily and is of benefit to control sodium chloride diuresis in difficult situations involving hypertension.

3,445,574
COMPOSITIONS AND METHOD FOR ARRESTING SPASMS WITH THE DIETHYLAMINOETHYL ESTER OF BETA-(1-NAPHTHYL)-BETA'-TETRAHYDROFURYLISOBUTYRIC ACID

Etienne Szarvasi, Lyon, and Liliane Neuvy, Paris, France, assignors to Lipha, Lyonnaise Industrielle Pharmaceutique, a corporation of France

No Drawing. Continuation-in-part of application Ser. No. 308,662, Sept. 13, 1963. This application Mar. 23, 1966, Ser. No. 536,612
Claims priority, application France, Sept. 20, 1962, 83,555
Int. Cl. A61k *25/00, 27/00*
U.S. Cl. 424—285 8 Claims

The present disclosure relates to the arresting of spasms of the circulatory system in humans by the use of compositions containing the diethylaminoethyl ester of beta-(1-naphthyl)-beta'-tetrahydrofurylisobutyric acid.

3,445,575
CONTROL OF ACARIDS WITH TRIPHENYL TIN COMPOUNDS

James L. Taylor, Gainesville, Fla., assignor to Thompson-Hayward Chemical Company, Kansas City, Kans., a corporation of Delaware

No Drawing. Filed July 24, 1967, Ser. No. 655,274
The portion of the term of the patent subsequent to Aug. 23, 1983, has been disclaimed
Int. Cl. A01m *9/24*
U.S. Cl. 424—288 4 Claims

This invention relates to a method of controlling pestiferous organisms of the order Arachnida, family Tetranychidae, comprising contacting said organisms with an effective amount of a compound of the formula;



wherein each R may be phenyl, halophenyl or alkoxyphenyl; and X may be hydroxy, acyloxy or halogen.

3,445,576
BROMODIFLUORONITROMETHANE FOR CONTROL OF INSECTS, FUNGI AND NEMATODES

Eugene E. Kenaga, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Sept. 3, 1963, Ser. No. 306,331
Int. Cl. A01n *9/20, 7/04*
U.S. Cl. 424—349 1 Claim

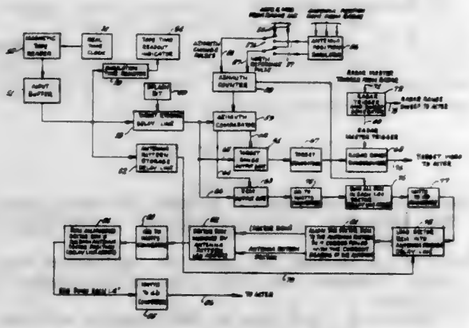
A method for controlling insects, fungi and nematodes which includes fumigation of matter infested with at least one such organism with a lethal concentration of bromodifluoronitromethane, and fumigant compositions containing the same as the active ingredient thereof.

ELECTRICAL

3,445,577
DIGITAL RADAR SIMULATOR SYSTEM

Irving Sperling, Van Nuys, and Connable F. Wills, Venice, Calif., assignors to System Development Corporation, Santa Monica, Calif., a corporation of California

Filed Dec. 29, 1967, Ser. No. 694,441
Int. Cl. G09b *9/00*; G01s *9/00*
U.S. Cl. 35—10.4 13 Claims



A digital radar simulator supplying search radar systems with precise and rapid simulated target and electronic countermeasure input data for training programs. The simulator provides for splashing or recall of any target at any time during an exercise and when a target is splashed both its video and electronic countermeasure data are removed from the simulation product. A magnetic tape reader feeds antenna pattern data to an antenna pattern storage delay line at the beginning of each exercise where it is stored for the remainder of the exercise. It then feeds target and electronic countermeasure input into a target storage delay line which keeps the data constantly recirculating. Target returns are simulated by constantly comparing the radar antenna's azimuth position with the azimuth position of each stored target. When an azimuth match occurs and no splash bit has been entered the range information is transferred to a target generator unit which converts the digital range data into an equivalent time delay. The start of this time delay is synchronized with the radar range trigger. At the end of the equivalent time delay period a video pulse representing the target echo is generated and fed to a standard anti-countermeasure trainer (ACTER) such as the Air Force OA–1767 and thence to the search radar system where it may be displayed. For electronic countermeasure processing, the air space surrounding the search radar is divided into 256 sectors of 1.4° each and, just prior to the time that the antenna scans a given sector, computer elements utilizing the stored antenna pattern and jamming intensity data calculate an electronic countermeasure control signal which represents a composite picture of the instantaneous sum of all the jamming power from all aircraft within radar coverage which would be entering the main, side and back

lobes of the radar antenna at that sector. The electronic countermeasure data is normally in db and a simple subtraction of the antenna pattern data therefrom results in a division of power by gain. For summation of the power the electronic countermeasure data is converted from db to watts power and the electronic countermeasure powers of all targets in a 1.4° segment are linearly added and then converted back into db for subtraction of the antenna pattern data therefrom. The result is again converted from db into watts for summation of all the 256 sectors and back again into db to be fed to the ACTER in synchronism with the search radar antenna rotation as the instantaneous sum of all the jamming power entering all the lobes of the antenna from all aircraft when the antenna is physically positioned in the sector being calculated for display.

3,445,578
CHIFF AND TONE GENERATOR

Thomas W. Cunningham, Cincinnati, Ohio, assignor to D. H. Baldwin Company, Cincinnati, Ohio, a corporation of Ohio

Original application Aug. 19, 1963, Ser. No. 302,968. Divided and this application June 27, 1966, Ser. No. 571,670
Int. Cl. G10h *3/00*
U.S. Cl. 84—1.04 19 Claims

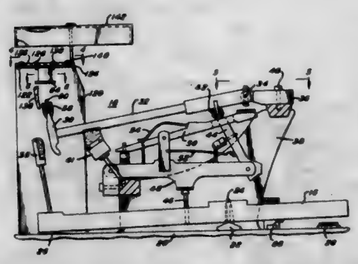


2. An organ system comprising
(a) a gamut of tone oscillators,
(b) a key switch in series with each of said oscillators,
(c) a high Q resonant tank circuit in cascade with each of said key switches, each high Q resonant tank circuit being detuned by a small increment Δf with respect to the tone oscillator in series therewith, whereby on closure of any selected key switch transient current at one frequency and steady state current at another adjacent frequency build up relatively slowly in said resonant circuit, and
(d) means responsive to total current in said resonant circuit for acoustically radiating sound.

3,445,579
ELECTRONIC MUSICAL APPARATUS

Jerome Markowitz, Allentown, Errol Robert Griffith, Topton, and James Richard Wetherhold, East Texas, Pa. (all % Allen Organ Company, Macungie, Pa. 18062)

Continuation-in-part of application Ser. No. 275,380, Apr. 24, 1963. This application Feb. 8, 1965, Ser. No. 431,031
Int. Cl. G10h *1/02, 3/00*; G10c *3/06*
U.S. Cl. 84—1.24 13 Claims

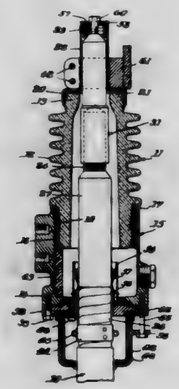


An electronic musical instrument having a keyboard and piano action transduces the action movement into a musical tone, preferably having the tonal qualities of a piano. Electronic and acoustical components are used to produce musical tones without the aid of strings or a conventional sounding board. A "knock" sound generating device is included to duplicate the knock sound typical of conventional pianos.

3,445,580
POWER CABLE TERMINATION WITH IMPROVED ENTRANCE SYSTEM

George E. Lusk, Downers Grove, Ill., assignor to G & W Electric Specialty Company, Blue Island, Ill., a corporation of Illinois

Filed Oct. 13, 1967, Ser. No. 675,187
Int. Cl. H02g *15/04, 15/08*
U.S. Cl. 174—12 6 Claims



The present terminator is factory assembled to include a stress control device and the terminator is filled with a dielectric compound and then sealed to prevent contamination. After the cable end is prepared, the terminator can either be slipped onto the cable or bolted to mounting structure and the cable pushed into the terminator. The excess dielectric displaced by the cable is collected in a separate container.

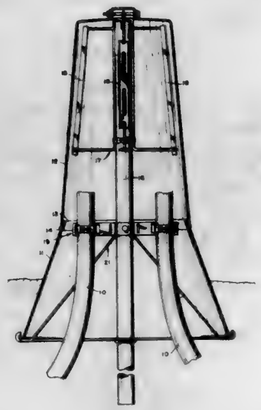
3,445,581
TERMINAL HOUSING FOR UNDERGROUND ELECTRICAL DISTRIBUTION SYSTEMS

Earl C. Barb, New Canaan, Conn., assignor to General Cable Corporation, New York, N.Y., a corporation of New Jersey

Filed June 21, 1966, Ser. No. 559,165
Int. Cl. H01b *17/56*; H01r *13/46*
U.S. Cl. 174—138 9 Claims

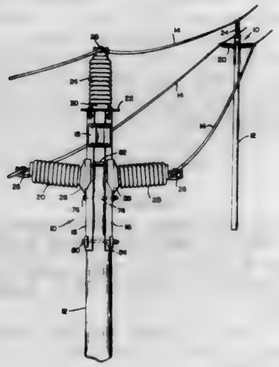
A terminal housing for use in underground electrical distribution systems comprises a circular shell buried in the ground for a portion of its height, a central post projecting upwardly through and beyond the shell, and a removable cover cooperating with the shell to enclose the post and elements supported on it. Such elements include a support for a cable emerging from the ground within the shell, locating means interconnecting the post and shell, and a common means for securing the locating means and cable support to the post. The locating means is a spider having a central ring surrounding the post and three radiating arms which terminate in hooks receiving the lower edge of the shell. Electrical components within

the housing may be mounted on generally vertical mounting strips connected to the post through radiating arms



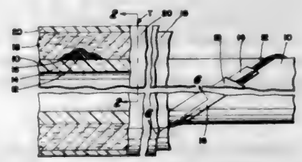
which are elastically bendable to permit their ready disengagement from the mounting strips.

3,445,582
POLE TOP MOUNTING BRACKET FOR ELECTRICAL TRANSMISSION LINE
Leo E. Herrenkohl, Concord, and Vincent J. Ghio, Jr., Greenbrae, Calif., assignors to Pacific Gas and Electric Company, San Francisco, Calif., a corporation of California
Filed Sept. 29, 1966, Ser. No. 582,828
Int. Cl. H02g *7/20;* **H01b** *17/12*
U.S. Cl. 174—43 **10 Claims**



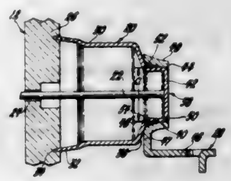
A mounting device for supporting insulators on a power transmission pole comprising a pair of spaced apart side plates adapted to be attached to opposite sides and to extend above the top end of the pole. A pair of adjustable brace means interconnect the side plates above the pole and a support plate for one insulator is provided on top of the side plates. Means are attached by a horizontal bolt to the sides of the side plates for supporting two additional insulators which extend outwardly from the pole. The weight of lines attached to the insulators creates forces tending to clamp the side members together on the pole.

3,445,583
COMPOSITE TUBING
Albert E. Chrow, Chagrin Falls, Ohio, assignor to Samuel Moore and Company, Mantua, Ohio, a corporation of Ohio
Filed Nov. 29, 1965, Ser. No. 510,202
Int. Cl. H01b *7/04, 7/28*
U.S. Cl. 174—47 **10 Claims**



A composite tubing product for use in transmitting pulsating pressurized fluid, including an inner polymeric core tube and a continuous electrical conductive element extending in helically convoluted relation around the core tube, a reinforcement sheath of fibrous material disposed in circumferentially engaged relation around the core tube, a flexible polymeric binder tape disposed intermediate the core tube and the reinforcement sheath and disposed in engaged covering relation over the conductive element to maintain the electrical continuity of the tubing, and an outer sheath covering the reinforcement sheath and providing a protective cover for the tubing.

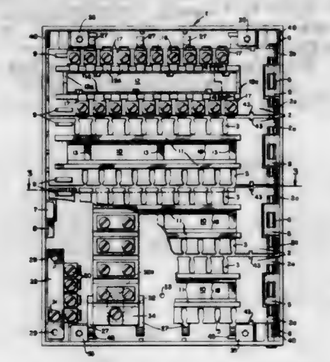
3,445,584
FERRULE FOR SEALED BEAM HEADLAMP
Donald R. Boys, Homer R. Gelling, and John S. Miller, Anderson, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 1, 1966, Ser. No. 569,455
Int. Cl. H05k *5/06;* **H01j** *5/48, 5/50*
U.S. Cl. 174—50.52 **6 Claims**



A ferrule for a sealed beam headlamp has a tapered or otherwise recessed head which interfits with an annular lip of an electrical terminal to form a chamber therebetween in which solder collects and solidifies to form a mechanical lock against relative axial movement between the ferrule and the terminal.

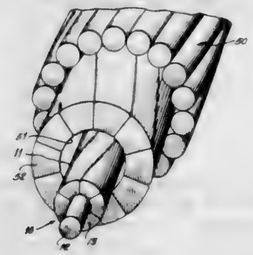
3,445,585
CABLE DISTRIBUTION BOX
Christian Meisel and Günter Salewski, Meissen, and Rudolf Bock, Dresden, Germany, assignors to VEB Kabelwerk Oberspree (KWO), Berlin-Oberschoneweide, Germany
Filed Dec. 6, 1967, Ser. No. 688,508
Int. Cl. H01r *13/46*
U.S. Cl. 174—59 **24 Claims**

Cable distribution box for telecommunication cables and conductors, as well as for conductors of larger cross sections, comprising in a closed housing a number of elongated mounting plates adapted to receive connecting elements which may be blocks or connectors. Various structural elements are provided on the walls of the housing, the mounting plates and the connecting blocks for securing, guiding and attaching the wires of the cables and conductors. Designation plates may be provided for



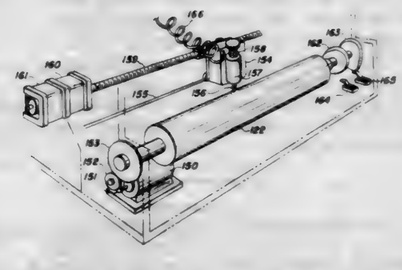
ready identification. The box is adapted for under- and over-plaster installation. The connecting blocks have openings for receiving attaching means which may be in the form of clamping pins, soldering pins or coiling pins for the wires.

3,445,586
LOOSE-CORE CONDUCTOR HAVING IMPROVED SELF-DAMPING COMBINED WITH IMPROVED INTERNAL WEAR RESISTANCE
Aubrey T. Edwards, Oakville, Ontario, and Guy A. Mussen, Westmount, Quebec, Canada, assignors to Aluminium Laboratories Limited, Montreal, Quebec, Canada, a corporation of Canada
Filed Dec. 30, 1966, Ser. No. 606,338
Int. Cl. H01b *5/10;* **H02g** *7/14*
U.S. Cl. 174—130 **4 Claims**



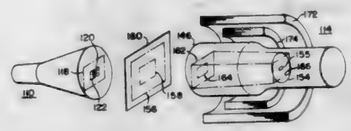
A cable for use in overhead transmission lines, of the type having a multi-stranded core including steel wires to bear the preponderance of the tensile forces acting upon the cable, and a sheath surrounding the core and spaced radially therefrom, so that the core is loose within the sheath, the sheath comprising multiple strands of a good electric conductor which is softer than steel, e.g. aluminum, the improvement comprising providing the core with an outer layer of conductor material substantially as soft as the conductor material in the sheath, and having a smooth outer surface, and providing the inner surface of the sheath with a smooth surface, the smooth inner surface of the sheath and the smooth outer surface of the core being spaced apart at least 50 mils in difference of diameter. In the preferred embodiment the inner layer of sheath wires are aluminum, and have surfaces which mutually cooperate to define the aforesaid smooth inner sheath surfaces; and the core comprises a steel wire or wires surrounded by a plurality of aluminum wires also having cooperating surfaces defining the aforesaid smooth outer surface of the core. A highly advantageous geometric configuration for aluminum wires useful to form either of these two cooperative smooth surfaces is that of a truncated segment, as defined and illustrated herein. It is alternatively convenient to compact aluminum wires upon the steel wire or wires to form the core, as by drawing the assembly through a die.

3,445,587
RECORDING STYLUS CONTROL SYSTEM
Francis J. Jansen, Monterey Park, Robert W. Reynolds, Los Angeles, and George T. Shimabukuro, Monterey Park, Calif., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Oct. 1, 1965, Ser. No. 492,195
Int. Cl. H04n *5/76*
U.S. Cl. 178—6.6 **3 Claims**



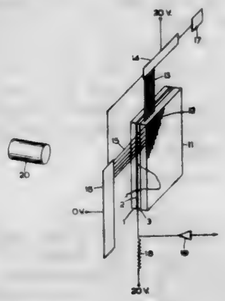
A facsimile receiver including a recording stylus and means for activating the stylus during the time period when video signals are transmitted to the receiver and when the transmitter and receiver are in synchronization.

3,445,588
OPTICAL IMAGE SCANNING SYSTEM
James F. Nicholson, Pine City, N.Y., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 25, 1966, Ser. No. 545,122
Int. Cl. H04n *3/00, 5/38*
U.S. Cl. 178—6.8 **5 Claims**



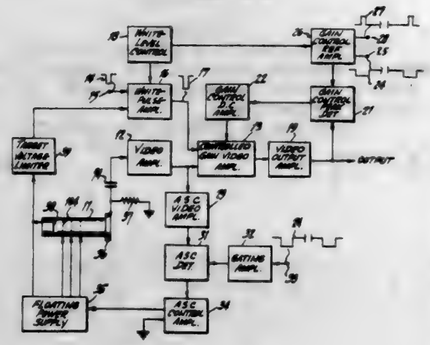
A constant intensity light beam of a flying spot scanner is projected and scanned across a target surface in synchronism with a light sensitive image dissector tube. The light beam deflecting signal is controlled by the image dissector deflecting signal.

3,445,589
ELECTRICAL SCANNING APPARATUS
Stanley Taylor, Sunbury-on-Thames, England, assignor to Electric & Musical Industries Limited, Hayes, England, a company of Great Britain
Filed June 28, 1965, Ser. No. 467,460
Claims priority, application Great Britain, July 3, 1964, 27,487/64
Int. Cl. H04n 3/16; H01j 31/26
U.S. Cl. 178—7.1 **7 Claims**



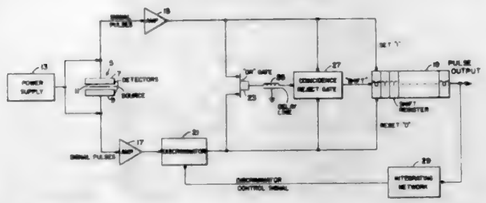
Pick-up and scanning apparatus comprises a photo-conductive layer having a conductive signal plate applied on one surface and an array of solid state semi-conductor devices for scanning the other surface. Each semi-conductor device is a thin film triode having source, drain and gate electrodes, the source electrode of each device being in contact with the scanned surface of the photo-conductive layer and the drain and gate electrodes of the photo-conductive devices being conductively connected in groups so that the photo-conductive devices can be selectively switched to a low impedance condition to scan the photo-conductive layer.

3,445,590
COORDINATED SENSITIVITY AND AMPLIFICATION CONTROL SYSTEM
Robert A. Dischert, Burlington, and Norman L. Hobson, Pennsauken, N.J., assignors to Radio Corporation of America, a corporation of Delaware
Filed Mar. 19, 1965, Ser. No. 441,124
Int. Cl. H04n 5/40; H03g 3/30
U.S. Cl. 178—7.2 **12 Claims**



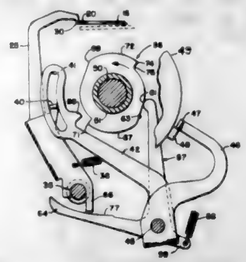
In a signalling system including a transducer for producing a signal in response to and representative of energy impinging thereon, apparatus is provided which is responsive to a variation of the signal level from the transducer to alter the sensitivity of the transducer and which also includes a gain controlled amplifier which normally produces an amplified version of the transducer output signal and which amplifier is also responsive to a limit sensitivity of the transducer to alter the gain of the amplifier.

3,445,591
GENERATOR OF MATHEMATICALLY RANDOM ENTITIES
Dale R. Koehler, 2208 Sockwell Drive, Huntsville, Ala. 35803; John T. Grissom, 4809 Cottonwood Drive, Huntsville, Ala. 35810; and Robert G. Polk, 3013 Bayless Drive, Huntsville, Ala. 35805
Filed Jan. 4, 1966, Ser. No. 518,733
Int. Cl. H04l 9/00; H03b 29/00
U.S. Cl. 178—22 **3 Claims**



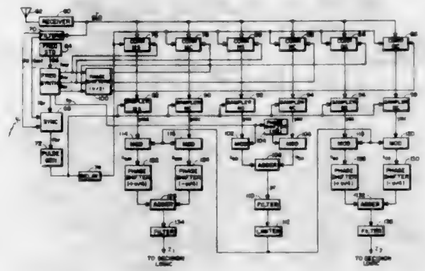
Random numbers or pulses are generated by a system for detecting occurrences of some natural stochastic physical process, such as radioactive decay, white noise, etc. The detected occurrences act as signal inputs to a shift register. The settings of the stages of shift register, at any chosen time, is a random number, and the output of the shift register is random pulses.

3,445,592
START MECHANISM FOR TELEGRAPH SELECTOR
Gordon C. Meyers, Glenview, and Richard L. Vensel, Olympia Fields, Ill., assignors to Teletype Corporation, Skokie, Ill., a corporation of Delaware
Filed Oct. 19, 1965, Ser. No. 497,726
Int. Cl. H04l 15/24, 17/16
U.S. Cl. 178—33 **6 Claims**



A mechanism for assuring that the start lever of a telegraph selector will not interfere with the operation of the selector magnet armature thereof including an open portion on the selector magnet armature and a cooperating abutment on the start lever for permitting the start lever to move to a position over the armature without interfering with the operation of the armature and a pair of levers pivotally mounted on a portion of the orientation mechanism of the selector and operated by the selector start cam for moving the start lever off of its pivot perpendicularly of the armature to a displaced position during the receipt of the information bits of a character by the selector magnet, then for moving the start lever away from the armature along a path extending parallel to the armature, then for moving the start lever perpendicularly of the armature back onto its pivot and then for moving the armature into engagement with the armature during the receipt of the stop pulse of the character by the selector magnet.

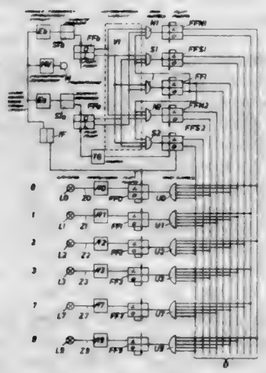
3,445,593
RECEIVER FOR INFORMATION REPRESENTED BY DIFFERENTIAL PHASE SHIFT BETWEEN DIFFERENT FREQUENCY TONES
Martin B. Gray and Thijs de Haas, Rochester, and Charles E. Perkett, Penfield, N.Y., assignors to General Dynamics Corporation, a corporation of Delaware
Filed May 2, 1966, Ser. No. 546,896
Int. Cl. H04l 27/24; H03k 9/06; H04b 1/40
U.S. Cl. 178—67 **10 Claims**



A phase modulation recovery system for frequency differential phase shift keyed information is disclosed wherein a modulated tone centrally located in frequency with respect to other tones has its phase information translated to a processing signal. This processing signal is also used as a reference in decision logic to derive the phase information directly in digital form.

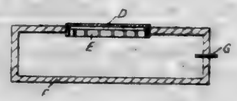
The present invention relates to communications systems, and particularly to systems for communicating digital information between a transmitting point and a receiving point.

3,445,594
CIRCUIT ARRANGEMENT FOR RECOGNIZING SPOKEN NUMBERS
Heinz Kusch, Ulm (Danube), Germany, assignor to Telefunken Patentverwertungsgesellschaft m.b.H., Ulm (Danube), Germany
Filed July 29, 1965, Ser. No. 475,708
Claims priority, application Germany, July 29, 1964, T 26,689
Int. Cl. H04m 1/26, 1/62; G01r 23/16
U.S. Cl. 179—1 **13 Claims**



A circuit arrangement for recognizing spoken words in which the speech is fed to two discriminating elements one of which detects those oscillations which exceed a predetermined threshold of a range of relatively high frequencies which occur alone or as a component of the speech wave form. The other detects waves which exceed a predetermined threshold of relatively low or fundamental oscillations occurring alone or as a component of a speech waveform. These two devices provide digital outputs and are successively interrogated. The combinations of their outputs are evaluated and set into storing elements. The storage is also provided depending upon the sequence in which the combinations occur.

3,445,595
ELECTROMECHANICAL TRANSDUCER COUPLED TO A LOW INPUT IMPEDANCE TRANSISTOR AMPLIFIER AND YIELDING A FLAT RESPONSE OVER A GIVEN FREQUENCY RANGE
William Donald Cragg and George J. P. Barnes, London, England, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 25, 1965, Ser. No. 482,424
Claims priority, application Great Britain, Sept. 11, 1964, 37,242/64
Int. Cl. H04r 19/04; H04m 1/00
U.S. Cl. 179—1 **1 Claim**



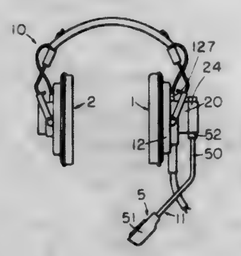
A capacitive microphone wherein an acoustic resistance in the form of a perforated metal sheet is closely spaced to the diaphragm of the microphone, said acoustic resistance being larger than the reactance of the diaphragm over the operating frequency range of the microphone, thereby providing an output voltage which decreases as the input frequency increases. The microphone is connected to a low input impedance transistor amplifier, thereby providing a constant output voltage over the operating frequency range.

3,445,596
CAPACITOR MICROPHONE EMPLOYING A FIELD EFFECT SEMICONDUCTOR
Cyril Francis Drake and Michael Lawrence Gayford, Harlow, England, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 3, 1966, Ser. No. 524,794
Claims priority, application Great Britain, Apr. 13, 1965, 15,677/65
Int. Cl. H04m 1/00; H04r 1/04, 15/00
U.S. Cl. 179—1 **6 Claims**



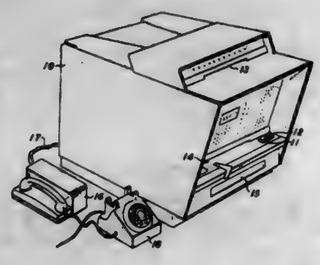
A capacitor microphone consisting of a capacitor and a field effect transistor preamplifier integrally constructed having a movable plate of the capacitor peripherally fastened to a continuous annular wall of semiconductor material of the field effect transistor and a stationary capacitor plate formed by a surface of the bulk material of the field effect transistor.

3,445,597
EARPHONE
Warren Roger Walters, Cumberland, R.I., assignor to P. M. & E. Electronics, Inc., Providence, R.I., a corporation of Rhode Island
Filed Mar. 17, 1966, Ser. No. 535,181
Int. Cl. H04m 1/00, 1/12
U.S. Cl. 179—1 6 Claims



An earphone is constructed to receive a microphone boom and allow 360 degrees rotation between the two.

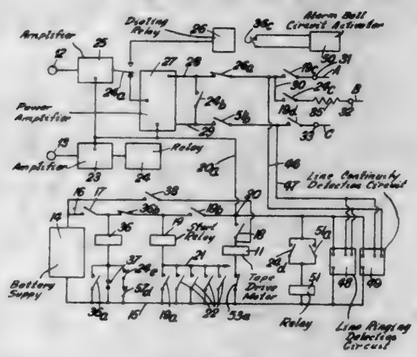
3,445,598
FACSIMILE APPARATUS OPERABLE OVER TELEPHONE LINES WITH ACCELERATED OPERATION PAST BLANK AREAS OF A DOCUMENT
Leland D. Green, Pasadena, Waldemar Seeger, La Canada, and Armand R. Tanguay, Pasadena, Calif., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed July 14, 1965, Ser. No. 471,911
Int. Cl. H04m 11/06
U.S. Cl. 179—4 6 Claims



Facsimile communication apparatus in which transmission is effected through common carrier transmission media to a like remote facsimile apparatus. There is disclosed a facsimile transceiver system including separate paper paths for scanning and recording in the transmit and receive modes respectively, including stepping drives for advancing the scanner and recorder drives past areas on the original document devoid of information.

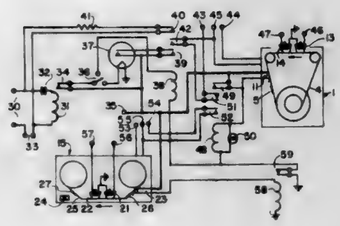
3,445,599
TELEPHONE ALARM WITH PRERECORDED CONTROL SIGNALS ON ONE MEDIA AND DIAL AND MESSAGE SIGNALS ON ANOTHER MEDIA
Leonard Peter Venner Pack, Olde Tyles, London Road, Sunningdale, Berkshire, England, and Eric Edward Elliott, 67 Winchgrove Road, Bracknell, Berkshire, England
Filed July 6, 1965, Ser. No. 469,701
Int. Cl. H04m 11/04
U.S. Cl. 179—5 11 Claims

Alarm apparatus for use with detector switches which apparatus comprises internal lines adapted to be connected into public telephone lines, disconnecting switches in the said internal lines, first and second recording media having signal patterns thereon, first and second play back means adapted to produce signals in response to the signal patterns, detecting means for detecting when a detector switch is closed and consequently closing the said disconnecting switches and actuating the said play back means, and means operable (a) in response to a first signal from the first play back means to so connect the internal lines that a dialling signal from the second play back means may be passed to the public telephone lines and



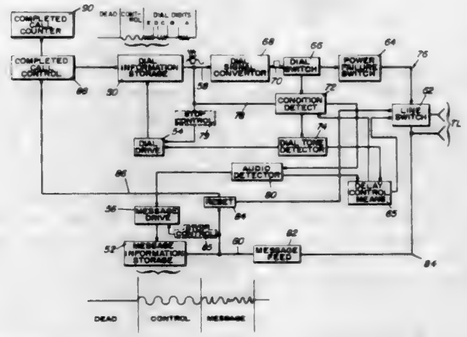
(b) in response to a second signal from the first play back means to so connect the internal lines that a message signal from the second play back means may be passed to the public telephone lines. The signal patterns on the first and second recording media are arranged so that a dialling signal is produced by the second play back means while the first signal is produced by the first play back means and a message signal is produced by the second play back means while the second signal is produced by the first play back means.

3,445,600
TELEPHONE ANSWERING DEVICE
Leonard M. Todd, 424 W. 119th St., New York, N.Y. 10027
Filed Aug. 7, 1964, Ser. No. 388,091
Int. Cl. H04m 11/10
U.S. Cl. 179—6 5 Claims



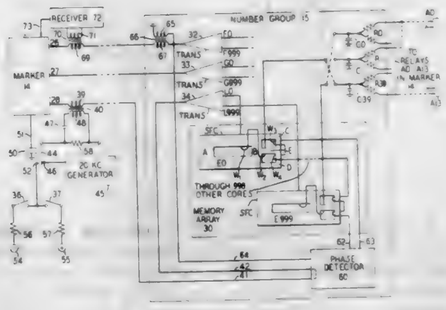
A telephone answering device wherein ringing current causes line seizure and starts an endless tape to play a prerecorded announcement. After the announcement, impulse generating means on the endless tape starts a message recorder. After predetermined message time, second impulse generating means further along the endless tape returns the device to standby. Each of a plurality of spaced apart impulse generating and time determining means on the message recorder tape passing an impulse sensitive element also returns the device to standby.

3,445,601
AUTOMATIC TELEPHONE DIALING AND MESSAGE DELIVERY SYSTEM
Richard L. Whitely, Richardson, Lawrence A. Yaggi, Dallas, and Kenneth P. Shivers, Garland, Tex., and Stewart Tongret, Santa Monica, Calif., assignors to U.S. Telephonics, Inc., Abilene, Tex., a corporation of Texas
Filed Mar. 2, 1965, Ser. No. 449,909
Int. Cl. H04m 11/00, 1/26, 1/64
U.S. Cl. 179—6 40 Claims



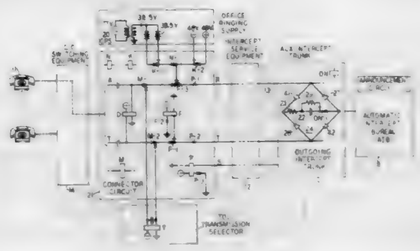
A novel and versatile telephone dialing and message delivery system is disclosed. The system comprises a first magnetic storage means carrying successive dial signal sequences thereon and a second magnetic storage means carrying recorded message signals thereon, at least one of the magnetic storage means also having control signals thereon. A control circuit is provided for both magnetic storage means and is responsive to both the control signals thereon as well as to return signals received from a telephone line. The control circuit operates to cause a dial signal sequence to be delivered to the telephone line, and to detect the operating condition at a station linked in the line in accordance with a given dial sequence. In response to the operating condition detected, the control circuit will alternatively cause message signals to be delivered to the line assuming the called station answered, or will cause the delivery of the next succeeding dial signal sequence to the line assuming that the previously called station either did not answer or was busy. If the called station answered, then subsequent to the delivery of message signals to the line, the control circuit likewise initiates the delivery of the next succeeding dial signal sequence to the line in a cyclic action. The inventive system further comprises switching means responsive to the control circuit for delivering the dial signal sequences to the line, conditioning the control circuit means to detect the operating condition of the called station, and for delivering the message signals to the line. The novel system operates in a manner such that in succeeding cycles thereof, the dial signal sequences corresponding to stations that either did not answer or were busy are dialed again, the dial signal sequences corresponding to stations that did answer being erased from the first magnetic storage means.

3,445,602
SPECIAL CALLING FEATURE CONTROL ARRANGEMENT FOR TELEPHONE SWITCHING SYSTEMS
Lawrence J. Gitten, Ocean Township, Monmouth County, N.J., and Neal D. Newby, Santa Fe, N. Mex., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Original application Dec. 29, 1960, Ser. No. 79,342, now Patent No. 3,231,870, dated Jan. 25, 1966. Divided and this application May 12, 1965, Ser. No. 455,095
Int. Cl. H04m 3/00
U.S. Cl. 179—18 14 Claims



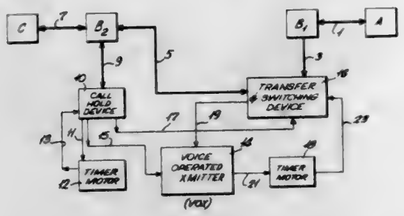
In a common control telephone switching system special calling features are permitted by a cooperative arrangement of circuitry and a memory array that comprises multiple apertured magnetic devices which correspond to the subscriber's directory number and to special calling features. The magnetic devices are accessed for writing and nondestructive readout via existing conductor paths of the directory number to equipment number translator of the switching system. The signals developed from the memory array are used by the switching system to initiate the sequence of operations to be performed to implement the special calling features.

3,445,603
ARRANGEMENT FOR TRIPPING RINGING IN INTERCEPT CIRCUIT
Peter R. Robinson, Monmouth, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed May 11, 1966, Ser. No. 549,320
Int. Cl. H04m 3/60, 3/02, 3/52
U.S. Cl. 179—18 10 Claims



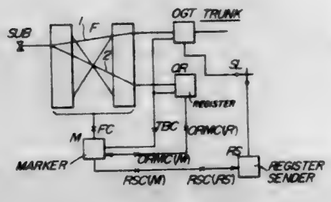
A circuit for tripping ringing before an announcement is applied to an intercept telephone line employing a full wave rectifier bridge to ensure a unidirectional flow of charging current to a capacitor in series with the tripping relay regardless of the particular polarity of the potential applied to the line.

3,445,604
DEVICE FOR AUTOMATICALLY DIVERTING TELEPHONE CALLS
Edward Rudo, 5809 Jonquil Ave. 21215, Sidney Gerstein, 716 Glenwood Ave. 21212, and Robert G. Smith, 820 Glenwood Ave. 21212, all of Baltimore, Md.
Filed July 23, 1965, Ser. No. 474,415
Int. Cl. H04m 3/54, 3/58
U.S. Cl. 179—18 15 Claims



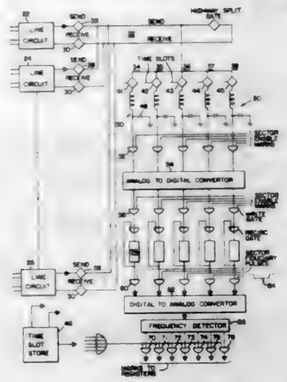
A device for automatically transferring a telephone call to one telephone located at a preselected site through another telephone also located at the same site to a freely selected remote telephone; the device includes the two telephones at the preselected site, a holding means for maintaining a telephone link between the other telephone and the freely selected telephone after a telephone link has been established between this telephone and the freely selected telephone and transfer means coupled to the two telephones for establishing a telephone link therebetween. The transfer means is actuated when a random, remotely located telephone establishes a telephone link with the one telephone. In this manner a call to one of the telephones is transferred via the other telephone to the freely selected telephone.

3,445,605
COMMON CONTROL AUTOMATIC EXCHANGE INCLUDING MEANS FOR RECEIVING, STORING AND REGENERATING A SELECTING SIGNAL
Hirotoshi Shimura, Tadahiko Akiyama, and Yasumichi Arai, Yokohama, Japan, assignors to Hitachi, Ltd., Tokyo, Japan
Filed Aug. 27, 1965, Ser. No. 483,143
Claims priority, application Japan, Aug. 28, 1964, 39/48,410
Int. Cl. H04m 3/56
U.S. Cl. 179—18 4 Claims



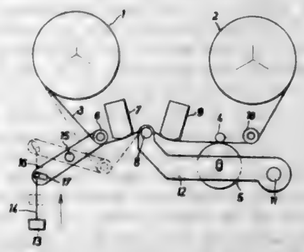
A common control automatic exchange including a register and a register sender wherein detection of a request for an outgoing trunk from subscriber signals in the register connected to the subscriber line along a first channel result in the establishment of a second channel between the subscriber and the register sender through an outgoing trunk whereby the remaining subscriber selecting signals may be received in the register sender for further outpulsing, the register including means operable in combination with a marker for transferring the signals stored therein to the register sender only during the interval between signals.

3,445,606
MULTIFREQUENCY DETECTION SYSTEM INCLUDING A FREQUENCY MULTIPLYING CIRCUIT
Barrie Brightman, Webster, N.Y., assignor to Stromberg-Carlson Corporation, Rochester, N.Y., a corporation of Delaware
Filed Mar. 21, 1966, Ser. No. 535,828
Int. Cl. H04j 3/18
U.S. Cl. 179—84 5 Claims



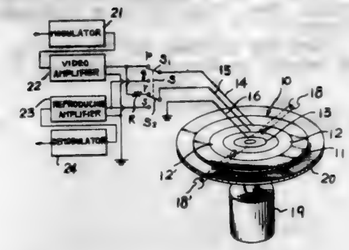
In a time division multiplex system, a multifrequency signal detection system wherein incoming signals are time compressed before they are evaluated. This process multiplies their frequencies, thereby allowing the frequency detector to be constructed of physically smaller components.

3,445,607
DEVICE FOR SUBSEQUENTLY APPLYING AN ADDITIONAL RECORDING TO A PRIMARY RECORDING
Karl-Heinz Greifenhagen, Gottfried-Neukamstrasse 6, Kronach, Upper Franconia, Germany
Filed Aug. 30, 1965, Ser. No. 483,878
Claims priority, application Germany, Sept. 3, 1964, L 37,878
Int. Cl. G11b 5/00
U.S. Cl. 179—100.2 1 Claim



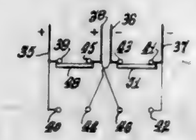
In a magnetic tape recorder a tape guide and diverting pin which is disposed in a range between a feed spool and an erase head is mounted on a swivel arm to remove the tape from said erase head.

3,445,608
COMMUTATOR SWITCHING SYSTEM FOR ROTATING HEAD RECORDERS
Hisao Kinjo, Yokohama, and Toshi Suzuki, Kamakura, Japan, assignors to Victor Company of Japan Limited, Yokohama, Japan, a corporation of Japan
Filed May 16, 1966, Ser. No. 550,398
Claims priority, application Japan, May 21, 1965, 40/29,915
Int. Cl. G11b 5/02, 5/48
U.S. Cl. 179—100.2 10 Claims



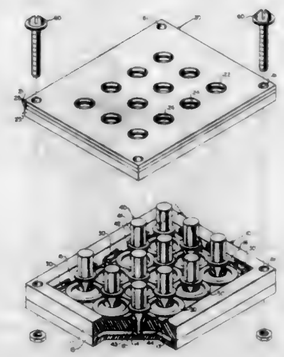
A system for magnetically recording and playing back television signals converts the continuous TV signals into intermittent tracks having overlapping signals at the opposite ends of adjacent tracks. A commutator sequentially enables and disables each of two rotating transducer heads, each head reading one intermittent track when it is enabled. The commutator establishes a time sequence wherein: one of the heads is switched between active and inactive states, then a signal in at least one of the intermittent tracks is attenuated, and thereafter the other head is switched between its active and inactive states. Before such switching one head is active, and after such switching the other head is active. During overlap, the attenuated signal from one head is rendered ineffective by a masking effect from the unattenuated signal read by the other head. This way, there are no abrupt transients, or other noise, when both heads simultaneously read out in the overlapping zone.

3,445,609
REVERSING SWITCH ASSEMBLY
Alex F. Cardenas, 1002 Harlem Ave., River Forest, Ill. 60305
Filed Oct. 11, 1965, Ser. No. 494,694
Int. Cl. H01h 35/38, 33/68
U.S. Cl. 200—1 12 Claims



A reversing switch of the type having an insulated housing and contact plates in the housing, wherein terminal posts including contact plates thereon are selectively vertically movable between sets of horizontally disposed opposed fixed contact plates, and piston and control means for causing selected movement of the terminal posts, as to cause electric current flowing therethrough to flow in a predetermined direction when the movable contacts are placed in conductive relation to one set of fixed contacts and to cause the current to flow in a reverse direction when the movable contacts are placed in conductive relation to the opposed set of fixed contacts.

3,445,610
PUSHBUTTON DIALING MECHANISM
Paul U. Lind, Oak Park, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed Sept. 20, 1967, Ser. No. 669,057
Int. Cl. H01h 9/26
U.S. Cl. 200—5 12 Claims



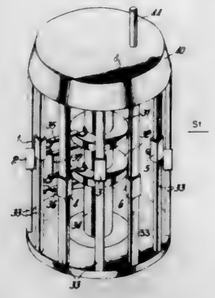
A thin pushbutton dialing mechanism in which all of the switches and switch actuating elements, except the pushbuttons, lie in the same plane regardless of the depressed or restored condition of any pushbutton. Each of the pushbuttons of an array includes a cam surface which is operatively associated with a flat cam follower of a cam follower array which is slidably carried on a supporting base, each of the arrays being offset with respect to the coordinates of the other so that each cam contacts its cam follower at an angle to the coordinates of the follower array. Each of the switches are individually mounted on the supporting base along a pair of adjacent sides of the cam follower array and urges its respective row or column of cam followers in abutment with each other and in abutment with a raised edge of said supporting base on adjacent sides of said cam follower array opposite the switches. A pushbutton, upon depression, slides the associated cam follower at 45° to its array, which in turn slides the cam followers lying between it and the pair of switches associated with same column and row thereof sufficiently to operate the pair of switches.

The cam followers may be common washers, washers having an octagonal inner edge, an octagonal outer edge or solid, flat octagonal slugs.

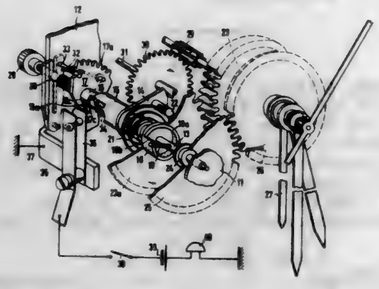
3,445,611
SELECTOR SWITCH FOR LOAD TAP-CHANGERS OF REGULATING TRANSFORMERS
Alexander Bleibtreu, Regensburg, and Ulrich G. E. Schweitzer, Wenzenbach, Germany, assignors to Maschinenfabrik Reinhausen Gebruder Scheubeck K.G., Regensburg, Germany
Filed July 12, 1967, Ser. No. 653,308
Claims priority, application Germany, July 23, 1966, M 70,336
Int. Cl. H01h 19/58, 21/78
U.S. Cl. 200—11 10 Claims

Disclosed below is a selector switch for load tap-changers of regulating transformers of the type including a plurality of fixed contacts arranged in two coaxial circular patterns each situated in one of two different planes. One of the two aforementioned circular patterns of fixed contacts is intended to be conductively connected to the

even numbered taps of a transformer winding and the other of the two aforementioned patterns of fixed contacts is intended to be conductively connected to the odd numbers taps of a transformer winding. In such an arrangement the circular pitch is the distance from the center of one contact to the center of the next consecutive contact measured on the circle along which the contacts are arranged, or which may be drawn through the centers thereof. The structure disclosed includes means for operating a pair of contact arms or contact bridges engaging the fixed contacts in steps equal to half the circular pitch of the contacts and additional slide contacts which establish a conductive connection between the aforementioned pair of contact arms or contact bridges when the same are in registry positions. As a result of these features all contacts pertaining to one phase of a transfer switch and operatively related to the selector switch are maintained at the same potential, except during tap-changing operations of the transfer switch.

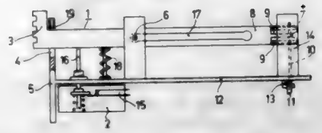


3,445,612
TIME SWITCH FOR AN ELECTRIC SIGNAL DEVICE FOR ALARM CLOCKS
Robert Wolber, Lauterbach, Wurttemberg, and Otto Hettich, Schramberg, Wurttemberg, Germany, assignors to Messrs Gebruder Junghans Gesellschaft mit beschrankter Haftung, Schramberg, Wurttemberg, Germany, a corporation of Germany
Filed July 6, 1966, Ser. No. 563,227
Claims priority, application Germany, July 16, 1965, J 28,585
Int. Cl. H01h *7/08, 43/10*
U.S. Cl. 200—38 **6 Claims**



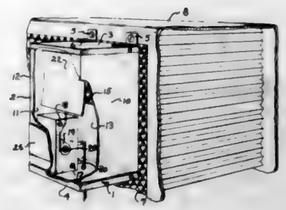
Time-contacting switch mechanism for an electric signal device of an alarm clock having an adjusting shaft rotatably mounted in the plates of the clock together with a control casing on the shaft and a toothed segment mounted on the control casing longitudinally shiftable and rotatable with the casing. A collar and a spring are mounted on the shaft to urge the segment and the collar in a longitudinal direction on the shaft.

3,445,613
SWITCHING ARRANGEMENT IN DICTATING MACHINES
Friedrich Louzil, Vienna, Arne Appel, St. Michael, Lungau, and Gerhard Habelt, Vienna, Austria, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed July 18, 1966, Ser. No. 565,786
Claims priority, application Austria, July 19, 1965, A 6,620/65
Int. Cl. H01h *35/02, 21/54*
U.S. Cl. 200—52 **7 Claims**



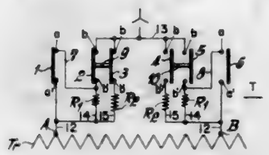
The invention concerns dictation apparatus including a switch mechanism adapted for temporarily disconnecting the dictator circuits, such as desirable at times between dictation intervals, and for more permamently interrupting the circuits at the culmination of the dictation period. For this purpose a switch lever, serving as the microphone cradle, is movable between two locations and to two positions at each location. At one location the lever is spring biased to one position so that the mere weight of the microphone when placed in the cradle will move the lever to the second position at which the circuits are interrupted. At the second position more positive locking means are provided so that the lever is secured in a desired one of the two positions.

3,445,614
AIR FLOW RESPONSIVE SWITCH FOR AIR CONDITIONED AUTOMOBILES
William E. Switzer, Muskegee, Okla., assignor of one-fourth each to Robert G. Owen, William J. McKinney, and Joe R. Boatman
Filed Jan. 11, 1967, Ser. No. 608,530
Int. Cl. H01h *35/24, 35/40*
U.S. Cl. 200—81.9 **3 Claims**



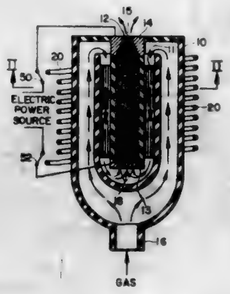
This disclosure relates to refrigeration air conditioning apparatus for automobiles, and more particularly to a radiator air flow actuated switch for operating the clutch of an air conditioning compressor. The switch includes a biased vane located in the path of radiator air flow and operating the swtich when a predetermined engine speed is reached. An adjustable baffle varies the required air velocity for switch actuation.

3,445,615
SYSTEM FOR INCREASING THE SWITCHING CAPACITY OF TRANSFER SWITCHES FOR TAP-CHANGING TRANSFORMERS
Alexander Bleibtreu, Regensburg, Germany, assignor to Maschinenfabrik Reinhausen Gebruder Scheubeck K.G., Regensburg, Germany
Filed Apr. 21, 1966, Ser. No. 544,142
Int. Cl. H01h *9/38, 19/58, 33/12*
U.S. Cl. 200—146 **3 Claims**



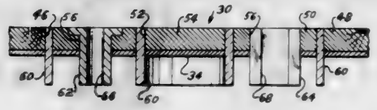
In a Jansen-type transfer switch system including switch-over resistors, pairs of auxiliary movable contacts are mechanically coupled by tie means, and different ohmic values are imparted to the switch-over resistors whereby the recovery voltage appearing across the main contacts following a switching operation involving a load current is drastically limited, and whereby in case of a switching operation involving an overload current the gaps formed between the main contacts are shunted by resistors having a small ohmic value.

3,445,616
ELECTRIC FLAME GENERATOR
Edwin M. Guyer, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Dec. 6, 1966, Ser. No. 599,538
Int. Cl. H05b *5/18, 5/08*
U.S. Cl. 219—10.51 **8 Claims**



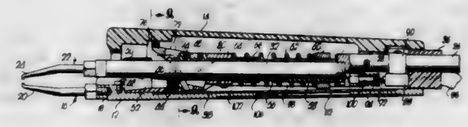
An electric flame generator in which a gas is passed through a porous material. The material is heated by electrical conduction or induction to a temperature sufficient to render the gas electrically conductive as it passes through the material. After the gas has been elevated to such temperature an electric current is passed through the gas further to elevate its temperature to render it useful for such purposes as melting glasses and ceramics.

3,445,617
ELECTRO-EROSIVE METHOD AND APPARATUS FOR MAKING A DIE MEMBER COMPLEMENTAL TO A DIE MEMBER OF THE RULE TYPE
Lawrence M. Rheingold, Baldwin, and Milton Berlin, Forest Hills, N.Y., assignors to Templet Industries Incorporated, Plainview, N.Y., a corporation of New York
Filed Oct. 23, 1965, Ser. No. 503,911
Int. Cl. B23k *9/16*
U.S. Cl. 219—69 **2 Claims**



A method and apparatus for making a male member complemental to a female rule die member. The apparatus includes a plenum chamber with a perforate bottom having clamped to it a die block with a rule die projecting from its lower face. The upper face of the die block is held against the perforate bottom wall of the plenum chamber. A fluid dielectric medium is introduced into the plenum chamber and forced out through the bottom wall thereof and through holes in the die block. The chamber and die block are moved toward the workpiece to be electro-eroded.

3,445,618
SPOT WELDER
Lloyd N. Blurton, 309 Belmont, Liberty, Mo. 64068
Filed May 3, 1965, Ser. No. 452,828
Int. Cl. B23k *11/10*
U.S. Cl. 219—90 **5 Claims**

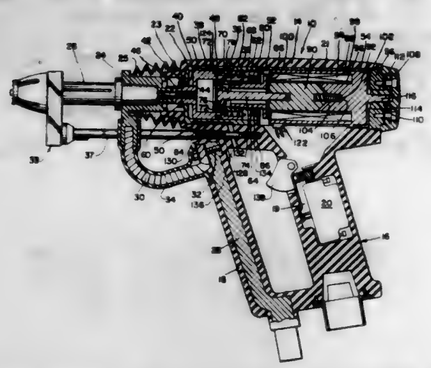


A spot welder to be utilized in the assembly of miniature and subminiatiure electrical components comprising a pair of electrodes, one being movable with respect to the other, switching means for controlling the flow of welding current to the electrodes, an actuator for said swinging means and operating means coupled with one of said electrodes and the actuator, said operating means disposed to be shifted in such a manner as to move said one electrode toward the other electrode whereby to clamp a workpiece between the electrodes and subsequently initiate operation of the switching means to deliver current to the electrodes.

3,445,619
STUD WELDING
Frank K. Kelemen, Moorestown, N.J., assignor, by mesne assignments, to Omark Industries, Inc., Portland, Oreg., a corporation of Oregon
Filed July 13, 1964, Ser. No. 381,991
Int. Cl. B23k *9/20, 9/32, 11/04*
U.S. Cl. 219—98 **10 Claims**

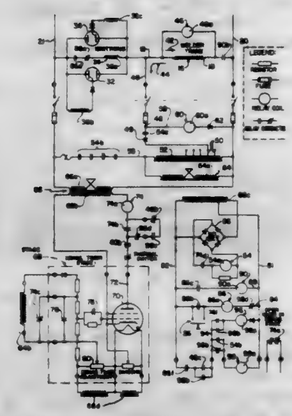
An electric stud welding gun is provided with a handle guard and a reciprocable chuck, such that the hand guard

contains a first insulated welding current conductor and a second insulating welding current conductor is flexibly



provided between the first conductor in the hand guard and the reciprocable chuck.

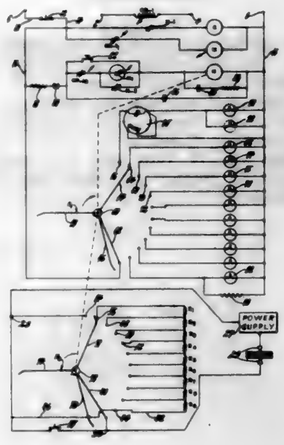
3,445,620
APPARATUS FOR AND METHOD OF DEMAGNETIZING
Arthur K. Littwin, Lincolnwood, and Robert L. Littwin, Park Ridge, Ill., assignors to Arthur K. Littwin, Robert L. Littwin, Donald F. Littwin and Horace A. Young, Chicago, Ill., as trustees under trust known as Littwin Family Trust No. 1
Filed May 18, 1965, Ser. No. 456,740
Int. Cl. B23k *9/10, 11/04, 11/24*
U.S. Cl. 219—108 **31 Claims**



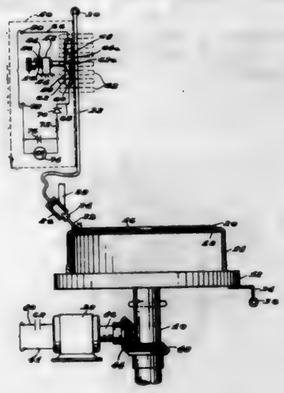
Demagnetizing in connection with AC welding, the same AC passing through the welding electrodes and the workpiece which was magnetized in the welding operation, and in the half-cycle opposite that in which the welding step was terminated.

3,445,621
STEP RELAY PANEL FOR AUTOMATICALLY INCREASING THE CURRENT FLOW TO A WELDING GUN
Raymond A. Schomer, Royal Oak, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 5, 1964, Ser. No. 349,614
Int. Cl. B23k *11/10, 11/24, 11/30*
U.S. Cl. 219—111 **6 Claims**

In a spot welding machine control circuit a multi-tap resistor in conjunction with a stepping relay varies the circuit resistance. An impulse counter senses welding pulses and energizes the stepping relay after a set number of pulses to progressively increase the welding current after each series of welds.

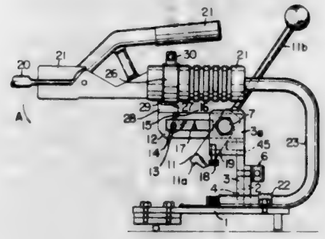


3,445,622
WELDING CONTROL
Harold C. Hubbard, Lansing, Mich., assignor to Motor Wheel Corporation, Lansing, Mich., a corporation of Ohio
Filed May 23, 1966, Ser. No. 552,112
Int. Cl. B23k *9/12*
U.S. Cl. 219—124 **7 Claims**



A control system for controlling movement of a workpiece relative to a welding electrode along the seam to be arc welded in which a magnetic contact switch, of the type having a pair of flexible magnetizable reeds disposed with their adjacent ends in overlapping relation to define a contact gap therebetween, is positioned to be actuated by the magnetic field generated by a flow of a predetermined welding current in a conductor of the welding circuit. The magnetic switch is connected in a control circuit operable to halt movement of the workpiece past the electrode in response to actuation of the switch. Either AC or DC welding current may be sensed without changing the components of the control circuit.

3,445,623
SEMI-AUTOMATIC WELDING MACHINE
Kuniaki Fukushima, Ichikawa, Japan, assignor to Yawata Welding Electrode Co., Ltd., Tokyo, Japan
Filed Mar. 28, 1967, Ser. No. 626,614
Claims priority, application Japan, Mar. 30, 1966, 41/19,281
Int. Cl. B23k *9/28*
U.S. Cl. 219—130 **10 Claims**

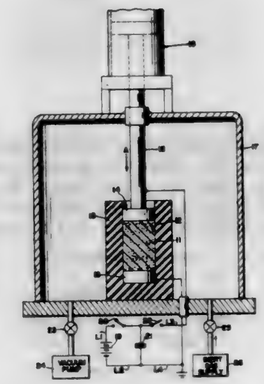


A welding machine in which the holder for the welding rod is connected with an arm mounted for pivoting movement in the direction of the workpiece during welding thereby to maintain the progressively shortening welding rod in contact with the seam being welded. A latching lever is mounted for pivoting movement adjacent the holder arm and is adapted to be selectively coupled with the latter to move as a unit therewith, the latching lever being engaged with a spring which tends to pivot it in the direction of the workpiece. The holder arm also is engaged by a spring which acts to pivot the arm away from the workpiece but which is ineffective to produce that purpose while the holder arm is coupled with the latching lever since the spring of the latter has a greater biasing force than the spring engaged with the holder arm. Coupling engagement of the latching lever and holder arm is maintained by a pawl carried on the holder arm engaging a notch on the latching lever with release of the engagement being effected by an auxiliary lever controlling the positioning of the pawl coming into engagement with an adjustment screw when the welding rod reaches a predetermined length.

3,445,624
COBALT ALLOY AND WELDING ELECTRODE BASED UPON THIS ALLOY
Jean Albert Francois Sunnen, Uccle, Belgium, assignor to La Soudure Electrique Autogene, Procedes Arcos, Brussels, Belgium, a corporation of Belgium
No Drawing. Filed Mar. 28, 1966, Ser. No. 537,716
Claims priority, application Belgium, Apr. 12, 1965, 662,408
Int. Cl. B23k *35/32*
U.S. Cl. 219—146 **7 Claims**

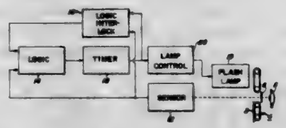
A cold-shapable cobalt alloy, and composite welding electrode containing the same and a submerged arc welding process using the same. The cobalt alloy contains at least 93% by weight of cobalt, 0.5 to 6% by weight of iron, at least one of the metals of the group consisting of manganese, titanium and aluminum and also incidental impurities the amount of which is insufficient to have an effect upon the properties of the alloy, any manganese, titanium and aluminum content being in the ranges from traces to 4.5% by weight for manganese, 0.1 to 2% by weight for titanium and 0.1 to 2% by weight for aluminum, and the sum of the iron content of said alloy, of $^{30}/_{100}$ of its manganese content, of $^{45}/_{100}$ of its titanium content, and of $^{20}/_{100}$ of its aluminum content being below $^{9}/_{100}$ of its total weight. In addition, the electrode may include other ingredients in specified ranges such as chromium, tungsten and carbon.

3,445,625
METHOD FOR MAKING POROUS LOW DENSITY METAL MEMBER FROM POWDERED METAL
James S. Hetherington, Menlo Park, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Sept. 3, 1964, Ser. No. 394,114
Int. Cl. H05b *7/00;* **B21j** *1/00;* **B22f** *9/00*
U.S. Cl. 219—149 **2 Claims**



A method and apparatus for making the porous tantalum body member of a tantalum capacitor. Tantalum powder is moderately compressed at a pressure of approximately 18,000 p.s.i. in a mold to create a low density mass. A high voltage capacitor bank is then discharged through the tantalum powder to lightly weld the particles together without producing a substantial further density increase. The porous body member is then sintered in a vacuum furnace to improve mechanical strength.

3,445,626
FUSING APPARATUS WITH FLASHLAMP CIRCUIT
Thomas B. Michaels, Rochester, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed May 2, 1966, Ser. No. 547,048
Int. Cl. H05b *1/02;* **F27d** *19/00*
U.S. Cl. 219—216 **9 Claims**



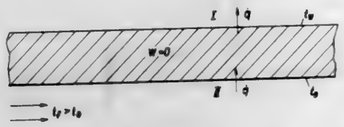
A control circuit for a flash fuser including logic circuit for sensing the passage of a recording medium to initiate a timing sequence to permit movement of the recording medium to a position under the influence of the

fuser whereby the fuser is energized. Logic interlock circuit is provided to permit successive triggering of the fuser if a portion of the recording medium has not been subject to the influence of the fuser at some prior time.

3,445,627
METHOD OF CONVEYING VERY LARGE HEAT CONVECTION TO BOILING LIQUIDS

Karl Stephan, Krefeld, Germany, assignor to Mannesmann Aktiengesellschaft, a corporation of Germany

Filed July 1, 1966, Ser. No. 562,399
Claims priority, application Germany, July 2, 1965, M 65,775
Int. Cl. F22b *1/28*
U.S. Cl. 219—271 10 Claims



A method of conveying very large heat convection to boiling liquids free from film evaporation, provides for conveying a secondary liquid along the heating wall, thereby stabilizing the boiling operation and restraining the sudden change of bubbles into film evaporation.

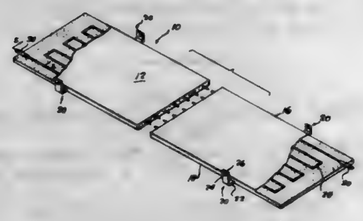
ERRATUM

For Class 219—275 see:
Patent No. 3,445,859

3,445,628
ELECTRIC RADIANT HEATING PANEL

Thomas A. Bateman, Sr., 108 Kanawha Ave. S., Nitro, W. Va. 25143

Filed Sept. 16, 1966, Ser. No. 580,012
Int. Cl. H05b *3/02*
U.S. Cl. 219—345 2 Claims

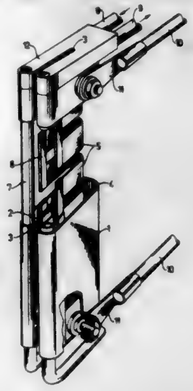


A flat rectangular radiant heating panel has a centrally positioned insulated heating element embedded therein. The element is disposed in a serpentine pattern and terminates at each end in a separable connector element partially embedded in a side edge of the panel. The panel is adapted to be installed flat against an unexposed, internal surface of an existing building wall and is dimensioned to fit between adjacent studs or joists in the wall. Brackets partially embedded in and along the edges of the panel provide means for securing the panel in place between the studs or joists. A plurality of panels can be electrically connected together in series by means of jumpers.

3,445,629
WEB EDGE HEATING ELEMENT

Sven Olof Soren Stark and Peter K. Giacomelli, Lund, Sweden, assignors to AB Tetra Pak, Lund, Sweden, a Swedish company

Filed Aug. 4, 1966, Ser. No. 570,213
Claims priority, application Sweden, Aug. 18, 1965, 10,778/65
Int. Cl. F27b *9/06*
U.S. Cl. 219—388 3 Claims

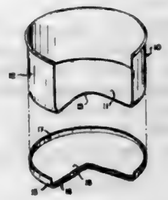


A web edge heating element for heating the edge of a continuously moving web which passes through a gap in the heater.

3,445,630
COMPOSITE COOKING VESSELS

John B. Ulam, Peters Township, Pa., assignor to Composite Metal Products, Inc., a corporation of Pennsylvania

Filed May 15, 1967, Ser. No. 638,493
Int. Cl. F27d *11/02*
U.S. Cl. 219—438 10 Claims



A cooking vessel and method of making such vessel in which a stainless steel or clad metal vessel body is coated on the bottom with metallic aluminum and a saucer-shaped cap of stainless steel with an aluminum cladding member brazed to the bottom with the braze uniting the two aluminum layers and thereafter the stainless steel of the cap is welded to the body of the vessel.

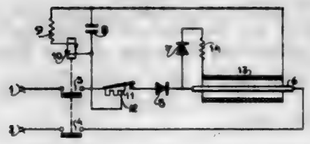
3,445,631
SAFETY SYSTEM FOR AN ELECTRICALLY HEATED BLANKET

August E. F. Fickweiler, Waddinxveen, Netherlands, assignor to Indoheem, N.V., a corporation of the Netherlands

Filed Mar. 14, 1966, Ser. No. 533,968
Int. Cl. H05b *1/02*
U.S. Cl. 219—494 3 Claims

A heater cable is connected to a source of electrical supply through a first diode which connection includes the

contacts of a safety relay. The safety relay is connected across the first diode through a second diode, dissimilar connections of the two diodes being connected to one another so that the second diode is effectively supplied with voltage from the supply source when the first diode is non-conducting and in this way sufficient voltage is supplied to the safety relay to maintain the coil thereof energized. If there is an interruption of the heater cable, voltage across the first diode disappears completely and

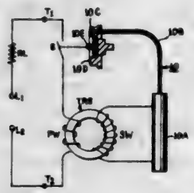


further an interruption of conduction of the first diode of course will open the safety switch. Refinements on the system are made by including a safety sheath around the heating cable and including the safety sheath in the second diode and safety relay coil series circuit so that any short circuit between the safety sheath and the heater cable will likewise cause the safety relay to open as the second diode is short-circuited.

3,445,632
THERMOSTAT

Dwight Charles Lewis, Elkhart, Ind., assignor to Penn Controls, Inc., Oak Brook, Ill., a corporation of Delaware

Filed July 21, 1967, Ser. No. 655,050
Int. Cl. H05b *1/02*
U.S. Cl. 219—511 6 Claims



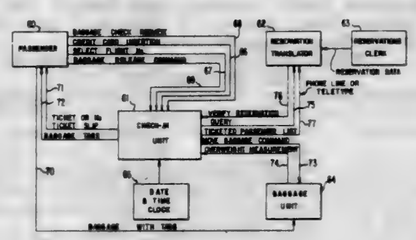
Power is supplied to the anticipating heater of a thermostat by a saturating current transformer, thereby keeping the anticipating heat supplied substantially constant throughout a wide variation of the load controlled by the thermostat and minimizing the effect of fluctuations in the line voltage. The electrical resistance of a portion of the thermostat's temperature responsive element itself serves as the anticipating heater to which power is supplied through the transformer.

3,445,633
AUTOMATIC TICKETING SYSTEM

Victor A. Ratner, Gaithersburg, Md., assignor to Defense Electronics, Inc., Rockville, Md., a corporation of Delaware

Filed Mar. 5, 1965, Ser. No. 437,410
Int. Cl. G07f *7/02*
U.S. Cl. 235—61.7 13 Claims

1. A flight ticket dispensing system, comprising
computer storage means for registering identifying signals corresponding to characters identifying the maker of a reservation for a flight,
means under control of an operator for registering said identifying signals in association with memory storage means individual to said flight,
means in a check-in station receiving a credit card bearing characters identifying the holder of said card,
means in said station operable by a card holder for selecting an input channel therein corresponding to said memory storage means for said flight,
means reading said card and comparing signals therefrom corresponding to said characters with a sequence of similar signals stored in said storage means,

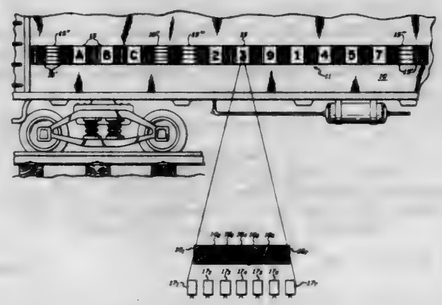


output means operable upon said comparison of signals to actuate a first circuit when said characters read and stored are alike and to actuate a second circuit when said characters are not alike,
means under control of said first circuit actuatable to cause printing of a ticket bearing identification of said flight and at least a part of said characters, and
means under control of said second circuit to cause printing of a "No-Ticket" slip upon actuation of last said means when said stored and read characters are not alike.

3,445,634
CORRELATION IDENTIFICATION APPARATUS

Albert Lanes, Flushing, Robert E. Rachlis, Freeport, Irving Roth, East Williston, and Edward W. Stark, Garden City, N.Y., assignors to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware

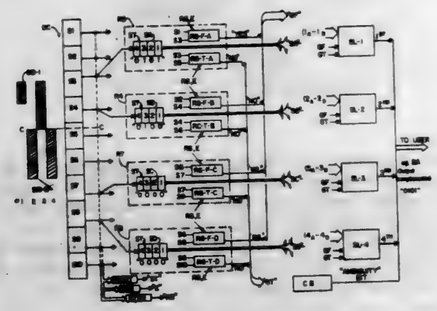
Filed Mar. 16, 1965, Ser. No. 440,251
Int. Cl. G06k *7/00, 9/00*
U.S. Cl. 235—61.11 18 Claims



An optical correlation system for identifying moving objects having identification patterns characterized by alternate stripes of contrasting transmissivities with the stripes of each pattern disposed at a different angle and mounted on the object to be identified. A plurality of reference masks each having a correspondingly disposed pattern with respect to its associated identification pattern is in spaced location with respect to the identification pat-

tern. A plurality of detectors are cooperative with respective reference masks and respective identification patterns and responsive to the relative movement of the identification patterns with respect to their associated reference masks for providing respective outputs representative of the respective functions of the optical correlation therebetween.

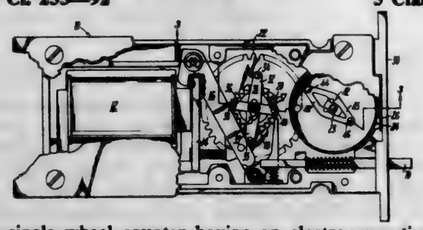
3,445,635
DECODING ARRANGEMENT
Terrance Trickett, Bedford, Donald J. Zepp, Wellesley, Benjamin Horne, Needham, and Thomas Brill, Cochituate, Mass., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Apr. 14, 1966, Ser. No. 542,534
Int. Cl. G06k *7/01*
U.S. Cl. 235—61.11 **16 Claims**



14. A code reading system for scanning a prescribed segment across any portion of which images of bar-encoded document portions may be advanced sequentially, said images comprising code marks above or below a prescribed centerline, said system comprising:

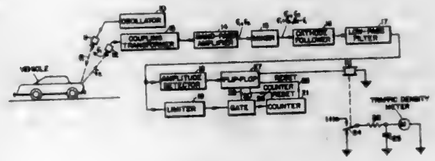
a plurality of like detecting transducer means for scanning said marks successively and producing a member of bit-indicating signals; storage means coupled to the output of said transducer means for temporarily storing a prescribed number of said signals therefrom; position-monitoring means arranged at the output of prescribed ones of said transducer means and adapted to selectively modify the output from said storage means in a complemented or uncomplemented state according to the detected position of said marks relative said centerline; and timing means coupled to the output of said transducer means and arranged to reset said storage means and to read out said storage means in response to detection of prescribed patterns of said code marks.

3,445,636
SINGLE WHEEL COUNTER CIRCUIT
Joseph A. Richards, Manchester, Conn., assignor to Veeder Industries Inc., a corporation of Connecticut
Filed Jan. 17, 1966, Ser. No. 535,262
Int. Cl. G06f *7/385*
U.S. Cl. 235—92 **5 Claims**



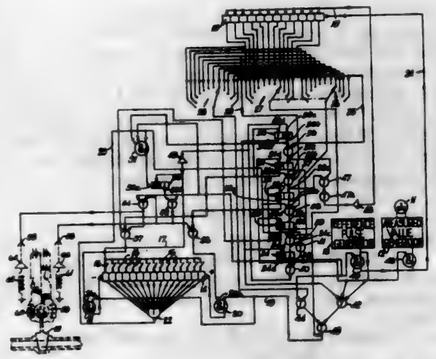
A single wheel counter having an electromagnetically driven wheel wherein the wheel drive mechanism also rotates a 4-armed contact that cooperates with conductive portions of a printed circuit board to provide a plurality of electrical output signals including an electrical signal to signify wheel position, an electrical signal upon change of position of the contact means and electrical signals for counter reset and transfer. By modification of the circuit board the same counter mechanism is used to provide binary coded decimal readout.

3,445,637
APPARATUS FOR MEASURING TRAFFIC DENSITY
John H. Auer, Jr., Rochester, N.Y., assignor to General Signal Corporation, Rochester, N.Y., a corporation of New York
Filed June 1, 1965, Ser. No. 460,210
Int. Cl. G06m *11/00*
U.S. Cl. 235—150.2 **10 Claims**



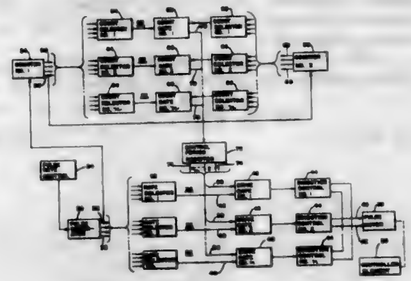
Apparatus for measuring traffic density in which sonic detector means produce a discrete signal inversely proportional to only vehicle speed for each passing vehicle and a meter responsive to the discrete signals produces a measurement representative of traffic density.

3,445,638
PROCESS CONTROL APPARATUS IN WHICH A MEASURED VALUE IS CONTROLLED IN COMPARISON WITH A DESIRED VALUE
George A. Montgomerie, Leamington, England, assignor to Serck R. & D. Limited, Birmingham, England
Filed Mar. 12, 1965, Ser. No. 439,316
Claims priority, application Great Britain, Mar. 16, 1964, 10,973/64
Int. Cl. G06f *5/06*



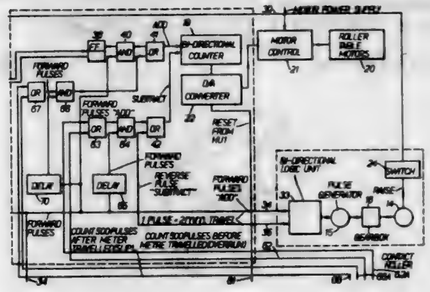
1. Process control apparatus having a control element for a process having a variable parameter responsive to control of the process comprising a first counting device, means for producing in said counting device a count state corresponding to the desired value of the parameter, first means, including an element sensitive to the value of the parameter, for producing a pulsating signal the mean frequency of which is dependent on the value of the parameter, means arranged to vary the count state of the counting device by a number dependent on said frequency, and means sensitive to the final count state of the counting device to adjust the control element.

3,445,639
ELECTRICAL CONTROL SYSTEM FOR REPETITIVE OPERATION
Alexander E. Martens, Greece, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Dec. 29, 1965, Ser. No. 526,961
Int. Cl. G06f *15/46;* **G06g** *7/48*
U.S. Cl. 235—151.1 **14 Claims**



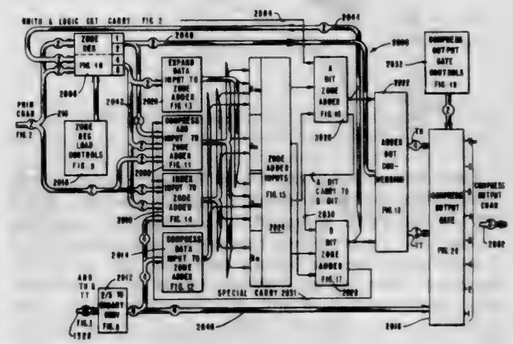
A control system is disclosed including a generator providing a plurality of signals of different frequencies. A variable circuit couples the generating means to a plurality of switching circuits so that selected ones of the periodic signals to be translated are applied thereto. A counting circuit is connected to count at least one of the signals to provide successive switching signals to the switching circuit having a variable preset time durations and renders the switching circuits operative in a predetermined order to pass successive trains of the periodic signals.

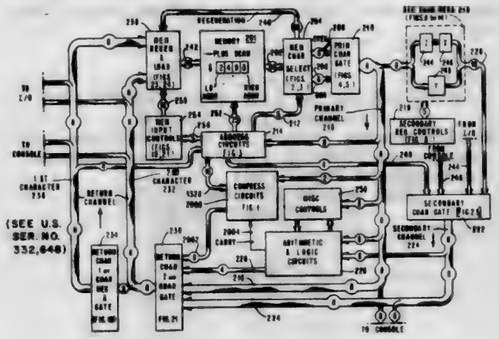
3,445,640
APPARATUS FOR MONITORING THE POSITION OF AN OBJECT DISPLACEABLE ALONG A PREDETERMINED PATH
James Arthur Harrison and Brian Quartermain, Chesterfield, England, assignors to Davy and United Engineering Company Limited, Sheffield, England
Filed Jan. 29, 1965, Ser. No. 429,070
Int. Cl. G08c *21/00*
U.S. Cl. 235—151.32 **4 Claims**



Apparatus for automatically controlling the movement of an object, such as an elongated beam, along a predetermined path. At least a pair of detectors are spaced along the path, each attached to detect the passage of the object. A pulse generator emits a pulse for each unit movement of the object, the unit being a small submultiple of the spacing of the detectors, and a counter counts the pulses. A circuit checks the number of pulses emitted by the generator between the passage of the object past successive detectors, and corrects the count of the counter on the occurrence of disparity between the number of pulses emitted and the distance between successive detectors.

3,445,641
SERIAL DIGITAL ADDER EMPLOYING A COMPRESSED DATA FORMAT
Russell G. Rinaldi, Poughkeepsie, and Brian B. Moore, New Paltz, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Original application June 30, 1964, Ser. No. 379,332, now Patent No. 3,310,786, dated Mar. 21, 1967. Divided and this application Jan. 19, 1967, Ser. No. 641,066
Int. Cl. G06f *7/50, 5/04*
U.S. Cl. 235—176 **5 Claims**





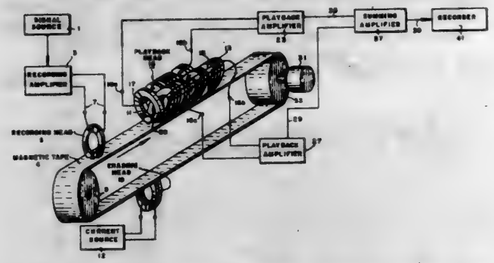
Disclosed is an adder apparatus within the environment of a data processing system wherein addresses are specified by operands consisting of units, tens, and hundredths characters, where each character includes numeric bits and zone bits, and where the zone bits from the units character and the zone bits from the hundredths character are used to generate additional address characters. The system is organized with the high order zone bits associated with the low order units character and the low order zone bits associated with the higher order hundredths character. The adder apparatus includes a

binary zone adder for adding the high order zone bits from two operands during a first cycle, adding the low order zone bits from two operands during a subsequent cycle including any carry from the higher order numeric addition, and adding any necessary carry from the low order zone bits to the high order zone bits during an additional cycle. The adder apparatus additionally includes circuitry for converting the results of the zone additions directly into a two decimal order result.

3,445,642
APPARATUS FOR DETERMINING THE TIME PHASE RELATIONSHIP OF ELECTRICAL SIGNALS

Troy N. Crook, Houston, Tex., assignor to Esso Production Research Company, a corporation of Delaware

Filed Sept. 24, 1965, Ser. No. 489,878
Int. Cl. G06g 7/19, 7/18; G06f 15/34
U.S. Cl. 235—181 3 Claims

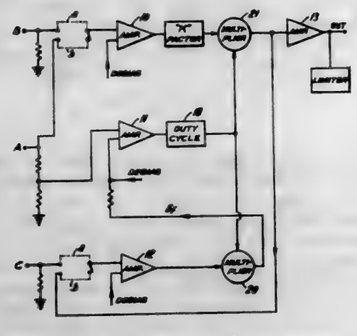


The invention is a device for determining the time phase relationship of components of a complex electrical signal wherein the signal is recorded on a magnetic recording medium and a reproducing head comprising a plurality of sets of laminations are linearly positioned one relative to the other according to a predetermined spatial relationship, the laminations of one set representing binary digits of one character and the laminations of the second set representing binary digits of the opposite character. Spatially arranged electrical windings are connected to the two sets for producing electrical signals which are integrated and summed, the summed signal being recorded.

3,445,643
ELECTRONIC MULTIPLIER/DIVIDER FOR FLUID FLOW SYSTEMS

Roy L. Schmoock, Ivyland, and Isao Asai, Hatboro, Pa., assignors to Fischer & Porter Co., Warminster, Pa., a corporation of Pennsylvania

Filed Sept. 22, 1966, Ser. No. 581,325
Int. Cl. G06g 7/16, 7/57
U.S. Cl. 235—194 8 Claims

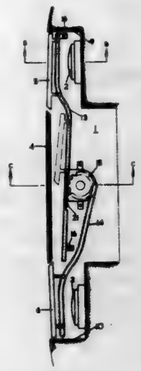


1. A multiplier/divider comprising:
a first and second multiplier circuit;
means for coupling a first analog input to said first multiplier circuit;
means for coupling a second analog input to said second multiplier circuit;
a high gain amplifier;
means for coupling a third analog input to said amplifier;
means for applying the output of said second multiplier to said amplifier as a negative feedback signal;
means coupled to said amplifier output for deriving a duty cycle signal which shares ON-OFF time dependent upon said amplifier output;
a means for applying said duty cycle signal to each of said multiplier circuits.

3,445,644
PROTECTIVE APPARATUS FOR MOTOR VEHICLE HEADLAMPS

Giovanni Michelotti, Turin, Italy, assignor to The Standard-Triumph Motor Company Limited, Canley, England

Filed Feb. 13, 1967, Ser. No. 615,682
Claims priority, application Italy, Mar. 11, 1966, 5,778/66
Int. Cl. B60q 1/04
U.S. Cl. 240—7.1 7 Claims

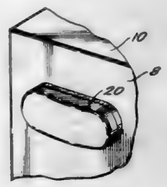


Headlamps of a motor road vehicle are arranged behind a grille comprising a fixed central section and side sections which are slidable from a position in which they cover, and protect the headlamps from flying stones, to a position in which they uncover the headlamps for use.

3,445,645
ARMORED SIDE MARKER LAMP

Charles J. Newman, Madison, Ind., assignor to The Grote Manufacturing Company, Inc., Madison, Ind., a corporation of Kentucky

Filed Aug. 4, 1966, Ser. No. 570,263
Int. Cl. B60q 1/32
U.S. Cl. 240—8.2 3 Claims



A very flat base supports one or more lamp sockets and lamps with a minimum projection from the side of a truck on which the base is mounted. A shield, usually colored, has a snap connection with a rib on the base. In the event the shield is dislodged from the base by wiping contact with a tree branch or the like, the lamp fixtures and their connections are protected by an internal armor which projects from the base at both sides of the lamps and tends to prevent the lamps and their electrical connections from damage and shorting. The armor is without appreciable effect on the photometric output, and does not detract from the appearance of the unit.

The integral armor comprises a pair of flanges integral with the base. These extend along opposite sides of the base and project therefrom materially beyond the margin of the rib with which the colored shield is engageable. The flanges are not of uniform thickness but are desirably reinforced in the interior of the fixture by posts which are integral with the base and the flanges provide substantial support against destruction by the wiping action referred to. The outer margins of the armor flanges are curved about the lamps and are also convex in their projection from the base to tend to cam obstacles aside. Because of the form and limited extent of the flanges and the provision of the posts in the particular positions shown, the desired protection is achieved with practically no interference with the illumination.

3,445,646
PROJECTOR LAMP ASSEMBLY

David N. Brooks, West Peabody, and Joseph M. Harris, Topsfield, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Filed July 5, 1966, Ser. No. 562,737
Int. Cl. F21v 19/02
U.S. Cl. 240—44.2 9 Claims

A reflector and projector lamp assembly includes a pair of spring fingers fixed directly on the stem of a projector lamp envelope. The fingers slide between a pair of opposed walls in the reflector mounting base allowing axial and universal movement of the lamp in adjusting the filament of the lamp relative to the reflector focal point prior to spot welding the spring fingers to the walls.

3,445,647
LAMPSHADE

Joseph F. Peter, 411 Stanhope St., Brooklyn, N.Y. 12239

Filed Mar. 11, 1968, Ser. No. 712,180
Int. Cl. F21v 1/06
U.S. Cl. 240—108 2 Claims

A lampshade is made up of a plurality of identical frames, each frame forming a side of the shade. Each frame has a screen holder for holding a light transmitting panel. The screenholders are adjustably mounted on the frames so that light transmitting panels of different thicknesses may be used. The screen holders fit together edge to edge with projections on one edge projecting into recesses on the opposite edge of the adjacent screen holder.

3,445,648
APPARATUS FOR CHECKING OPERATION OF POWER-PRODUCING COMPONENTS

Lawrence C. Simmons, Cleveland, Ohio, assignor to Cleveland Technical Center, Inc., Cleveland, Ohio, a corporation of Delaware

Filed Dec. 7, 1966, Ser. No. 599,952
Int. Cl. B61k 13/00; B61c 17/00
U.S. Cl. 246—169 5 Claims

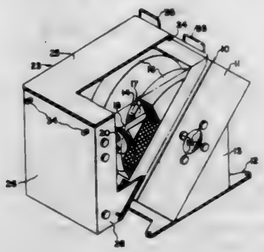


This disclosure relates to apparatus and method for checking the operation of power-producing components such as the diesel engines or electric traction motors of diesel-electric locomotives, comprising heat-sensing means adapted to sense heat emitted by a power-producing component and means providing an indication of temperature of such component.

3,445,649
ION CYCLOTRON RESONANCE SPECTROMETER HAVING THE ANALYZER MEANS PIVOTALLY MOUNTED ON THE MAGNET YOKE

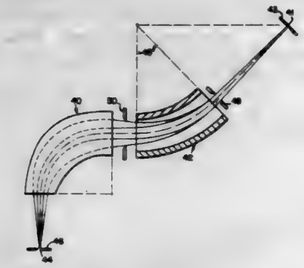
Duane P. Littlejohn, Santa Clara, and Peter M. Llewellyn, Menlo Park, Calif., assignors to Varian Associates, Palo Alto, Calif., a corporation of California

Filed Oct. 11, 1965, Ser. No. 494,368
Int. Cl. B01d 59/44
U.S. Cl. 250—41.9 4 Claims



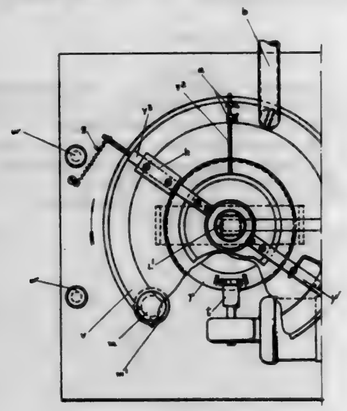
A spectrometer assembly including a pivotally mounted instrument housing and analyzer support means allowing for the selective removal and accurate repositioning of the analyzer structure within the magnetic air gap. In one position the analyzer is rotated clear allowing easy access to both analyzer and air gap. In the other position the analyzer structure is accurately repositioned between the pole faces of the magnet.

3,445,650
DOUBLE FOCUSSING MASS SPECTROMETER INCLUDING A WEDGE-SHAPED MAGNETIC SECTOR FIELD
Helmut J. Liebl, Goleta, Calif., assignor to Applied Research Laboratories, Inc., Glendale, Calif., a corporation of Delaware
Filed Oct. 11, 1965, Ser. No. 494,378
Int. Cl. H01j *39/34, 37/26;* B01d *59/44*
U.S. Cl. 250—41.9 6 Claims



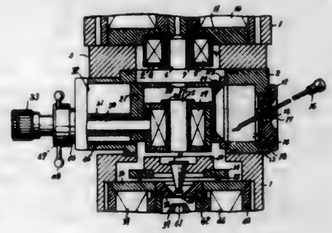
A mass spectrometer including a wedge-shaped, 90°, magnetic sector lens in tandem with a 45°, spherical, electrical condenser lens.

3,445,651
RADIOMETRIC ANALYSIS OF POWDERED SAMPLE MATERIAL
Peter Edward Starnes, Earley, Reading, England, assignor to Hilger & Watts Limited, London, England, a British company
Filed July 6, 1964, Ser. No. 380,254
Int. Cl. H01j *37/00;* G01n *23/12*
U.S. Cl. 250—43.5 17 Claims



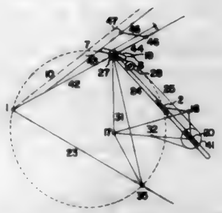
2. Apparatus for testing powdered sample material by radiometric analysis including a movable sample carrier, means for feeding said powdered sample material to said carrier, means for forming a layer or ribbon of powdered sample material on said carrier of substantially constant mass per unit area and substantially constant thickness and width, means for continuously measuring the weight of said powdered sample material on said carrier, means for regulating the rate of feed of said powdered sample material to said carrier in order to maintain the weight of said powdered material on said carrier substantially constant, a source of radiation past which said sample layer can be moved by the carrier at a substantially constant distance from said source so as to be irradiated thereby and means for measuring the resultant radiations emanating from the sample material.

3,445,652
BEAM DEFLECTING APPARATUS WITH DEFLECTION COILS LOCATED WITHIN AN ELECTRON MICROSCOPE SPECIMEN CHAMBER
Shigeru Suzuki and Yasutaka Baba, Tokyo, Japan, assignors to Nihon Denshi Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan
Filed Sept. 20, 1966, Ser. No. 580,686
Claims priority, application Japan, Sept. 28, 1965, 40/59,281
Int. Cl. H01j *37/26*
U.S. Cl. 250—49.5 5 Claims



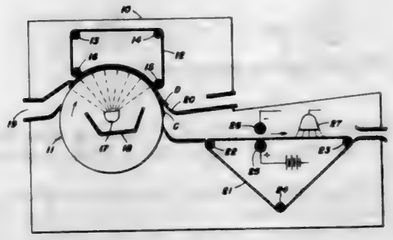
An electron beam deflecting apparatus for an electron microscope in which two electron beam deflection coils are arranged in a main specimen chamber such that the second deflection coil is oriented as nearly as possible to the specimen for deflecting the incident electron beam at as small an angle as possible with respect to the optical axis.

3,445,653
X-RAY MONOCHROMATOR OF LINEAR TYPE
Teruichi Tomura, Kodaira-shi, Tokyo-to, Japan, assignor to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company
Filed Oct. 4, 1965, Ser. No. 492,616
Claims priority, application Japan, Oct. 10, 1964, 39/57,528
Int. Cl. G01n *23/20*
U.S. Cl. 250—51.5 4 Claims



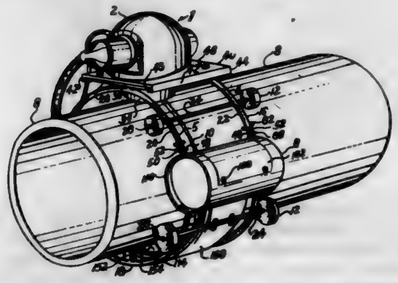
A linear type X-ray monochromator constructed by a first link connecting four points consisting of a first pivot disposed at one point spaced apart by a specific distance from the center of a Rowland circle, a first terminal point, on which an analyzing crystal is mounted, a second terminal point, and a second pivot disposed at the intersection point of the Rowland circle and an auxiliary circle having the same radius as that of the Rowland circle and a center thereof at the point spaced apart from the center point by a specific distance, both points being fitted movably along two straight lines intersecting at an X-ray source to form a certain angle and always to exist on the circumference of the Rowland circle; and a second link connecting three points consisting of a third pivot disposed at a point on a straightway guide movably fitted on the second pivot so as to be spaced apart from the point by a distance equal to the distance between the X-ray source and the first terminal point, and a third terminal point from the point on the straightway guide by a distance equal to the above specific distance; and one end of a lever having a length equal to the above specific distance is secured to the point, and the other end is movably fitted on the straightway guide, whereby a focussing point of the diffracted X-ray can be obtained on the circumference of the Rowland circle.

3,445,654
REFLEX COPYING PROCESS AND APPARATUS EMPLOYING INFRARED EXPOSURE AND ELECTROLYTIC DEVELOPMENT
Frank J. Loprest, Vestal, N.Y., assignor to GAF Corporation, a corporation of Delaware
Filed Dec. 30, 1966, Ser. No. 606,082
Int. Cl. G01n *21/34;* H01j *37/22*
U.S. Cl. 250—65 20 Claims



This invention relates to a process and apparatus for the reflex copying of original documents through the sequential use of infrared heat and an electrical current. Superimposed original documents and sensitized copying sheets are subjected to infrared radiation. The sensitized copying sheet contains a substance adapted to form an electrically conductive base upon application of infrared heat, which upon being subjected to the electrical current will provide a basic medium. The basic medium will then form the desired environment for a developing reaction which will produce a visible dye in the pattern of the original document.

3,445,655
APPARATUS FOR THE SUPPORT AND MOVEMENT OF RADIOGRAPHIC EQUIPMENT ON AN ELONGATED PIPE
Leonard O. Curry, Nevada, Mo. 64772
Filed Aug. 18, 1966, Ser. No. 573,353
Int. Cl. G01n *23/04;* H01j *37/22*
U.S. Cl. 250—65 5 Claims



Apparatus for the support and movement of radiographic equipment during the radiographic examination of an object such as an elongated pipe comprises a carrier having spreadable rigid portions adapted for exteriorly encompassing the object, rollers on the carrier with peripheral portions positioned radially inwardly thereof for engaging the exterior surface of the object, passageway structure for disposing a length of film along a length of the carrier and a bracket on the carrier opposed and spaced from the passageway structure for directing penetrating radiant energy through the object and onto the film.

3,445,656
CURING VINYL MATERIAL USING RHODAMINE AS A CURE INDICATOR
James W. Hull, Long Grove, and Howard Penn, Skokie, Ill., assignors to Morton International, Inc., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 337,737, Jan. 15, 1964. This application Dec. 23, 1966, Ser. No. 604,117
Int. Cl. G01n *21/38*
U.S. Cl. 250—71 10 Claims

A vinyl resin curing method in which rhodamine is included in a curable vinyl resin such as a polyvinylchloride plastisol prior to curing. During or after curing, the resin is examined in ultraviolet or other invisible light for a change in color which indicate complete cure; this is usually done by comparing color with that of a similar completely cured standard.

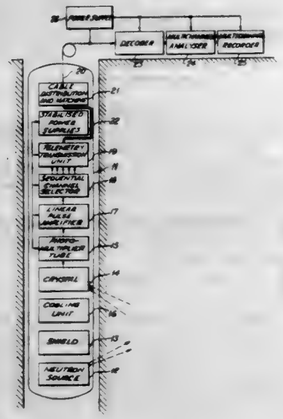
3,445,657
METHOD FOR EXAMINING SURFACES USING CHEMICAL MIXTURES SELECTED TO PRODUCE KNOWN EFFECTS IF CERTAIN SURFACE CONDITIONS EXIST
John Lynde Anderson, Orlando, Fla., assignor to Cleanometer Corporation, a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 506,566, Nov. 5, 1965, which is a continuation-in-part of application Ser. No. 161,246, Dec. 21, 1961, which in turn is a continuation-in-part of application Ser. No. 78,284, Dec. 27, 1960. This application Jan. 9, 1967, Ser. No. 607,914
Int. Cl. G01n *21/16*
U.S. Cl. 250—71 10 Claims

Chemical mixtures are produced which are known to alter a surface in certain ways if certain surface conditions exist as, for example, by selective absorption of one of the chemicals by a given contaminant on the surface. An unknown surface is exposed to a given mixture and the modified surface is tested to determine if the given contaminant is present or not. Different mixtures are used to detect the existence or absence of other conditions in a similar manner.

3,445,658
METHOD AND APPARATUS FOR LOGGING BOREHOLES USING TIME POSITION TELEMETRY
Eric Henry Ward, Sunbury-on-Thames, England, assignor to British Petroleum Company Limited, London, England, a British joint-stock company
Filed Dec. 17, 1963, Ser. No. 331,241
Claims priority, application Great Britain, Jan. 10, 1963, 1,164/63
Int. Cl. G01t *1/20;* H01j *39/18*
U.S. Cl. 250—71.5 9 Claims

1. A method of logging a borehole comprising running a logging sonde down the borehole; detecting gamma photons emitted as a result of natural or induced disintegration of atomic nuclei of the materials in the vicinity of a single detector in the sonde; producing electrical pulses having amplitudes corresponding to the energy of the gamma photons respectively producing the pulses; gating said electrical pulses derived from said single detector as they occur into individual ones of a plurality of signal channels in a sequential manner; multiplexing

said signal channels by time-division; position modulating said electrical pulses in said signal channels to produce pulses position modulated according to the amplitude of corresponding original electrical pulses; and transmitting the time-division multiplexed, position modulated pulses via a cable to surface equipment.

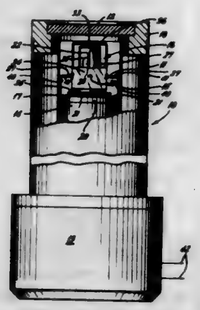


3,445,659

CRYOGENICALLY COOLED RADIATION DETECTION APPARATUS

Angelo Guimento, Lansdale, and Charles T. Kitzmiller, Pottstown, Pa., assignors to Philco-Ford Corporation, Philadelphia, Pa., a corporation of Delaware

Filed Jan. 9, 1967, Ser. No. 608,198
Int. Cl. G01t *1/16*
U.S. Cl. 250—83 9 Claims



Cryogenically cooled radiant energy detection apparatus includes an infrared detector cell mounted on a generally rod-shaped heat sink having a generally dis-shaped base coaxial therewith. A hollow, tubular radiation shield susbtantially encloses the heat sink and has an aperture in one end thereof disposed for alignment with the sensing surface of the detector cell. A hollow tubular sealing element of glass is arranged coaxially with the radiation shield, and is provided in the region of one end with a window of infrared energy transmission material aligned with the aperture in the shield, and in the region of the other end with a flanged portion mating with and hermetically sealed to the base of the heat sink. Lead wires are sealed into the glass element and extend therethrough into electrical engagement with the detector cell. Apparatus for cryogenically cooling the device is disposed in heat exchange relation with the base of the heat sink.

3,445,660

METHOD FOR DETECTION OF ULTRAVIOLET RADIATION

Louis Garasi, Los Angeles, Stephen Kaye, Pasadena, and David B. Medved, Los Angeles, Calif., assignors to Electro-Optical Systems, Inc., Pasadena, Calif., a corporation of California

Filed Mar. 17, 1965, Ser. No. 440,517
Int. Cl. G01t *1/16;* H01j *39/00*
U.S. Cl. 250—83.3 3 Claims



1. A simple, sensitive method of detecting ultraviolet radiation in the range of about 500 to 3000 angstroms comprising:

(a) providing a body of silicon having a resistivity of about 1 to 50 ohm-cm., a light receiving surface, and containing adjacent zones of p-type and n-type conductivity forming a p-n junction spaced less than about 0.5 micron from said light receiving surface;

(b) exposing said light receiving surafce to the ultraviolet radiation; and,

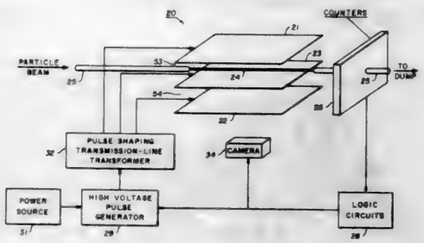
(c) measuring the photoresponse of said body to said radiation.

3,445,661

PULSE-SHAPING TRANSMISSION-LINE TRANSFORMER FOR A DOUBLE-GAP STREAMER CHAMBER

Allen C. Odian and Fatin Bulos, Palo Alto, Francesco Villa, Los Altos, and David E. Yount, Menlo Park, Calif., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Sept. 11, 1967, Ser. No. 667,338
Int. Cl. G01t *1/18;* H01j *39/26*
U.S. Cl. 250—83.3 10 Claims



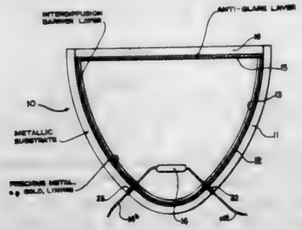
A large streamer chamber has all parts equally energized with a high-voltage pulse that has a duration on the order of the chamber length. The chamber is directly energized as a transmission line from a five-element transmission-line transformer matched to the characteristic impedance of the chamber. The transformer is charged from a Marx generator through a spark-gap switch. The chamber is terminated with a resistance equal to the characteristic impedance of the chamber.

3,445,662

COMPOSITE COATED HEAT REFLECTORS AND INFRARED LAMP HEATERS EQUIPPED THEREWITH

Robert C. Langley, Millington, N.J., assignor to Engelhard Minerals & Chemicals Corporation, a corporation of Delaware

Filed Dec. 28, 1964, Ser. No. 421,247
The portion of the term of the patent subsequent to Apr. 6, 1982, has been disclaimed
Int. Cl. G21h *3/02*
U.S. Cl. 250—88 10 Claims



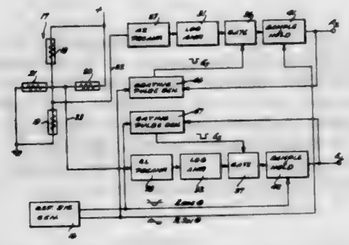
An infrared lamp heater is disclosed wherein an infrared source is mounted in front of a reflector comprising a metallic substrate having an infrared-reflective coating of a precious metal on its surface, and a refractory oxide diffusion barrier layer from 200 A. to 2000 A. thick between the reflective surface and the metallic substrate to prevent diffusion of the reflective coating into the substrate.

3,445,663

NOISE DISCRIMINATION BY UNBLANKING DURING THE TIME THAT AN A-C REFERENCE SIGNAL IS IN THE NEIGHBORHOOD OF THE VALUE IT HAD AT THE TIME OF THE PREVIOUSLY ACCEPTED PULSE

Sheldon Jones, Palos Verdes Estates, and Raymond W. Briggs, Manhattan Beach, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed June 25, 1964, Ser. No. 377,864
Int. Cl. G01j *1/20*
U.S. Cl. 250—203 10 Claims



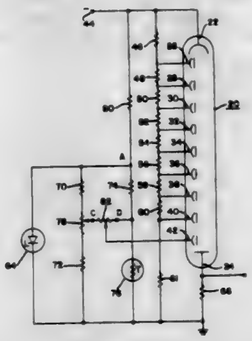
This system includes an IR detecting and tracking system and a circuit which dynamically blanks unwanted background noise signals in the tracking field of view by using the error signal information derived from the last unblanked pulse to generate a gating pulse to unblank the input only during the time that a sinusoidal reference signal differs from the value it had at the time of the last unblanked pulse by plus or minus a settable amount.

3,445,664

TEMPERATURE COMPENSATING CIRCUIT FOR PHOTOMULTIPLIER TUBES

Alexander E. Martens, Greece, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York

Filed June 5, 1967, Ser. No. 643,661
Int. Cl. H01j *39/02, 39/10*
U.S. Cl. 250—207 11 Claims



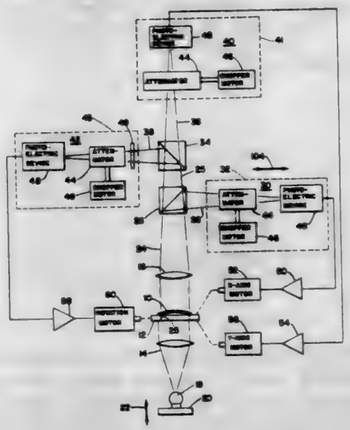
A temperature compensating bridge circuit, including a temperature sensitive element, is coupled to a control electrode of a photoelectric device. The bridge circuit includes two potentiometers for matching the temperature compensating action of the bridge circuit to the characteristics of the connected photoelectric device.

3,445,665

CONTROL SYSTEM FOR AUTOMATICALLY LOCATING THE OPTICAL CENTER AND/OR OPTICAL AXIS OF AN OPTICAL SYSTEM OR LENS

George J. Laughman, Perinton, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York

Filed Oct. 3, 1966, Ser. No. 583,570
Int. Cl. H01j *39/12*
U.S. Cl. 250—208 9 Claims



A control system for automatically positioning an optical system is disclosed. A beam of radiation from the optical system is interrupted by a chopper that provides a limited passage for the beam that periodically alternates about a reference axis. A photodetector receives the

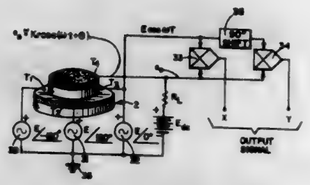
chopped beam of radiation and develops an electrical signal that controls a servo motor that drives a portion of the optical system, in a direction transverse the optical axis of the beam to symmetrically position the beam about the chopper reference axis.

3,445,666
ELECTRO-OPTICAL DEVICE WITH CONCENTRIC ARRANGEMENT OF LAYERS
Alvin A. Snaper, P.O. Box 83, Burbank, Calif. 91503
Filed Oct. 26, 1964, Ser. No. 406,362
Int. Cl. H01j 39/12
U.S. Cl. 250—211 2 Claims



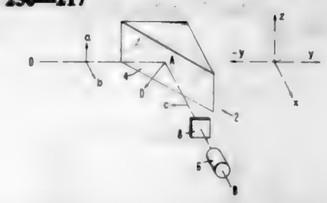
This invention combines the features of photoconductive and ferroelectric materials in such a manner as to provide an electro-optical memory device. More particularly, photoconductive and ferroelectric layers are sandwiched between a pair of transparent conductors, the entire group being arranged in a concentric pattern. Information is stored in the device when a D-C voltage is applied to it at the same time that a point of light is directed against it. The same information is read out by reversing the polarity of the voltage while the light is directed against the same point on the device.

3,445,667
PHOTOSENSITIVE SEMICONDUCTOR DEVICE FOR OBTAINING LIGHT SOURCE POSITION DATA
Norman G. Dillman, Rolla, Mo., assignor to North American Rockwell Corporation, a corporation of Delaware
Filed Sept. 20, 1965, Ser. No. 488,485
Int. Cl. H01j 39/12; G01j 1/20
U.S. Cl. 250—211 9 Claims



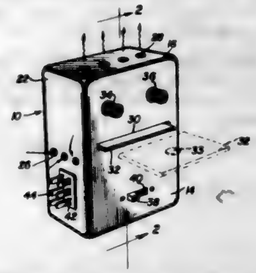
A volume effect photosensitive semiconductor device for detecting beams of radiant energy such as a light beam, wherein a spatially varying field is introduced into one of the outer layers of the volume effect device. A light beam impinging upon the photodetector portion connects the potential of the layer to the other outer layer in the position of impingement. The phase and magnitude of the output voltage is then correlated with the known characteristics of the spatially varying field to define the point of impingement.

3,445,668
ULTRAFAST OPTICAL COINCIDENCE DETECTOR WHICH UTILIZES THE (1, −1, 0) SURFACE OR ITS CRYSTALLOGRAPHIC EQUIVALENT IN CRYSTALS OF THE 42m OR 43m CLASS FOR MIXING TWO ORTHOGONALLY POLARIZED PULSES
John A. Armstrong, South Salem, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed May 4, 1967, Ser. No. 636,105
Int. Cl. H01j 39/12; G02f 1/28
U.S. Cl. 250—217 6 Claims



An optical pulse coincidence detector whose coincidence resolving time is faster than 10^{-12} seconds. The detector utilizes the optical sum-frequency (of two coincident pulses) generated in reflection at the surface of a single crystal of GaAs, which optical sum-frequency is generated only when the two coincident pulses are orthogonally polarized. The optical sum-frequency is a particular color and the detector can be made sensitive to this color.

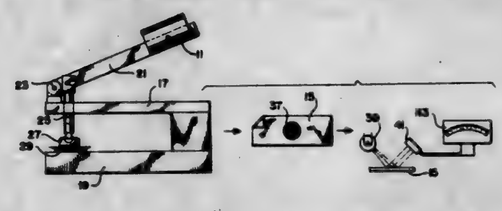
3,445,669
RADIATION SENSITIVE CARBON MONOXIDE DETECTOR
Richard J. Jordan, Roseville, and Paul N. Erickson, Detroit, Mich., assignors to General Marine, Inc., a corporation of Michigan
Filed July 14, 1966, Ser. No. 565,209
Int. Cl. G01n 21/26
U.S. Cl. 250—218 7 Claims



A detector for carbon monoxide including a casing having means provided for passage of air therethrough and a photoelectric detector incorporated therein including an insertable plate having a sensitive area thereon which will occlude the light transmitted therethrough when exposed to carbon monoxide. Heating elements are provided for inducing convection flow and heating the sensitive area to raise the temperature thereof.

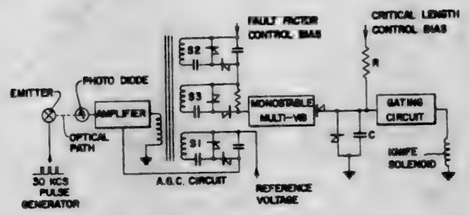
3,445,670
PHOTOELECTRIC METHOD FOR TESTING THE LIFE AND QUALITY OF INKED RIBBONS
Virgil W. Westdale, Farmington, Mich., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Aug. 12, 1965, Ser. No. 479,209
Int. Cl. G01n 21/30
U.S. Cl. 250—219 6 Claims

The quality of newly inked printing ribbons is determined by transferring an image from said ribbon to a test sheet. The image is then photoelectrically analyzed so as to determine its contrast value in terms of a meter



reading and the value is then compared with predetermined standard readings to predict the potential life of the ribbon.

3,445,671
PHOTOELECTRIC DEFECT DETECTOR WITH INDEPENDENT CONTROL OF WIDTH AND LENGTH OF DEFECTS
Charles Gunn-Russell, London, England, assignor to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
Filed Oct. 14, 1965, Ser. No. 495,877
Claims priority, application Great Britain, Oct. 16, 1964, 42,343/64; Oct. 29, 1964, 44,208/64
Int. Cl. G01n 21/30
U.S. Cl. 250—219 14 Claims



Apparatus scans yarn in motion to photodetect slubs in the yarn of either excessive width or excessive length and provide electrically processed signals for operating a cutter when an unacceptable slub is found. Bias controls permit the apparatus to work at different speeds and for different slub dimensions.

3,445,672
FLAW DETECTION AND MARKING SYSTEM
Bruce G. Marks, Lansdale, Pa., assignor to Philco-Ford Corporation, a corporation of Delaware
Filed Aug. 15, 1966, Ser. No. 572,430
Int. Cl. G01n 21/30, 21/32
U.S. Cl. 250—219 10 Claims

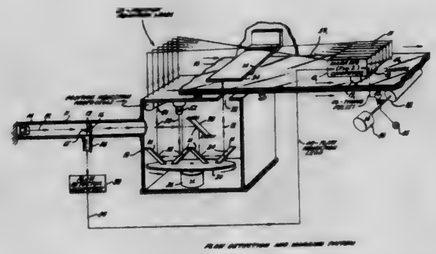
7. A flaw detecting and marking system, comprising, in combination:

(a) means for scanning a beam across a surface of a body of substantially homogeneous material in a raster of sequential adjacent lines and for producing a flaw indication signal each time said beam element of said raster encounters an irregularity in said body,

(b) means for supplying sequentially a plurality of scanning element position indicating signals as said beam scans each line of said raster, each of said position indicating signals being representative of a respective one of a plurality of parallel elongated areas of said surface whose major axes are crossed by said lines of said raster,

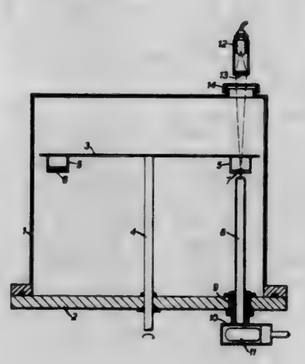
(c) means for supplying a timing signal each time a predetermined length, measured normal to said lines of said raster, is scanned,

(d) means, responsive to said position indicating signals and timing signal, for providing a respective mark command signal for each of said elongated areas of said surface when a predetermined number, from 1 to n, where n is a whole integer, of flaw indication signals are produced concomitantly with a respective one of said position indicating signals and during the period between successive timing signals, and



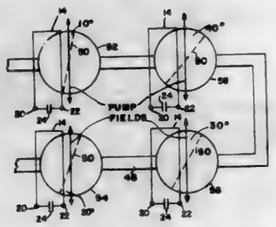
(e) means, responsive to said mark command signal, for marking the position of each of said parallel elongated areas of said surface which was scanned at the time said flaw indication signals were generated.

3,445,673
APPARATUS FOR MEASURING OPTICAL CHARACTERISTICS OF COATINGS ON LENSES
James English, Crawley, Tony Ian Putner, East Grinstead, John Francis Watts, Crawley, and Jeremy Allan Hill, Horsham, England, assignors to Edwards High Vacuum International Limited, Crawley, Sussex, England, a British company
Filed Nov. 8, 1966, Ser. No. 592,807
Claims priority, application Great Britain, Nov. 11, 1965, 47,890/65
Int. Cl. H01j 39/12
U.S. Cl. 250—223 8 Claims



Vacuum coating apparatus for coating ophthalmic lenses of differing focal lengths including an optical characteristic measurement device including a light source and a photocell. The light from the source which leaves the lenses in the general direction of the photocell is collected by a light guide which passes through the wall of a chamber in which the coating operation takes place and outside which the photocell is situated.

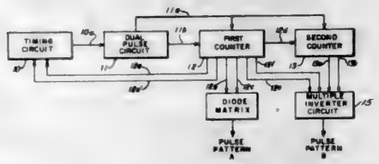
3,445,674
PARAMETRIC DEVICE HAVING PUMP FIELD AND EASY AXIS DISPOSED AT AN ANGLE
Virgil A. Ehresman, Richfield, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 9, 1961, Ser. No. 81,360
Int. Cl. H01f 27/42, 31/06
U.S. Cl. 307—88 31 Claims



1. A parametric device comprising a magnetic element having a given easy axis and an oscillatable magnetization vector, and means including crossed input and output conductors coupled to said element for applying thereto a varying field via at least an input one of said conductors and along an axis oriented with respect to said easy axis at an angle predetermined to cause a desired magnitude of effective negative resistance to appear across an output one of said conductors when said vector oscillates due at least in part to said varying field.

3,445,675
PULSE GENERATING SYSTEMS
Trevor Temple, Kingston, N.H., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed Dec. 31, 1962, Ser. No. 248,777
Int. Cl. H03k 3/64; H04m 19/00
U.S. Cl. 307—88 16 Claims

15. In a pulse generator, for producing a plurality of output pulse patterns a timing circuit, said timing circuit for producing a plurality of timed pulses comprising means for obtaining a constant voltage having a pair of end points, a series connection of means for providing an output signal and magnetic core means connected across said means for obtaining a constant voltage, a series combination of resistance means having a tap between said resistance means, said series combination connected across said means for obtaining a constant voltage, means for supplying a voltage having a plurality of terminals connected at one of said terminals to said tap between said resistance means, and means for selectively connecting another of said terminals of said means for supplying a voltage to each of said pair of end points of said means for obtaining constant voltage, a dual pulse circuit connected to said timing circuit, said dual pulse circuit being responsive to said timed pulses from said timing circuit to provide a second plurality of timed pulses, said dual pulse circuit comprising a solid state controlled electrical discharge device having an anode, cathode and a gate, means for supplying an input signal between said cathode and said gate of said discharge device, means for supplying a voltage between said anode and said cathode of said discharge device, reactor devices having a primary and secondary winding, said primary winding having a tap between its end points, said primary connected at one end to said means for supplying a voltage, a capacitor connected between said cathode and said tap, means for supplying a first output signal connected between said primary winding at its other end and said anode, and means for supplying a second output signal comprising magnetic core means connected to said secondary winding, a first counter connected to said dual pulse circuit for counting said second plurality of timed pulses and providing a third plurality of timed pulses, said first counter comprising a plurality of magnetic cores, each of said cores having a plurality of windings, a plurality of solid state controlled electrical discharge devices each connected to one of said plurality of windings of each of said plurality of magnetic cores, means for providing a shut off signal to each of said plurality of discharge devices, means for providing a read signal to one of said plurality of windings on each of said plurality of magnetic cores, and means for connecting said plurality of magnetic cores, a second counter connected to said dual pulse circuit and to said first counter for counting said third plurality of timed pulses and for providing a fourth plurality of timed pulses, said second counter comprising a plurality of magnetic cores, each of said cores having a plurality of windings, a plurality of solid state controlled electrical discharge devices each connected to one of said plurality of windings of each of said plurality of magnetic cores, means for providing a shut off signal to each of said plurality of discharge devices, means for providing a read signal to one of said

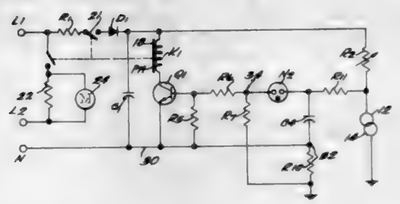


plurality of windings on each of said plurality of magnetic cores, and means for connecting said plurality of magnetic cores, a diode matrix connected to said first counter and being responsive to said second and third pluralities of timed pulses from said first counter to provide one output pulse pattern, and a multiple inverter circuit connected to said first and second counters, and being responsive to said third and fourth pluralities of timed pulses to provide another output pulse pattern, said multiple inverter circuit comprising a plurality of magnetic cores, each of said plurality of magnetic cores having a plurality of windings, a plurality of solid state controlled rectifiers connected to one of said plurality of windings of each of said plurality of magnetic cores, means for interconnecting each of said plurality of solid state controlled rectifiers, means for providing a first write signal to one of said plurality of windings on one of said plurality of magnetic cores, means for applying a second write signal to one of said plurality of windings on another one of said plurality of magnetic cores, means for applying a first read signal to one of said plurality of windings of one of said plurality of magnetic cores and means for providing a second read signal to one of said plurality of windings of another one of said plurality of magnetic cores.

3,445,676
MOISTURE SENSING CONTROL CIRCUIT DETECTING REVERSED POLARITY OF POWER SUPPLY
Wilbert E. Beller, Park Ridge, and Abed G. Kahale, Roselle, Ill., assignors to Controls Company of America, Melrose Park, Ill., a corporation of Delaware
Filed Feb. 21, 1967, Ser. No. 617,629
Int. Cl. H02h 3/06, 3/38
U.S. Cl. 307—94 6 Claims

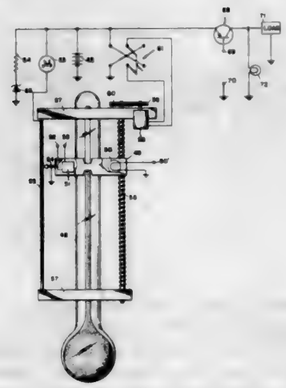
The control senses moisture between the sensing rings. As the moisture level drops, the resistance increases to

charge capacitor until neon bulb conducts to bias base of transistor "on" and initiate termination of dryer operation. If line is connected to power supply with reversed polarity, full AC voltage is applied to normally



grounded side of circuit and, on negative going portion of the AC sine wave, the transistor is biased "on" to stop operation. The plug must be properly connected to obtain operation.

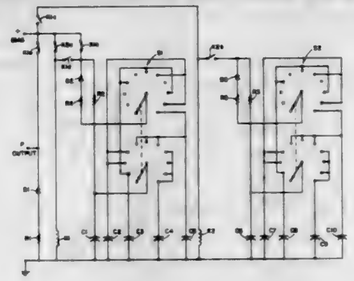
3,445,677
TEMPERATURE CONTROLLING AND INDICATING DEVICE
James R. Leftwich, Indianapolis, Ind., assignor to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware
Filed Mar. 4, 1966, Ser. No. 531,806
Int. Cl. H02b 1/24
U.S. Cl. 307—117 7 Claims



A thermometer having a capillary tube filled with an opaque liquid is provided with a slidable member containing a light source and a light-actuated device on opposite sides of the capillary tube. The continuously energized light source operates the light-actuated device when the opaque liquid falls below a predetermined level, in order to control a load device. A driven, threaded shaft may be included to move the slidable member along the thermometer. The member may then be provided with a potentiometer input for a remote electrical indication of the temperature displayed by the thermometer.

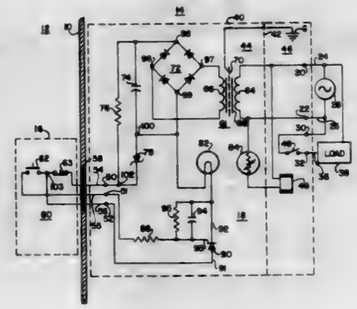
3,445,678
ELECTRICAL PULSING CIRCUIT
Brooks H. Grimme, Orlando, Fla., and Joseph A. Oddo, Huntsville, Ala., assignors to the United States of America as represented by the Secretary of the Army
Filed Oct. 24, 1967, Ser. No. 677,807
Int. Cl. H01h 47/18, 51/34
U.S. Cl. 307—132 2 Claims

An electrical circuit using the charging and discharging of capacitors thru resistors to control the operation of two relays. One of the contacts of one of the relays pro-



vides a pulsating output voltage, dependent on the operation of its relay.

3,445,679
INTRINSICALLY SAFE ELECTRICAL CONTROL SYSTEM
Charles F. Meyer, Wauwatosa, and Robert A. Wieczorek, Milwaukee, Wis., assignors to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Dec. 15, 1966, Ser. No. 602,089
Int. Cl. H01h 9/30
U.S. Cl. 307—136 9 Claims

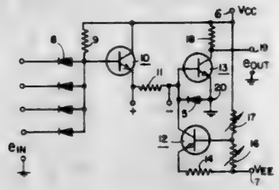


The disclosure pertains to an intrinsically safe circuit wherein the transmission of electrical energy to a switching device located in a hazardous area is limited to a value insufficient to cause an explosion in the hazardous area upon any type of malfunction of the circuit. Malfunction of the circuit from any cause is prevented by spirally wound resistors, a grounded shield transformer, and a light coupling between the circuit in the hazardous area and the remainder of the circuit located in the nonhazardous area through a photocell and a lamp to prevent transmission of dangerous electrical energy to the switching device in the hazardous area from the switching circuits in the nonhazardous area.

3,445,680
LOGIC GATE HAVING A VARIABLE SWITCHING THRESHOLD
Philip B. Foster, Phoenix, Richard A. Gissel, Tempe, and Walter C. Seelbach, Scottsdale, Ariz., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Nov. 30, 1965, Ser. No. 510,506
Int. Cl. H03k 19/34, 19/36
U.S. Cl. 307—215 10 Claims

A logic gate having a variable switching threshold and including input and output semiconductor devices interconnected by a voltage offset impedance which estab-

lishes the switching threshold for the output semiconductor device. Variable bias circuitry and an adjustable current source is connected to the offset impedance, and by varying the current level in the current source, the



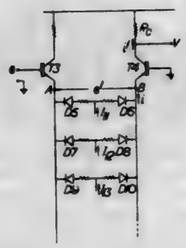
voltage drop across the offset impedance is established. This voltage drop determines the switching threshold of the output device in response to a plurality of binary input signals coupled to the input semiconductor device.

3,445,681

COMPOSITE NON-LINEAR NETWORKS

Kenneth William Cattermole, Donald Robert Barber, and Edward Harry Lambourn, London, England, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed July 1, 1965, Ser. No. 468,787
Claims priority, application Great Britain, July 17, 1964, 29,335/64
Int. Cl. G06g 7/22
U.S. Cl. 307—229 12 Claims



A compandor network comprising a plurality of non-linear circuit units, each unit including at least two non-linear devices. Each of the units includes either a pair of transistors coupled in a voltage driven current switching arrangement, or a pair of diodes coupled in a current driven voltage switching arrangement. The various embodiments include series, parallel, and series-parallel combinations of such units, so as to yield an overall voltage-current characteristic consisting of a plurality of straight line characteristics, closely approximating a desired curve.

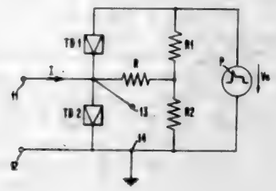
3,445,682

SIGNALS EMPLOYING A TRISTABLE TUNNEL DIODE SENSING CIRCUIT

Gerhard Kohn, Thalwil, and Dieter Seitzer, Gattikon, Switzerland, assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Dec. 20, 1965, Ser. No. 514,819
Int. Cl. H03k 5/20
U.S. Cl. 307—236 2 Claims

A tristable sensing circuit is employed to sense the bipolar outputs of a thin film memory, wherein such sensing circuit is made insensitive to the backswing of such sense signals. Strobing pulses during "read" time can be several times longer than the sense signal pulse trains yet the



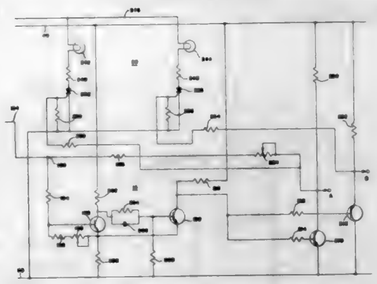
discrimination between the information pulse and undesired backswing pulse can be made at a very rapid rate.

3,445,683

SOLID-STATE RELAY

Richard O. Traina, Newark, N.J., assignor, by mesne assignments, to Plessey Airborne Corporation, Hillside, N.J., a corporation of New Jersey

Filed Mar. 8, 1965, Ser. No. 437,965
Int. Cl. H03k 17/60
U.S. Cl. 307—252 26 Claims



The disclosed solid-state relay apparatus incorporates a setpoint level adjustment circuit for adding an adjustable DC reference potential to an amplified signal and applying the sum to a trigger circuit, which may have DC, AC, or mechanical relay output circuits. The disclosure is also concerned with temperature-compensated, stabilized DC amplification, trigger circuit hysteresis control, unijunction oscillator-SCR controlled output circuits, and with time-proportioning of output circuit states.

3,445,684

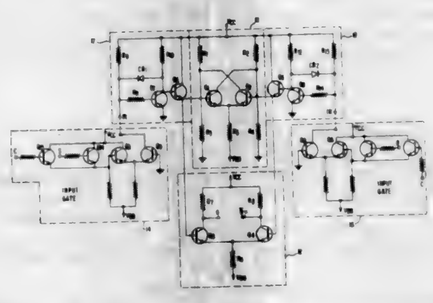
HIGH SPEED TRAILING EDGE BISTABLE MULTIVIBRATOR

David C. Ulmari and Kerry A. Jackson, Raleigh, N.C., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed Dec. 15, 1965, Ser. No. 513,984
Int. Cl. H03k 17/26, 17/28
U.S. Cl. 307—269 11 Claims

3. A lagging edge triggered transistorized flip-flop of the type comprising a basic bistable circuit having first and second switching inputs, the improvement comprising a first transistor having an emitter connected to said first switching input and a collector adapted to be connected to a power supply, first impedance means having first and second terminals, the first terminal being connected to the base of said first transistor and the second terminal

being adapted to be connected to said power supply, a second transistor having base, emitter and collector electrodes, said collector electrode being connected to the base of said first transistor, and the emitter being connected to an electrical reference terminal, a second impedance comprising first and second resistors connected together at a common terminal, said second impedance having first and second terminals, the first terminal being



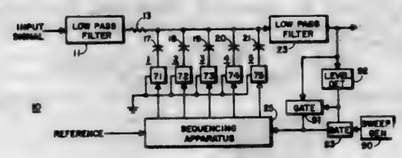
connected to the base of said second transistor and the second terminal being adapted to be connected to said power supply, first asymmetrical conducting means connected between said common terminal and the base of said first transistor, and means connected to said common terminal, responsive to a trigger pulse applied thereto for drawing current out of said common terminal, the latter means appearing as an open circuit in the absence of a trigger pulse.

3,445,685

FILTERING APPARATUS

Albert Roth, San Diego, Calif., assignor to General Dynamics Corporation, a corporation of Delaware

Filed Nov. 10, 1966, Ser. No. 593,389
Int. Cl. H03k 1/16, 3/72
U.S. Cl. 307—295 9 Claims



An adaptive filter is described which includes a plurality of capacitor channels containing circuits which permit a sample of the signal to be applied to each capacitor. Frequency translators responsive to the signal and a reference signal develop and apply a plurality of sampling pulses which sequentially operate the sampling circuits. The sampling sequence is adaptive to phase and/or frequency variations in the signal by reason of the frequency translation.

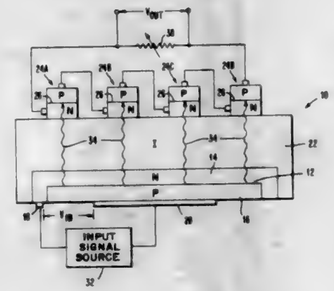
3,445,686

SOLID STATE TRANSFORMER

Richard F. Rutz, Cold Spring, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Jan. 13, 1967, Ser. No. 609,135
Int. Cl. H03k 23/08
U.S. Cl. 307—299 18 Claims

The transformer is formed of a recombination radiation input junction and a plurality of individual output junctions which are arranged to intercept the radiation produced at the input junction and produce a photocurrent and/or photovoltage in response to this radiation. The individual output junctions are not biased and are connected in a series circuit so that the voltages produced at the junctions are additive and thus a voltage output greater than the voltage input is achieved. Both the input and the output junctions are formed of the same semiconductor material (GaAs) and the entire device may be integrated in a single crystalline body. The input junction and output junctions are electrically isolated from each other by an intrinsic semi-insulating region of the material. The output



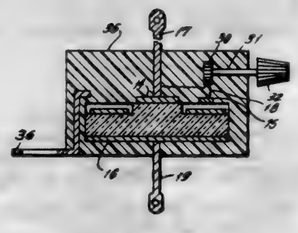
voltage varies with the impedance connected across the output. Voltage transformation can be achieved directly for both A.C. and D.C. inputs. A constant current output for a wide range of impedances to be driven by the transformer is achieved by designing the output junctions so that one of these junctions has a lower saturation current than the others. Step down voltage transformation is achieved by applying the input to the series connected junctions and taking the output from the single junction.

3,445,687

ADJUSTABLE VARIABLE VOLTAGE RESPONSIVE TWO-TERMINAL SEMICONDUCTOR SWITCH DEVICE

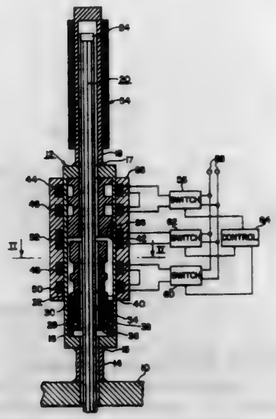
Harold Weinstein, Van Nuys, Calif., assignor to International Rectifier Corporation, El Segundo, Calif., a corporation of California

Filed Dec. 15, 1966, Ser. No. 602,027
Int. Cl. H03k 3/26
U.S. Cl. 307—305 7 Claims



A two-terminal device is formed from a four-layer type controlled rectifier wherein the two available terminals extend from a device housing and are connected to the anode and cathode terminals, respectively, of the controlled rectifier. An adjustable impedance is contained within the housing to adjust the dV/dt magnitude which will cause forward conduction of the device and its adjustment means extends through the housing to be externally available. The emitter layer of the device is connected to substantially all of the other conductivity-type layer beneath it through the adjustable impedance to permit control of the dV/dt characteristics of the device.

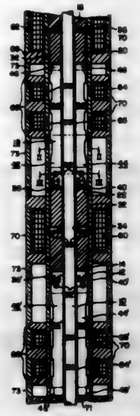
3,445,688
LINEAR MOTION DEVICE
John P. Thorel, North Ridge, Calif., and Donald G. Sherwood, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 22, 1964, Ser. No. 420,364
Int. Cl. H02k *41/02*
U.S. Cl. 310—14 5 Claims



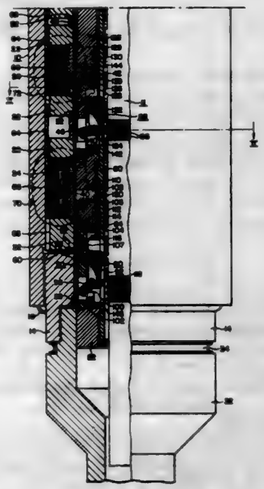
1. In a linear motion device, the combination of a linear element, a cylindrical linear actuating device surrounding said linear element and movable reciprocally along the axis of the linear element between stationary abutments, a stationary cylindrical gripping member surrounding the linear element and spaced from said actuating device along the axis of the linear element, said stationary gripping member forming one of said abutments, means for effecting frictional engagement between the linear element and the inner periphery of said actuating device, means for effecting frictional engagement between the linear element and the inner periphery of the stationary gripping member, electromagnetic coil means adapted when energized to urge said actuating device into engagement with said one abutment, and resilient means positioned adjacent that end of said actuating device remote from said one abutment for moving the actuating device into engagement with the other of the abutments independently of any magnetic actuating device.

3,445,689
LINEAR MOTION DEVICE
Donald G. Sherwood, Pittsburgh, and Thomas F. Widmer, King of Prussia, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 5, 1965, Ser. No. 423,544
Int. Cl. H02k *41/02*
U.S. Cl. 310—14 8 Claims

8. In a linear motion device, a movable linear element, a linearly movable cylindrical assembly surrounding said linear element, at least portions of said cylindrical assembly being formed from magnetically permeable material, electromagnetic coil means on opposite ends of said cylindrical assembly, one of said coil means being adapted to move said assembly in one direction along a straight-line path under the influence of an electromagnetic field produced thereby and the other of said coils being adapted to move said cylindrical assembly in the other direction along said straight-line path under the influence of an electromagnetic field produced thereby, and rigid gripper arms on said cylindrical assembly arranged to selectively engage said linear element whereby the linear element will move with said cylindrical assembly when the gripper arms on the cylindrical element engage said linear element, and electromagnetic coil means for selectively actuating said gripper arms to grip said linear element, each of said gripper arms being pivotally connected to said cylindrical assembly to provide a first lever arm portion on one side of the pivotal connection adapted to frictionally engage the linear element upon pivotal movement thereof toward said linear element, and a second lever arm portion on the other side of the pivotal connection adapted to be forced pivotally outwardly under the influence of a magnetic field produced by said last-named electromagnetic coil means.



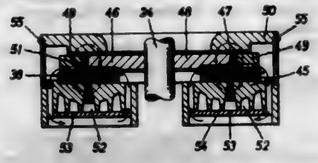
3,445,690
LINEAR MOTION DEVICE AND IMPROVED HOUSING THEREFOR
John P. Thorel, Northridge, Calif., and Robert E. Downs and Donald G. Sherwood, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 5, 1965, Ser. No. 445,540
Int. Cl. H02k *41/02*
U.S. Cl. 310—14 10 Claims



A linear motion device which effects linear movement of an element positioned within a hermetically sealed

system is formed with coil means isolated from the interior of the sealed system for effecting the linear movement. For pressurized system applications the pressure barrier for the linear motion device is a housing positioned outwardly of the coil means rather than between the coil means and the linear element. Hermetic isolation of the coil means from the interior of the system is achieved by the use of a relatively thin elongated enclosure means or "can" which of itself cannot withstand the internal pressure but which acts to translate the internal pressure to the other pressure barrier, whereby improved magnetic penetration of the coil means operating the linear motion actuators is achieved.

3,445,691
AXIAL AIR GAP DYNAMOELECTRIC MACHINE WITH COOLING
Hartwig Beyersdorf, Bremen-Arbergen, and Gerhard Bering, Bremen, Germany, assignors to Lloyd Dynamowerke G.m.b.H.
Filed Jan. 21, 1966, Ser. No. 522,264
Claims priority, application Germany, Jan. 21, 1965, L 49,769
Int. Cl. H02k *9/08*
U.S. Cl. 310—40 10 Claims



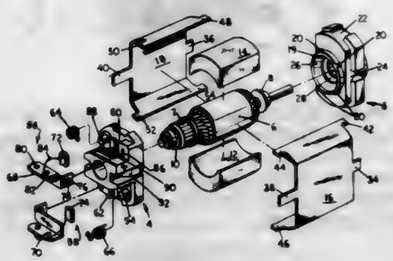
A rotary electric machine composed of a stator disc and a rotor disc, the discs being axially spaced from one another to define an air gap, one of the discs being provided with a plurality of spaced, radially extending teeth separated from one another by slots to cause the air gap between the two discs to present a magnetic conductance which varies cyclically about the axis of the machine, the other disc carrying an A.C. winding composed of a plurality of radial conductors, the machine further including a circular, homopolar excitation winding carried by one of the discs and dividing the disc into an inner portion and an outer portion, the portions being traversed by magnetic flux flowing in respectively opposite directions.

3,445,692
ELECTRIC MOTORS FOR TOYS
Masao Kato, 5 3-chome Azuma-bashi, Sumida-ku, Tokyo, Japan
Filed Sept. 14, 1965, Ser. No. 487,146
Int. Cl. H02k *15/00, 37/00*
U.S. Cl. 310—42 2 Claims



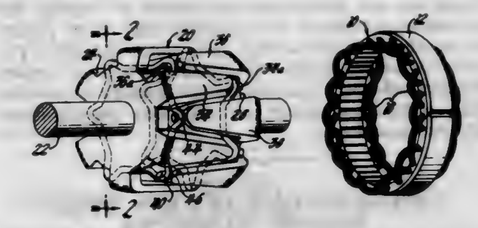
A toy motor, comprising a hollow cylindrical case comprising two equal semi-cylindrical sections insulated from each other and having side edges substantially parallel to the axis of the case, insulated end lid plates at each end securing the sections and forming an integral unit, an annular magnet having a projection on a portion of its outer surface disposed within the cylindrical case and the projection inserted into a wedging opening formed by recessed portions of the side edges of the two semi-cylindrical sections, and a rotor rotatably disposed within the magnet.

3,445,693
DC MOTOR WITH P-M STATOR, SPLIT HOUSING, AND BRUSH ASSEMBLY
James Robert Crawshaw and Kenneth Gordon Bills, Trotwood, Ohio, assignors, by mesne assignments, to TRW Inc., Cleveland, Ohio, a corporation of Ohio
Filed May 26, 1967, Ser. No. 641,685
Int. Cl. H02k *15/02, 15/14*
U.S. Cl. 310—42 10 Claims



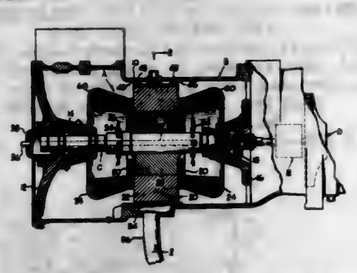
A DC motor comprising a symmetrical housing made in two separated portions held together by a pair of end bells, which provide recesses for a plurality of tabs formed on the housing half-shells. The housing shells are retained on the end bells by these tabs and other tabs which are bent over portions of the end bells in an interlocking manner. One end bell is provided with cammed surfaces to wedge the stator permanent magnets into a position spaced from the armature and against the housing shells. The shells are flattened to be as close to the armature as the magnets in that area which the magnets do not occupy. One end bell is formed with a recessed portion which cooperates with a terminal to form a brush housing to receive and retain both the brush spring and the brush. The terminals are retained in place by a tang pressed into an appropriate recess in the end bell.

3,445,694
VIBRATION DAMPENER FOR DYNAMOELECTRIC MACHINE CLAW-TOOTH ROTORS
Robert W. Campbell, Anderson, and Arza D. Heiny, Carmel, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 29, 1967, Ser. No. 641,933
Int. Cl. H02k *5/24*
U.S. Cl. 310—51 6 Claims



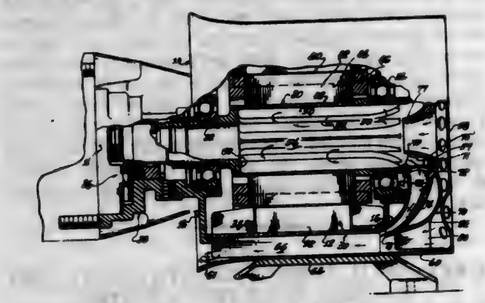
A vibration dampener is provided for the claw-tooth rotor of a dynamoelectric machine which includes a pair of rotor poles with interleaved fingers. The pole finger pairs are provided with tip extensions for receiving a pair of continuous wire bands that are formed alternately over each tip and under an adjacent pole finger.

3,445,695
COOLING SYSTEM FOR HERMETIC DYNAMOELECTRIC DEVICES
John M. Schultz, York, Pa., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed May 25, 1966, Ser. No. 552,747
Int. Cl. H02k 9/19
U.S. Cl. 310—58 1 Claim



An electric motor assembly is liquid cooled by providing a jacket partially enclosing the stator and arranged so that the liquid spills out over the stator winding end turns. Liquid coolant is also circulated through the rotor shaft and sprayed by nozzles against the internal surfaces of the winding end turns.

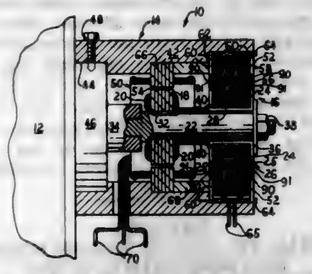
3,445,696
AIR-COOLED DYNAMOELECTRIC MACHINE
John W. Erickson, Huntington Beach., Calif., assignor to Preco, Inc., Los Angeles, Calif., a corporation of California
Filed Nov. 13, 1967, Ser. No. 682,060
Int. Cl. H02k 1/20, 9/06, 9/00
U.S. Cl. 310—59 8 Claims



A dynamoelectric machine having a hollow shaft with a plurality of radial blades positioned therein for cooling the rotor portion of the machine. A plurality of blades are mounted on a venturi arrangement which, in turn, is secured within one end portion of said machine for aiding and guiding the flow of the air streams into the stator portion of said machine. Said stator portion is provided with an annular space which includes a plurality of elongated fins for conducting the air streams therethrough. Said one end of the machine is provided with a protective screen for regulating the air inflow into the machine.

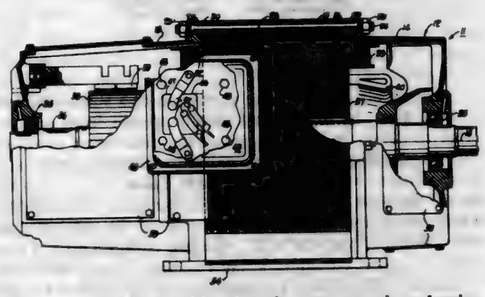
3,445,697
BRUSHLESS DIRECTION AND SPEED SENSING TRANSDUCER
Philip J. Costa, Chillicothe, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of Illinois
Filed Nov. 9, 1966, Ser. No. 593,064
Int. Cl. H02k 11/00
U.S. Cl. 310—68 3 Claims

A brushless, bearingless synchro transmitter with inductively coupled high frequency excitation for detecting the speed and direction of rotation of a prime mover rotor comprising synchro means including a stator winding and rotor winding and inductive coupling means including a primary and secondary winding. The opposing



members of each of the above means are maintained in proper register by mounting them respectively upon a stationary housing member secured in fixed relation to the prime mover and upon the shaft for the prime mover rotor.

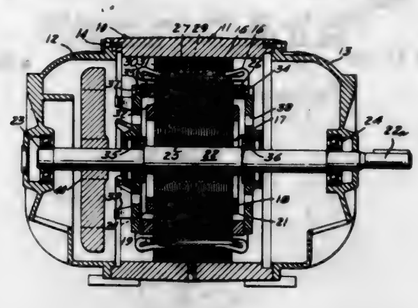
3,445,698
DYNAMOELECTRIC MACHINE WITH JUNCTION BOX ON YOKE AND END BELL
Albert J. Miko, South Euclid, Ohio, assignor to The Reliance Electric and Engineering Company, a corporation of Ohio
Filed June 29, 1967, Ser. No. 650,064
Int. Cl. H02k 11/00
U.S. Cl. 310—71 12 Claims



Dynamoelectric machine housing constructions having a junction box for electrical connection to the dynamoelectric machine. A part of the dynamoelectric machine housing is laminated as an annular yoke and end bells are fastened to opposite axial ends of this annular yoke. An aperture is provided from the exterior to the interior of the housing generally adjacent to one annular end of the laminated annular yoke. This aperture is a slot extending into the end bell and a part of the aperture is formed from part of the annular end surface of the yoke. An external junction box covers this aperture and conductors extend from the junction box into the interior of the dynamoelectric machine for connection to the electrical apparatus. This permits the end bell to be removed without disturbing the junction box or the electrical conductors inside.

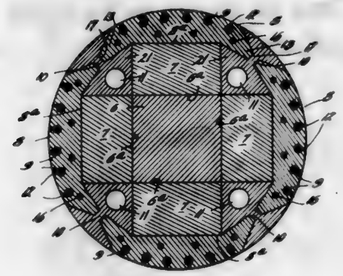
3,445,699
MULTIROTOR INDUCTION MOTOR
Russell G. Beaudry, Arcadia, and Bernhard N. Palm, Fullerton, Calif., assignors to Reuland Electric Company, City of Industry, Calif., a corporation of California
Filed Aug. 31, 1965, Ser. No. 483,913
Int. Cl. H02k 1/22, 1/26
U.S. Cl. 310—125 12 Claims

An induction motor in which a stator winding provides a rotating field having magnetic coupled driving relation with dual concentric rotors in which the inner rotor has a power delivery shaft and may comprise either a squirrel cage winding or a wound rotor type winding with slip ring connections, while the outer rotor is of the squirrel cage



type and is mounted for independent free rotation, the squirrel cage bars of the outer rotor being arranged to respond to changes in slip frequency during motor starting acceleration so as to modulate the rotating field with respect to the inner rotor and provide a soft start low torque operation.

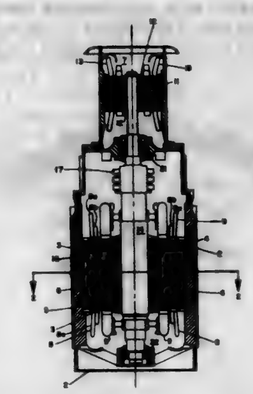
3,445,700
DYNAMO-ELECTRIC MACHINE
Raymon A. Prange, Washington, D.C., and Shelley Krasnow, Fairfax, Va., assignors to Georator Corporation, a corporation of Virginia
Continuation-in-part of application Ser. No. 435,403, Feb. 16, 1965. This application Jan. 9, 1967, Ser. No. 613,985
Int. Cl. H02k 21/12
U.S. Cl. 310—156 13 Claims



A permanent magnet generator provides zero or negative regulation over most of its rated capacity without the use of external regulation devices. Regulation is believed to be accomplished by the relationship of magnetic flux paths in the internal design of the machine.

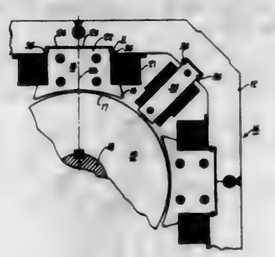
3,445,701
ROTATING ELECTRICAL APPARATUS
Harris Shapiro, Englewood, N.J., assignor to General Dynamics Corporation, Avenel, N.J., a corporation of Delaware
Continuation of application Ser. No. 488,960, Sept. 21, 1965. This application June 24, 1968, Ser. No. 742,959
Int. Cl. H02k 47/22
U.S. Cl. 310—160 8 Claims

An induction frequency changing electrical machine is described which has a wound stator and a wound rotor. The stator has two windings which produce motor and generator fluxes of different pole numbers. The rotor winding has a specific pitch which links a predetermined wavelength of the motor and generator fluxes produced by the stator windings, thereby reducing losses and re-



action against start up of the machine. An overhung spin motor which has a rotating field corresponding to the motor field of the convertor assists in starting the machine.

3,445,702
DYNAMOELECTRIC MACHINE STATOR YOKE WITH KEYED SALIENT POLES
Edmund J. Silva, Cleveland Heights, Ohio, assignor to The Reliance Electric and Engineering Company, a corporation of Ohio
Filed June 29, 1967, Ser. No. 650,120
Int. Cl. H02k 1/14, 19/26
U.S. Cl. 310—191 20 Claims

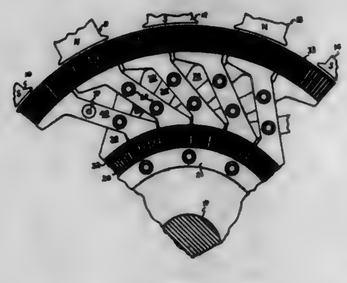


Rotatable rectangular keys are utilized for providing different air gaps between a dynamoelectric machine stator yoke and salient poles, interpoles, and pole shoes. As an example, these may be two metal members such as a pole piece and an annular yoke of a dynamoelectric machine frame. The parts are separable for easy insertion of a coil on the pole piece and are fastened together by a rectangular or square key. This key fits into V-shaped notches in each of the members and by varying the width to thickness ratio of the rectangular key, the two members may be fastened together in a plurality of differently spaced positions.

3,445,703
COMBINED CAST RISERS AND INVOLUTED EQUALIZERS
Howard D. Saively, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Dec. 6, 1965, Ser. No. 511,950
Int. Cl. H02k 3/38, 5/08
U.S. Cl. 310—204 3 Claims

Combined cast risers and involuted equalizers have the riser assembly divided into a plurality of integral seg-

ments, each having a plurality of riser conductors compacted and supported in a rigid body of resinous insulating material. The segment is, in turn, rigidly secured to the rotor, preferably by a bolt received through a bolt-receiving aperture integrally formed in the resinous material. This provides a rigid central support for the riser as-



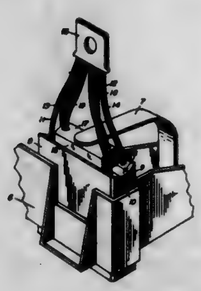
sembly and also suitable protective insulation. The individual riser conductors are compactly stacked along their central portions within the insulating material to provide large unobstructed coolant passages between the individual segments. The riser conductors have circumferentially offset radially inner and outer extremities.

3,445,704

CURRENT COLLECTING TRIPLE WAFER BRUSH ASSEMBLY

Sheldon A. Rokaw, Queens Village, and David J. King, Rockville Centre, N.Y., assignors to Morganite Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 26, 1967, Ser. No. 693,492
Int. Cl. H02k *13/10*; H01r *39/40*
U.S. Cl. 310—246 7 Claims



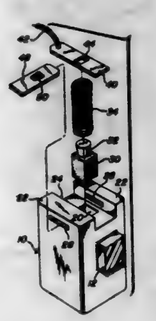
An electric brush assembly having three relatively thin carbon brush wafers, slidably insertable side-by-side in a brush holder. The top edges of the two outer wafers diverge upwardly and outwardly, while the top edge of the center wafer is flat and lies contiguous with the lower boundaries of the diverging surfaces of respective outer wafers, to jointly form a truncated V-groove. A resilient pressure pad, having a complementary engaging surface, slidably engages the truncated V-groove of the wafer tops, and is of a length less than that of the groove so that its extremities are inwardly offset from the ends of the grooves. Pairs of flexibles are anchored in the outer wafers adjacent opposite ends of the groove and spaced from the extremities of the pad. A pair of flexibles are anchored in the center wafer at points inwardly staggered with respect to the anchor points of the outer flexibles, and openings in the pad slidably receive these center flexibles, thus locating the pad's position.

3,445,705

BRUSH RETAINER ASSEMBLY

Forrest E. Fuller, North Hampton, and Wilfred W. Irwin, Medway, Ohio, assignors to Robbins & Myers, Inc., Springfield, Ohio, a corporation of Ohio

Filed Jan. 20, 1966, Ser. No. 521,955
Int. Cl. H01r *39/40*; H02k *13/10*
U.S. Cl. 310—247 6 Claims



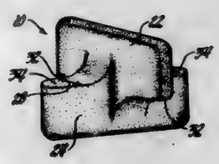
The assembly includes a housing for retaining a brush. A pair of members are interlocked and are locked to the housing for retaining the brush in position with respect to the housing. One of the members includes conductor means for conducting electrical current to and from the brush.

3,445,706

DYNAMOELECTRIC MACHINE COIL SPACER AND SUPPORT

Walter Drabik, Downers Grove, Ill., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Feb. 20, 1967, Ser. No. 617,115
Int. Cl. H02k *3/48*
U.S. Cl. 310—270 5 Claims



In a preferred embodiment a dynamoelectric winding coil end support and spacer has upper and lower angularly displaced flat spacing portions that are positioned between individual coil conductors of adjacent coil layers. With individual spacers associated with the coil ends, the spacers and the multiple coil ends are mutually interlocked in spaced apart and supporting relationship.

3,445,707

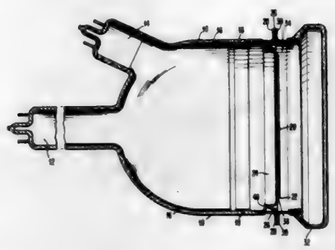
MICA MEMBRANE MOUNTING STRUCTURE FOR CATHODE-RAY STORAGE TUBE

John P. Gilvey, Mahopac, and Leonard Hershoff, Lake Katrine, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Nov. 13, 1967, Ser. No. 682,195
Int. Cl. H01j *31/48*
U.S. Cl. 313—68 6 Claims

A target electrode and support structure therefore for use in an electrostatic storage display tube comprising an

inner annular member for supporting said target electrode at the periphery thereof said member having a flange on the outer periphery thereof adapted for joining with a similar flange on the inner periphery of an outer support member said two flanges forming a bellows configuration



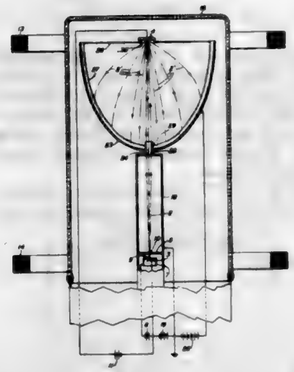
wherein the inner and outer support members have different coefficients of thermal expansion. A method for producing said support means at an elevated temperature whereby the target electrode supported by said inner member is kept under tension over the entire thermal operating range of said tube.

3,445,708

ELECTRON DIFFRACTION UNIT

Harold F. Webster, Scotia, N.Y., assignor to General Electric Company, a corporation of New York

Filed Feb. 6, 1967, Ser. No. 614,325
Int. Cl. H01j *29/46*, *37/26*, *29/18*
U.S. Cl. 313—84 4 Claims



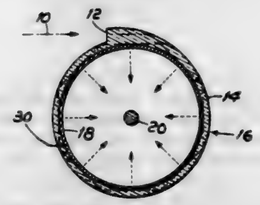
To provide an electron beam of minimal cross section for use in the investigation of atomic structures, a series arrangement including a source of electrons, an accelerating electrode, an equipotential tubular member maintaining an electrically field-free region, a display electrode with an aperture therein aligned with the equipotential tubular member, an equipotential concave grid adjacent the display electrode in combination with an electrically connected shield with an aperture therein, and a target maintained at a positive potential with respect to the source. Coils encircle the series arrangement to produce a magnetic field, and a target surface is displaced from the electron source a distance equal to an integral number of cyclotron wavelengths as determined by the magnitude of the magnetic field and the magnitude of the positive potential at the accelerating electrode.

3,445,709

CYLINDER WITH INTERNAL PHOTOSENSITIVE COATING AND PRISM ON OUTER SURFACE FOR ADMITTING LIGHT AT AN ANGLE TO BE TOTALLY INTERNALLY REFLECTED

Kenneth R. Crowe and Howard A. Leiter, Fort Wayne, Ind., assignors to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland

Filed June 23, 1967, Ser. No. 648,459
Int. Cl. H01j *39/12*
U.S. Cl. 313—102 7 Claims



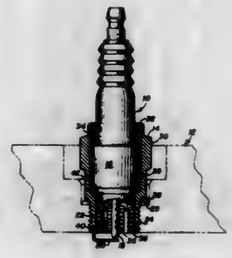
A cylindrical phototube has a photosensitive layer on the inner surface of a glass envelope. Light is injected into a prism on the outer surface at an angle to cause total refiection along multiple paths within the glass between the photosensitive layer and outer surface around the tube. The photosensitive layer is responsive to changes in light intensity and provides an electrical output signal which varies accordingly.

3,445,710

SPARK PLUG WITH AN ANNULAR HEAT DAM RECESS IN THE INSULATOR NOSE

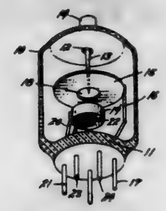
Gilbert F. Wright, San Jose, Calif., assignor to Lotemp Ignition, Inc., San Jose, Calif., a corporation of California

Continuation-in-part of application Ser. No. 390,950, Aug. 20, 1964. This application Sept. 6, 1966, Ser. No. 577,285
Int. Cl. F23q *3/00*; H01t *13/02*, *13/16*
U.S. Cl. 313—143 3 Claims



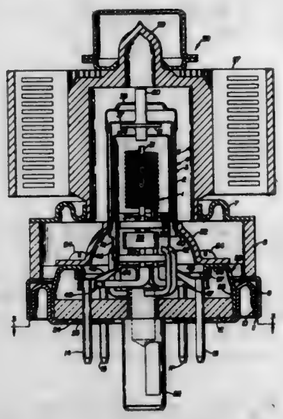
A spark plug adapted to operate efficiently in hot and cold engines, that is either high compression or low compression engines, the spark plug is provided with a central electrode surrounded by a nose of insulation. The nose is surrounded by an annular recess and a skirt of insulation which functions as a heat dam. The skirt is positioned inside of the threaded spark plug body and is slightly spaced therefrom so as to shield this part of the body from the heat of the combustion gases.

3,445,711
ELECTROSTATIC POWER AMPLIFIER TUBES HAVING AN IMPROVED POSITIONING OF THE CONTROL ELECTRODE
Jack Edward Olson, Lakewood, Colo., assignor to Trueline Instruments, Inc., Englewood, Colo., a corporation of Colorado
Filed Oct. 26, 1966, Ser. No. 589,565
Int. Cl. H01j 1/00, 19/14
U.S. Cl. 313—238 5 Claims



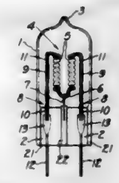
The present invention removes the control grid from its conventional position between the cathode and plate electrodes of an electronic tube, and places it outside the stream of flow of electrons between the cathode and plate electrodes. The control electrode will be physically and electrostatically shielded from the electron stream by the plate electrode, yet will exert an electrostatic force field on the electron stream to guide the electrons directly from the cathode to the plate electrodes.

3,445,712
ELECTRON TUBE WITH CATHODE SUPPORT RING HAVING OUTWARDLY EXTENDING SUPPORT LEGS, CHANNEL-SHAPED IN CROSS SECTION AND A U-SHAPED YOKE SUPPORTING THE CONTROL GRID
William R. Stuart, San Carlos, Calif., assignor, by mesne assignments, to Varian Associates, a corporation of California
Original application Dec. 27, 1962, Ser. No. 247,718, now Patent No. 3,308,521. Divided and this application June 22, 1966, Ser. No. 574,487
Int. Cl. H01j 1/88, 19/42
U.S. Cl. 313—250 6 Claims



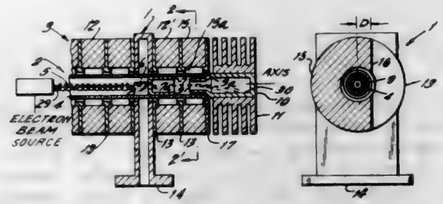
An electron tube with cathode and control grid supports of a particular shape and design. The cathode support consists of a ring with outwardly extending support legs, channel-shaped in cross section so that they can straddle and thereby make contact with their respective terminal pins. Also, the control grid is supported on the coaxial terminal pin by a U-shaped yoke.

3,445,713
HALOGEN CYCLE INCANDESCENT LAMP
John G. Cardwell, Jr., Kirtland, Ohio, assignor to General Electric Company, a corporation of New York
Filed Dec. 12, 1966, Ser. No. 600,890
Int. Cl. H01k 1/18, 1/56
U.S. Cl. 313—273 6 Claims



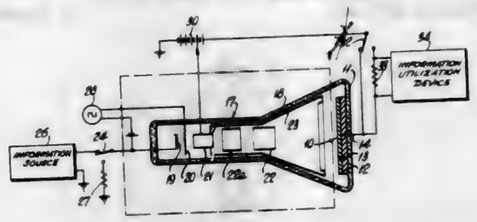
An incandescent halogen cycle lamp embodying a planar type filament and unique supporting structure, wherein the lamp envelope has a pinch seal at least at one (lower) end and which is located in a plane which generally contains the coiled segments of a planar filament. The outermost segments at each side of the filament serve as legs which snugly receive lead-in conductors which extend into and through the pinch seal. Inner segments of the filament are additionally supported at their lower ends by one or more supports extending from the pinch seal and engaging bight portions between adjacent segments. Depending upon the number of inner segments, they may be supported at their upper ends by one or more auxiliary support wires which may be anchored in an elongated bead or bridge extending between portions of the lead-in conductors which extend beyond the upper end of the filament. Such auxiliary support wires may also be anchored in a second pinch seal at the end of the envelope opposite the first-mentioned pinch seal.

3,445,714
TRAVELLING-WAVE TUBE AMPLIFIER HAVING ASYMMETRIC MAGNETOMOTIVE FORCE WITHIN THE COLLECTOR FOR PREVENTING BACKFLOW OF SECONDARY ELECTRONS
Susumu Yasuda and Ryuzo Orui, Tokyo, Japan, assignors to Nippon Electric Company Limited, Tokyo, Japan, a corporation of Japan
Filed Oct. 17, 1966, Ser. No. 587,133
Claims priority, application Japan, Oct. 19, 1965, 40/64,091
Int. Cl. H01j 25/34
U.S. Cl. 315—3.5 18 Claims



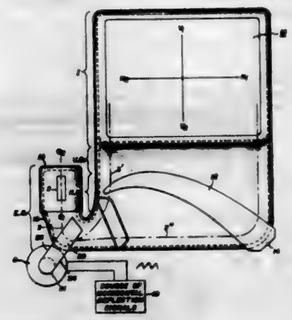
A travelling-wave tube amplifier incorporating a periodic magnetic field focussing assembly which includes at least one magnetic member positioned closest to the collector of the amplifier which is capable of generating an asymmetrical magnetic field pattern for substantially preventing secondary emission electrons from leaving the collector structure.

3,445,715
INFORMATION STORAGE APPARATUS
Thomas W. Dombeck, 525 First Ave., Ellwood City, Pa. 16117
Filed Oct. 12, 1965, Ser. No. 495,045
Int. Cl. H01j 29/70
U.S. Cl. 315—18 9 Claims



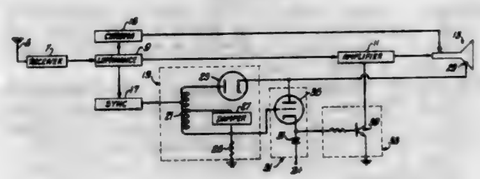
An information storage and retrieval apparatus comprises an evacuated envelope in which is positioned an information storage target plate including a metal substrate and a 0.5 to 4.0 micron thick high resistance layer having a resistivity of 10^5 to 10^{10} ohm meters, and an electron beam gun sharply focused on the high resistance layer. The beam is X and Y address modulated and intermittently intensity modulated in accordance with input information to form discrete recesses of less than 2.0 micron diameter at least some of which are imperforate. Readout is effected by sweeping the target across the target address area and measuring the signal picked up by the target substrate.

3,445,716
FLAT DISPLAY TUBE WITH A COMPACT ELECTRON GUN ASSEMBLY
Svend E. Hava, Liverpool, and Mooshi R. Namordi, North Syracuse, N.Y., assignors to General Electric Company, a corporation of New York
Filed Mar. 27, 1967, Ser. No. 626,271
Int. Cl. H01j 29/76
U.S. Cl. 315—18 7 Claims



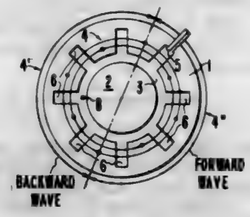
To reduce the overall dimensions of a shallow cathode ray tube system including target area, a vertical deflection section, a horizontal deflection section comprising magnetostatic and magnetodynamic pole plates, and an electron gun section including an electron gun and an electron beam reflecting means aligned with an axis parallel to the vertical axis of deflection. The reflecting means may comprise various alternatives including magnetostatic pole plates joined by a magnet, magnetostatic pole plates joined by a magnet and encircled by a magnetodynamic deflection coil, or electrostatic deflection plates, with each pair of plates parallel, and having parallel edges to produce parallel lines of flux between the plates.

3,445,717
BRIGHTNESS SIGNAL LIMITING AND FAULTY COMPONENT INDICATING CIRCUITRY FOR CATHODE RAY TUBE SYSTEM
Robert Roy Eckenbrecht, East Bethany, and Dong W. Rhee, Williamsville, N.Y., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Jan. 17, 1968, Ser. No. 698,580
Int. Cl. H01j 29/70, 29/52
U.S. Cl. 315—22 6 Claims



In a cathode ray tube system having a cathode ray tube with a beam intensity electrode coupled to a signal brightness amplification means and a high voltage electrode coupled to a source of high voltage potential, a brightness signal limiting and faulty component indicating circuit includes a shunt regulating means in the form of a shunt regulating tube and unidirectional conduction device series connected intermediate the high voltage potential source and a voltage reference level and a bias developing means in the form of an electron device coupling the signal brightness amplification means to a voltage reference level and to the shunt regulating means.

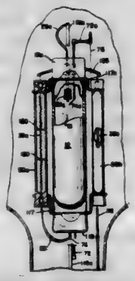
3,445,718
MIXED LINE MAGNETRON CIRCUITS HAVING STRAPPED SECTIONS AND TUBES USING SAME
Hunter L. McDowell, Chatham Township, Morris County, N.J., assignor to S-F-D Laboratories, Inc., Union, N.J., a corporation of New Jersey
Filed Dec. 27, 1965, Ser. No. 516,272
Int. Cl. H01j 25/34, 25/58, 23/22
U.S. Cl. 315—39.3 9 Claims



A composite mixed line periodic slow wave circuit is disclosed together with tubes using same. The mixed line periodic slow wave circuit includes an array of conductive elements with a pair of conductive straps extending along the array. Adjacent ones of the conductive elements of the array are conductively connected at spaced points along the straps to alternate ones of the pair of straps. Over a portion of the length of the slow wave circuit, each of the straps is segmented with the segmentation occurring intermediate the points of connection of the straps to the conductive elements of the array to define adjacent segmented and unsegmented strapped sections of the composite slow wave circuit. The segmented strapped portion of the circuit will have a fundamental forward wave characteristic, whereas the unsegmented strapped portion of the circuit will have a fundamental backward wave mode of propagation. Both modes will have a common operating point at the π mode such that only the desired π mode will propagate

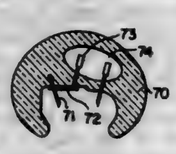
around the composite circuit. In this manner, certain undesired modes are prevented from interacting with an electron stream, thereby permitting improved electron efficiency and higher output power. Such a circuit is readily fabricated by strapping the array of conductors and then merely slotting through the straps to form a segmented section of the composite slow wave circuit.

3,445,719
METAL VAPOR LAMP WITH METAL ADDITIVE FOR IMPROVED COLOR RENDITION AND INTERNAL SELF-BALLASTING FILAMENT USED TO HEAT ARC TUBE
Wolfgang E. Thouret, North Bergen, and Herbert S. Stranss, Paramus, N.J., assignors to Duro-Test Corporation, North Bergen, N.J., a corporation of New York
Continuation-in-part of application Ser. No. 394,255, Sept. 3, 1964. This application May 31, 1967, Ser. No. 655,969
Int. Cl. H01j 7/44, 13/46, 17/34, 29/96
U.S. Cl. 315—49 13 Claims



An electric arc discharge lamp in which metal elements are placed in the arc discharge tube to contribute to the arc discharge and improve its color rendition. The arc tube is heated by the ballast filament to produce a sufficiently high vapor pressure for the metal elements which are preferably used in halide form. In one embodiment, rare earth metal halides are used in the arc tube which is heated by an exposed ballast filament. In another embodiment, alkali metal halides are used and the ballast filaments are enclosed in separate envelopes to prevent loss of the alkali from the arc tube.

3,445,720
MONOLITHIC ELECTRIC LAMPS, MOUNTABLE ON CORDS AND ELSEWHERE
John J. Horan, 420 Quigley Ave., Willow Grove, Pa. 19090
Filed May 31, 1967, Ser. No. 642,498
Int. Cl. H01j 7/44, 17/34, 19/78, 23/16, 29/96; H01k 1/62
U.S. Cl. 315—58 35 Claims



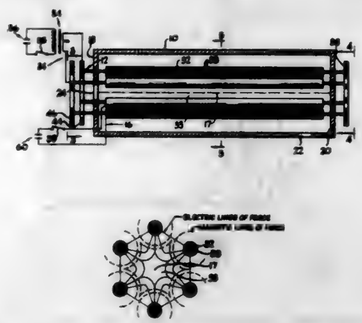
This invention relates to self-sufficient, miniature, monolithic, electric lamps, including a few filament types, the remainder being gas-discharge lamps having no runaway characteristics. Being self-sufficient, they may be connected directly across 115-volt lines. Most of the lamps have sharp lead prongs capable of piercing elastomeric electric-lamp cords. These are of such overall shapes that they can be readily locked upon such chords without the use of tools or accessories.

3,445,721
ELECTRIC DISCHARGE LAMP WITH THE STARTING RESISTOR IMPEDANCE TWICE THAT OF THE LAMP IMPEDANCE
John F. Waymouth, Marblehead, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed July 1, 1966, Ser. No. 562,361
Int. Cl. H01j 7/44; H05b 41/04
U.S. Cl. 315—60 8 Claims



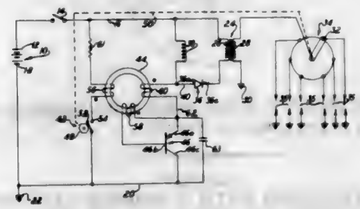
A high pressure mercury vapor lamp having primary operating electrodes supporting an arc discharge therebetween and an auxiliary starting electrode, a resistance and a normally closed thermostatic switch connected between one of the operating electrodes and the starting electrode, the resistance being within twice and one hundred times the operating impedance of the lamp, the thermostatic switch opening to cut out the resistance when the arc discharge heats the lamp to operating temperature.

3,445,722
PLASMA MANIPULATION METHOD AND APPARATUS
Franklin R. Scott, Hans H. P. Fleischmann, and Ralph G. Tuckfield, Jr., San Diego, Calif., assignors, by mesne assignments, to Gulf General Atomic Incorporated, San Diego, Calif., a corporation of Delaware
Filed Nov. 4, 1964, Ser. No. 408,946
Int. Cl. H01j 7/24, 17/26; H05b 31/26
U.S. Cl. 315—111 16 Claims



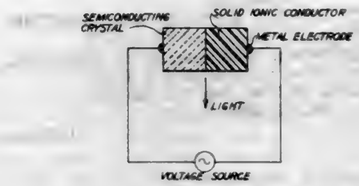
A method and apparatus for manipulating plasma is provided utilizing a direct current linear multipolar magnetic field with stationary linear poles and an axis parallel to the poles on which the magnetic field strength is zero. Gas or plasma is injected along the axis. An electrostatic field may be produced which is orthogonal with the magnetic field and has its maximum and minimum potentials at linear poles each associated with each of the magnetic field poles. Variation of the magnetic or electric field strength permits manipulation of the gas or plasma. The axis may be curved to permit plasma purification.

3,445,723
IGNITION SYSTEM APPLYING INDUCED VOLTAGE TO THE COIL PRIMARY
Ole K. Nilssen, Livonia, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Dec. 1, 1966, Ser. No. 598,389
Int. Cl. H05b 41/30
U.S. Cl. 315—209 3 Claims



This disclosure describes an ignition system permitting current to build up in an inductor and then applying the voltage induced in the inductor when the current is stopped to the primary winding of an ignition coil. The ignition pulse resulting in the coil secondary winding is transmitted to an appropriate spark plug. The inductor can be in parallel with the coil primary winding with a rectifier in one of the connecting leads blocking battery voltage and current from the coil primary while passing induced voltage and current to the coil primary. A control circuit comprising a saturable switching core and a transistor permits the current buildup in the inductor for a time period independent of engine speed.

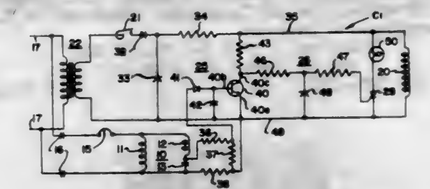
3,445,724
SOLID STATE ELECTROLUMINESCENT DEVICE
John J. Lambe, Birmingham, and William C. Vassell, Dearborn, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Aug. 31, 1966, Ser. No. 576,372
Int. Cl. H05b 33/10; H01j 63/04
U.S. Cl. 315—246 7 Claims



A solid state electroluminescent device is formed of a semiconducting crystal of cadmium fluoride and an ionically conductive solid conductor of beta alumina. The two materials are in intimate contact with one another at an interfacial area and an electric potential is established between the two materials.

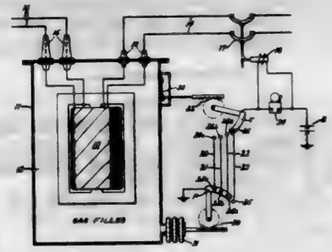
3,445,725
SOLID STATE LOCK-OUT CIRCUIT FOR COMPRESSOR
Donald R. Vander Molen, Stevensville, Mich., assignor to Whirlpool Corporation, a corporation of Delaware
Filed Feb. 2, 1967, Ser. No. 613,502
Int. Cl. H02h 7/06, 7/08, 5/00
U.S. Cl. 317—13 13 Claims

A solid state control circuit for disabling a motor having an internal protective switch. A transistor shunts an RC time delay circuit when the motor protective switch is closed, and permits operation of the RC time delay circuit when the protective switch is open. A silicon controlled rectifier (SCR) receives a signal from the RC time delay circuit when the circuit is permitted to operate,



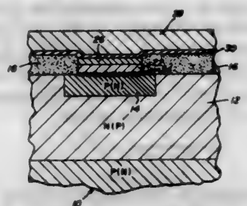
which signal gates the SCR to deenergize a relay having switch contacts controlling the operation of the motor.

3,445,726
PROTECTIVE SYSTEM FOR GAS-FILLED ELECTRIC APPARATUS
Benjamin F. Allen, Rome, Ga., assignor to General Electric Company, a corporation of New York
Filed Dec. 15, 1966, Ser. No. 601,993
Int. Cl. H02h 7/14
U.S. Cl. 317—14 8 Claims



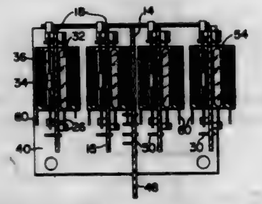
A sealed enclosure for electric apparatus filled with insulating gas under pressure is provided with low density alarm or protective means operable throughout the normal operating ranges of pressure and temperature and in response to temperature and pressure signals obtainable externally of the enclosure.

3,445,727
SEMICONDUCTOR CONTACT AND INTERCONNECTION STRUCTURE
Telford Grant Maple, Woodside, Calif., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed May 15, 1967, Ser. No. 638,341
Int. Cl. H02b 1/02, 9/00; H01l 5/00
U.S. Cl. 317—101 16 Claims



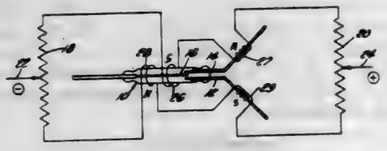
A semiconductor device having gold contacts alloyed to a silicon body, and interconnections comprising chromium-gold metallizations with nickel barriers and with selected portions of the gold content of the metallizations being removed to form chromium resistors lying on the surface of the device between gold interconnections.

3,445,728
REED RELAY ASSEMBLY
Adam A. Jorgensen, Pittsford, Arthur B. Cieslak, Rochester, and Robert W. Bentley, Penfield, N.Y., assignors to Stromberg-Carlson Corporation, Rochester, N.Y., a corporation of Delaware
Filed Jan. 3, 1967, Ser. No. 607,016
Int. Cl. H02b 1/04; H01h 1/66
U.S. Cl. 317—113 7 Claims



A read relay module including comb-shaped printed circuit cards with the teeth of the comb extending into coil bobbins for aligning them. The bobbins abut edge portions of the cards adjacent to the roots of the teeth, with the major axes of the coils in the planes of the cards. Terminal lugs are mounted on the cards for receiving the tongues of the reeds, which are straight, thus facilitating assembly by avoiding the need to orient the reeds.

3,445,729
ELECTRICALLY POLARIZED REED RELAY
John F. McNulty, Glendale, Calif., assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland
Filed Feb. 10, 1967, Ser. No. 615,158
Int. Cl. H01h 47/00, 51/28, 1/66
U.S. Cl. 317—123 5 Claims



A reed relay is enclosed in a tubelike glass structure has one movable contact carrying member and two fixed ones. A first winding surrounding the movable member is serially connected to a second winding about one of the fixed contact carrying members to define a first winding set. A second winding set is provided for the movable and remaining fixed members. The windings of each set are connected such that an energizing current produces opposite magnetic polarity conditions in respective members of each set. A first potentiometer is connected between the free ends of windings on the movable member and a second potentiometer is connected between the free ends of the windings on the fixed members. Switching control voltage is applied across selectively adjustable slidewire contacts of the potentiometers.

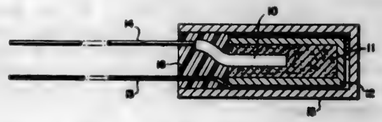
3,445,730
TELEVISION DEMAGNETIZER
Robert D. Kaha, Rockville Centre, N.Y., assignor to Fedtro, Inc., Rockville Centre, N.Y., a corporation of New York
Filed Apr. 5, 1967, Ser. No. 628,718
Int. Cl. H01f 13/00, 7/20; H01j 29/06
U.S. Cl. 317—157.5 8 Claims

A television demagnetizer which permits one-hand operation and ensures automatic current cut-off. A ring-like structure is provided with a projecting handle. A wire is coiled inside the ring and its two ends are brought out



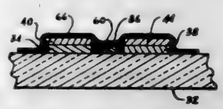
through the handle. A spring switch in the handle controls completion of the electrical circuit.

3,445,731
SOLID CAPACITOR WITH A POROUS ALUMINUM ANODE CONTAINING UP TO 8% MAGNESIUM
Hideo Saeki and Fumio Kondo, Kawasaki-shi, Kanagawa, Japan, assignors to Nippon Communication Industrial Company Limited, Kawasaki-shi, Kanagawa, Japan
Filed Oct. 25, 1966, Ser. No. 589,280
Claims priority, application Japan, Oct. 26, 1965, 40/65,255
Int. Cl. H01g 9/04
U.S. Cl. 317—230 6 Claims



A porous anode of solid electrolytic capacitor comprises sintered particles of an alloy of 0.15% to 8% magnesium and 92% to 99.85% aluminum of at least 99.99% purity. This anode is made by comminuting the alloy into granular particles of 50 to 400 mesh, compacting the particles to a green density of 0.8 to 1.7 grams/cu. cm., and sintering the green compact. The particles have a plurality of facets and contiguously adjacent facets angularly meeting each other.

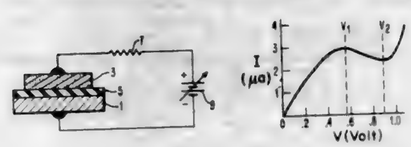
3,445,732
FIELD EFFECT DEVICE HAVING AN ELECTROLYTICALLY INSULATED GATE
John L. Janning, Dayton, Ohio, assignor to Ledex, Inc., Dayton, Ohio, a corporation of Ohio
Filed June 28, 1965, Ser. No. 467,649
Int. Cl. H01l 11/14
U.S. Cl. 317—234 3 Claims



A thin film field effect device having a gate element insulated by electrolytic action.

3,445,733
METAL-DEGENERATE SEMICONDUCTOR-INSULATOR-METAL SANDWICH EXHIBITING VOLTAGE CONTROLLED NEGATIVE RESISTANCE CHARACTERISTICS
Leo Esaki, Chappaqua, and Webster E. Howard, Jr., and Phillip J. Stiles, Yorktown Heights, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Apr. 25, 1966, Ser. No. 545,646
Int. Cl. H01l 3/10
U.S. Cl. 317—234 12 Claims

A two-terminal active circuit device exhibiting voltage-controlled negative resistance characteristics comprises a thin layer of insulating material, not substantially greater than 100 A., sandwiched in laminate fashion between a metallic layer and a degenerate-doped semiconductor layer. The insulating material and the semiconductor material are selected to particularly relate to the quantity eV_D i.e., the energy difference at the interface between the bottoms of the respective conduction bands in the semiconductor and insulating materials, and the quantity eV_v, i.e., the energy difference at the interface between



the tops of the respective valence bands in the semiconductor and insulating materials. When degenerate n-type semiconductor material is used, such relationship is given by $V_v<V_c$; when degenerate p-type semiconductor material is used, such relationship is given $V_c<V_v$. Since the probability of tunneling through the insulating layer involves parameters V_c and V_v, voltage-controlled negative resistance characteristics are obtained when an applied voltage of proper polarity is applied across the laminate structure.

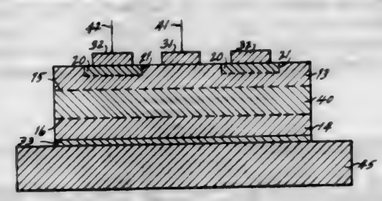
3,445,734
SINGLE DIFFUSED SURFACE TRANSISTOR AND METHOD OF MAKING SAME
Raymond P. Pecoraro, Wappingers Falls, and Orest Bilous, Beacon, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Dec. 22, 1965, Ser. No. 515,411
Int. Cl. H01l 11/00
U.S. Cl. 317—235 9 Claims



A junction transistor having a direction of carrier flow, which is parallel to the transistor surface, is formed using a single diffusion step. The collector and emitter regions are formed by simultaneous diffusion through a pair of holes in a silicon dioxide mask into an epitaxially grown base region. The relative position of the two holes in a mask and the diffusion into the epitaxial layer is such that the two diffused regions are separated by a base width which is sufficient to allow the device to operate as a junction transistor.

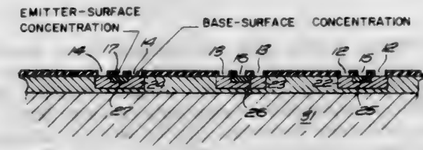
3,445,735
HIGH SPEED CONTROLLED RECTIFIERS WITH DEEP LEVEL DOPANTS
Timothy J. Desmond, Greensburg, Pa., Leon S. Greenberg, Somerville, N.J., and Harry Weisberg, Forty Fort, Pa., assignors to Radio Corporation of America, a corporation of Delaware
Original application Dec. 7, 1964, Ser. No. 416,521, now Patent No. 3,356,543, dated Dec. 5, 1967. Divided and this application Oct. 5, 1967, Ser. No. 673,142
Int. Cl. H01l 11/10
U.S. Cl. 317—235 4 Claims

A fast switching semiconductor device such as athyristor or controlled rectifier comprising a crystalline semiconductive body having a PNPN structure, and a metal-diffused region adjacent one face of the body. The diffused metal is selected from the group consisting of nickel and cobalt. Adjacent the same one face of the body having the metal-diffused region is a zone diffused with a substance which reduces the lifetime of minority charge carriers in that zone. The combination of the



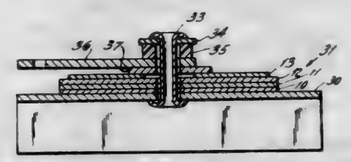
metal and the substance prevents unduly increasing the resistivity of the semiconductive body. When the semiconductive body consists of silicon, the lifetime killer is suitably gold.

3,445,736
SEMICONDUCTOR DEVICE DOPED WITH GOLD JUST TO THE POINT OF NO EXCESS AND METHOD OF MAKING
David H. Navon, Lincoln, and Edwin S. Davis, Danvers, Mass., assignors to Transitron Electronic Corporation, Wakefield, Mass., a corporation of Delaware
Filed Oct. 24, 1966, Ser. No. 589,040
Int. Cl. H01l 11/00, 15/00, 7/00
U.S. Cl. 317—235 9 Claims



A silicon semiconductor device is doped with gold just to the point of no excess to establish a predetermined collector-to-emitter offset voltage at zero collector current and predetermined base current. A silicon wafer having emitter, base and collector regions is annealed in an inert atmosphere, such as nitrogen or argon, or in oxygen, or in air for from 12 to 48 hours at a temperature of 400–600° C. in order to very sensitively adjust the donor content. The progress of the process is checked, typically at one hour intervals, by removing the wafer from the furnace and measuring the offset voltage until it corresponds to acceptable limits, typically 150 millivolts, this acceptable voltage indicating no excess of gold in the silicon.

3,445,737
UNITARY FULL WAVE RECTIFIER PLATE
Lyle W. Quatrochi, Palos Verdes, and Jefferson D. Danner, Manhattan Beach, Calif., assignors to International Rectifier Corporation, El Segundo, Calif., a corporation of California
Filed Jan. 20, 1967, Ser. No. 610,528
Int. Cl. H01l 3/02, 7/16
U.S. Cl. 317—234 4 Claims



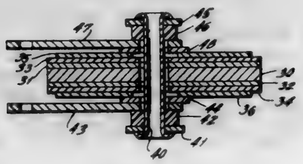
A selenium rectifier plate in which the counter electrode is sprayed onto one surface of the plate in separate insulated sections. Individual contact is made to the in-

sulated counter electrodes and a common contact is made to the main support plate with the device serving as a full wave, single phase bridge-connected rectifier. Separate spring contact clips fitted over the edge of the plate engage the separate counter electrode surfaces and are insulated from the base plate by an insulation sheet. The contact clips have upwardly extending regions to form convenient circuit connection points for the counter electrodes.

3,445,738
NON-POLARIZED CLAMPING SELENIUM RECTIFIER

Jefferson D. Danner, Manhattan Beach, and Lyle W. Quatrochi, Palos Verdes, Calif., assignors to International Rectifier Corporation, El Segundo, Calif., a corporation of California

Filed Jan. 20, 1967, Ser. No. 610,527
Int. Cl. H01l *3/02, 7/16*
U.S. Cl. 317—241 **5 Claims**

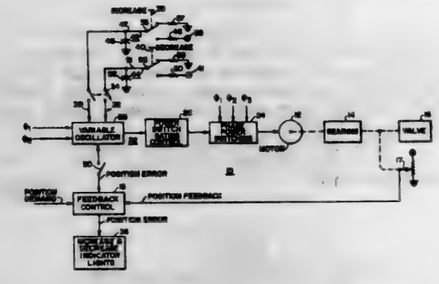


A selenium rectifier plate has selenium layers, barrier layers, and counter electrodes applied to both surfaces of a central base plate so that two selenium rectifiers are formed on a common base plate with opposing forward current conducting directions. The barrier layer on each side of the common plate is treated by etching to form sharp controlled reverse breakdown characteristics for each of the rectifiers so that the assembly acts as a non-polarized voltage clamping device.

3,445,739
VARIABLE SPEED CONTROL FOR POSITION REGULATOR MOTORS

Lyle F. Martz, Verona, Pa., assignor, by mesne assignments, to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Jan. 27, 1966, Ser. No. 523,422
Int. Cl. H02p *1/54, 5/46, 7/74*
U.S. Cl. 318—18 **3 Claims**

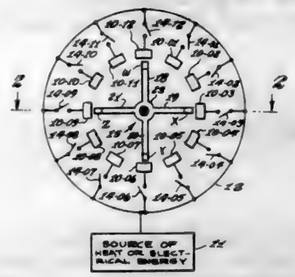


A control system determines the energization level of a positioning motor in response to a control voltage. The control voltage is coupled to the control system input through an RC network to produce an input voltage rise rate which is less than the control voltage rise rate.

3,445,740
STEP-BY-STEP THERMO-MAGNETIC MOTOR

George G. Merkl, 517 Boulevard, New Milford, N.J. 07616

Filed Feb. 20, 1968, Ser. No. 706,832
Int. Cl. H02n *3/00*
U.S. Cl. 318—117 **7 Claims**

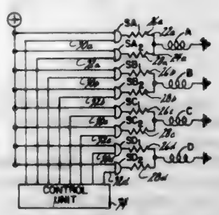


A step-by-step multi-position thermo-magnetic servomotor is shown, wherein the rotor comprises structure providing a group of salient poles. The salient poles may be produced by means such as permanent magnets. The salient poles are operatively associated with a cylindrically arranged group of magnetizable stator members each formed of an alloy the magnetic permeability of which becomes decreased upon heating. Normally, and with all of the stator members at room temperature, the rotor stands with each of its poles registering individually with one of the stator members. Each registering stator member is flanked by two inactive stator members. By simultaneously heating all of the registering stator members, the rotor becomes unlocked and free to move in either direction. By simultaneously heating, as a group, all of the inactive flanking stator members adjacent to the registering members at the same side of the registering members, the attraction of the rotor members to the two flanking stator members at either side of the registering members becomes unbalanced and the rotor is urged to move into register with the unheated group of flanking members.

3,445,741
FRACTIONAL STEP ROTARY STEPPING MOTOR AND CONTROL SYSTEM THEREFOR

Heinz Joseph Gerber, West Hartford, Conn., assignor to The Gerber Scientific Instrument Company, South Windsor, Conn., a corporation of Connecticut

Filed Apr. 17, 1967, Ser. No. 631,253
Int. Cl. H02k *37/00*
U.S. Cl. 318—138 **10 Claims**



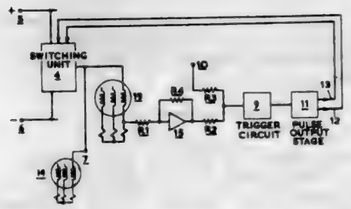
A stepping motor wherein the rotor is caused to move through a large number of discrete steps throughout the one complete cycle of energization defined as 360 electrical degrees of rotation. In comparison with prior art stepping motors, the equivalent of one full step of previous motors is broken down into a larger number of smaller or fractional steps. This is accomplished by varying the energization of the stator windings between a

number of levels including one or more levels in addition to the zero, positive one unit and negative one unit levels customarily used in prior motors.

3,445,742
CONTROL CIRCUITS FOR INVERTERS PRODUCING AN ALTERNATING OUTPUT CONSTITUTED BY A PULSE TRAIN

Michael Henry Moscardi, Stafford, England, assignor to The English Electric Company Limited, London, England, a British company

Filed July 11, 1966, Ser. No. 564,415
Claims priority, application Great Britain, July 9, 1965, 29,328/65
Int. Cl. H02p *1/42, 3/18, 5/26*
U.S. Cl. 318—230 **7 Claims**

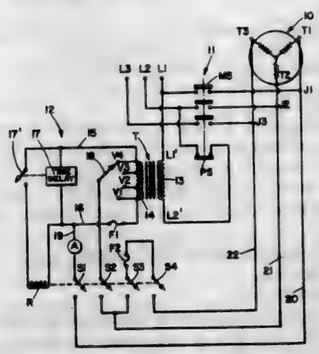


This invention relates to a control circuit for an inverter producing an alternating output constituted by a pulse train and includes an integrator connected to receive this output, a comparator for comparing the integrated output signal with a reference signal having the same waveform and frequency as that desired from the output, and a trigger circuit adapted to switch successively from one state to another in response to the difference signal developed by said comparator successively attaining a predetermined positive and negative magnitude. The output from the trigger circuit is therefore constituted by pulses having a variable repetition frequency, and these pulses are differentiated and fed back as firing pulses to the appropriate thyristors in the invertor to govern the repetition rate and/or widths of the train of pulses produced thereby so as to cause these pulses to manifest the desired output.

3,445,743
ELECTRIC MOTOR HEATING UNIT

Darrell J. Blair, Solvang, Calif., assignor to M. & B. Electric Co., Inc., a corporation of California

Filed Aug. 10, 1966, Ser. No. 571,589
Int. Cl. H02b *1/02, 9/00, 5/04*
U.S. Cl. 318—436 **2 Claims**

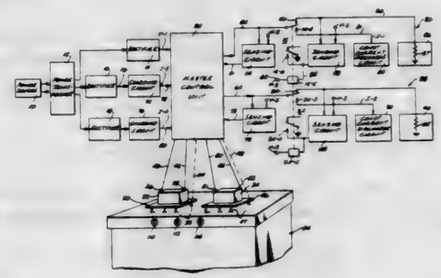


Electrical motor heating is provided by passing current through the motor windings when the motor is turned off. Towards this end, an auxiliary transformer provides a small voltage through suitable switch means to the motor windings in response to turning off of the motor. A time delay is provided to close a circuit between the transformer windings and the terminals of the motor after a sufficient length of time has passed to permit the motor to come to a complete rest so that no back E.M.F.'s are developed. Turning on of the motor automatically disconnects the auxiliary transformer heating current from the motor.

3,445,744
DEVICE FOR AND THE METHOD OF CHARGING BATTERIES

Frank D. Henderson, Placentia, and Leon E. Kryske, Los Angeles, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Feb. 23, 1968, Ser. No. 708,479
Int. Cl. H01m *45/04;* **H02j** *7/10*
U.S. Cl. 320—6 **24 Claims**



A device for simultaneously and independently charging a plurality of batteries, which device includes a plurality of constant current charging circuits, resistive loads, constant current discharging circuits, voltage sensing circuits and a master control unit. The master control unit controls the coupling between the batteries and the charging and discharging circuits so as to first establish a discharging mode of operation and to subsequently establish a charging mode of operation. During the discharging mode of operation, and under control of the voltage sensing circuits, each battery is individually coupled first to a resistive discharge circuit and then to a constant current discharge circuit so that all batteries are discharged to predetermined states. During the charging mode, each of the batteries is coupled to individual constant current charging circuits for a controlled time period so that each battery is charged to a selected standard condition of charge. The master control unit further includes logic circuits for preventing over charging of a battery in the event of power failure or upon the substitution of batteries.

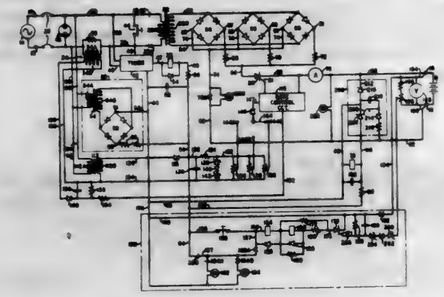
3,445,745
CONSTANT CURRENT BATTERY CHARGER

James A. Frezzolini, Bronx, N.Y., assignor to United Aerotest Laboratories, Inc., Deer Park, N.Y., a corporation of New York

Filed Nov. 18, 1966, Ser. No. 595,518
Int. Cl. H02j *7/04, 7/10*
U.S. Cl. 320—29 **4 Claims**

Apparatus for charging a battery at a constant current rate which includes a current source and a pair of output terminals adapted to be connected to the terminals of the battery to be charged. A current regulating means is connected between the current source and the output terminals. A control signal is applied to the current regulating means to maintain a constant current throughout the charging interval. The control signal is derived from a reference network for producing the reference signal and a feedback network which produces a feedback signal

proportional to the current flowing through the current regulating means. Additionally, the apparatus further includes analyzing means connected to the terminals of



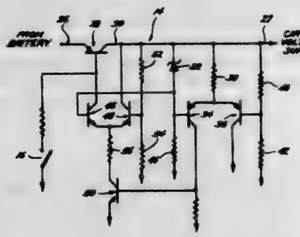
the battery which is adapted to terminate the charging cycle when the terminal voltage of the battery reaches a predetermined level.

3,445,746

BATTERY LOW VOLTAGE CUTOFF AND REGULATOR

Leroy Christopher Delatorre, Houston, Tex., assignor to Camco, Incorporated, Houston, Tex., a corporation of Texas

Filed Nov. 10, 1966, Ser. No. 593,461
Int. Cl. H02j 7/04, 7/16
U.S. Cl. 320—40 3 Claims



A battery low voltage cutoff and regulator for use in a gas lift system to provide an accurate and fail safe operation. The regulator has a first switch and a voltage regulator to provide a regulated supply voltage to a gas lift timer control and solenoid. It also measures battery voltage. When the battery voltage falls to a predetermined level, the regulator actuates another switch which deactuates the first switch. This switching action disconnects the battery supply.

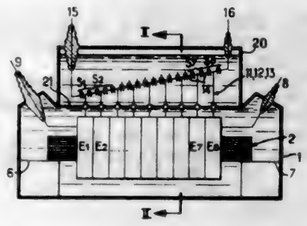
3,445,747

HIGH-VOLTAGE POWER CONVERSION ASSEMBLY COMPOSED OF A POLYPHASE TRANSFORMER COMBINED WITH A PLURALITY OF SETS OF CONTROLLED RECTIFIERS

Pierre Gabriel Laurent, Paris, France, assignor to Electricite de France (Service National), Paris, France, a French body corporate

Filed Apr. 11, 1966, Ser. No. 541,834
Claims priority, application France, Apr. 16, 1965, 13,546; Apr. 4, 1966, 56,243
Int. Cl. H02m 7/08
U.S. Cl. 321—5 6 Claims

A conversion assembly for use in a high-power, high-voltage converter, which assembly includes a polyphase transformer having one wound column per phase, with the secondary windings of the wound columns being divided into a plurality of winding elements and with each set of winding elements being associated with a set of low-voltage controlled rectifiers to define a plurality of elementary conversion stages which are connected to-



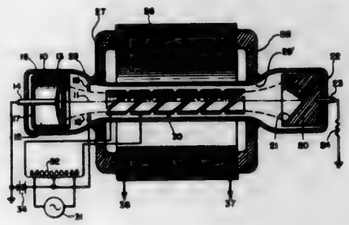
gether in series to form a high-voltage assembly, the phases of at least one of the elementary stages being formed by connecting together portions of the elementary winding elements of that stage.

3,445,748

MICROWAVE POWER RECTIFIERS

Charles B. Crumly, Palo Alto, Calif., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware

Filed Mar. 16, 1967, Ser. No. 623,599
Int. Cl. H02m 7/00; H03f 7/06
U.S. Cl. 321—8 12 Claims



Microwave energy fed to a bi-filar helix coupler is transferred thereby to an electron beam in the form of a positive synchronous wave. The modulated beam is then received by a depressed collector to which a load is connected. The apparatus functions as a rectifier of microwave power.

3,445,749

COMPOUND WOUND DIRECT CURRENT GENERATOR HAVING A SPLIT SHUNT FIELD WINDING

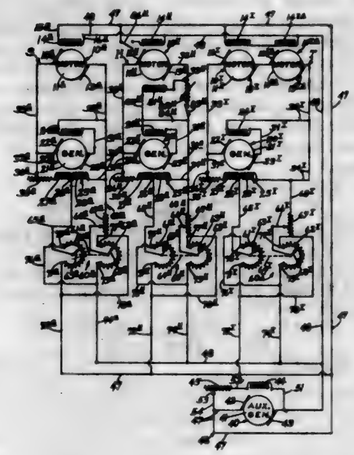
Lee C. McManus, Duluth, Minn., assignor to Clyde Iron Works, Inc., Duluth, Minn.

Filed Nov. 29, 1966, Ser. No. 597,707
Int. Cl. H02r 9/10, 9/40
U.S. Cl. 322—63 5 Claims

1. In a compound wound, direct current, electric generator for energizing a variable electric load, said generator having a rotatable armature comprising a core, windings on said core, a commutator connected to said windings, and brushes contacting said commutator, the combination of:

(a) a split shunt field winding having,
(b) a first section,
(c) a second section,
(d) said sections being connected in series and at full load producing flux in the same directions,
(e) means for exciting said first section from the output of said generator,
(f) means for separately exciting the second section from a separate source of voltage,

(g) a series field winding energized by said generator and connected in series with the armature windings and load,



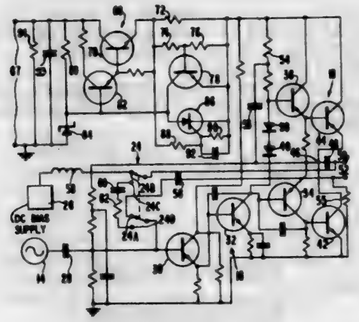
(h) said series field winding producing flux opposing the flux produced by said second field winding and,
(i) means for varying the voltage across said shunt field winding.

3,445,750

ULTRASONIC FREQUENCY POWER SUPPLY

Paul M. Uthe, Jr., Livermore, Loren G. Wright, Castro Valley, and Richard E. Greenan, Sunnyvale, Calif., assignors to Uthe Technology, Inc., Mountain View, Calif.

Filed Oct. 17, 1966, Ser. No. 587,283
Int. Cl. G05f 1/44
U.S. Cl. 323—1 5 Claims



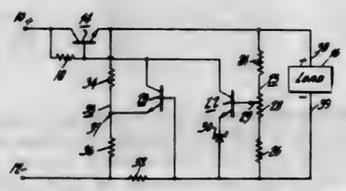
An ultrasonic power supply that has a sufficiently low output impedance that it can be directly coupled to a load without an impedance matching transformer. The direct connection permits feedback signals from the transducer to be employed directly in the power supply to correct for changes in the transducer and the load to which it is connected. Two separate feedback circuits are provided: One for maintaining constant current (for driving magnetostrictive transducers) and the other for maintaining constant voltage (for driving ferroelectric and piezoelectric transducers). A mode switch for selecting one or the other modes is included.

3,445,751

CURRENT LIMITING VOLTAGE REGULATOR

Finis C. Easter, Canoga Park, Calif., assignor to Radio Corporation of America, a corporation of Delaware

Filed Nov. 25, 1966, Ser. No. 596,875
Int. Cl. G05f 3/02
U.S. Cl. 323—9 1 Claim



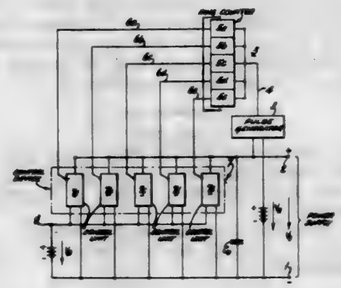
A voltage regulator whose output voltage is constant up to overload or short circuit. This regulator however upon occurrence of overload or short circuit continues to supply a current to its load but at a reduced current and voltage so that the regulator, the source therefor or load will not be injured. Upon cessation of the overload, the voltage regulator returns to normal operation without attention from an operator. This is accomplished by causing the current taken by the load to take over control of the series voltage control transistor when the current is above overload value. Furthermore, since the current operated control is fed by the voltage appearing across the load, the current fed to the load decreases during overload as the voltage of the load decreases.

3,445,752

DIRECT CURRENT REGULATED POWER SUPPLY

Ivan Horvat, Wettingen, Switzerland, assignor to Patelhold Patentvertungs- and Elektro-Holding A.G. Glarus, Switzerland

Filed July 15, 1966, Ser. No. 565,555
Claims priority, application Switzerland, July 19, 1965, 10,087/65
Int. Cl. G05f 1/40, 1/52, 1/60
U.S. Cl. 323—22 4 Claims



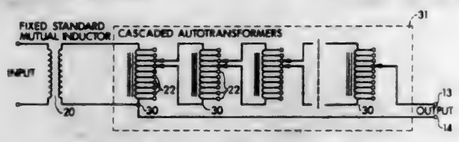
In a switching mode voltage regulator, a plurality of controlled rectifier switching devices consecutively and periodically apply predetermined charges from an auxiliary voltage source to a regulating capacitor shunting the main voltage source to be regulated. The switching devices are controlled each by one of the outputs of the stages of a ring counter having a counting frequency varying in proportion to the difference between the main source voltage and a reference voltage.

3,445,753

VARIABLE STANDARD MUTUAL INDUCTANCE CIRCUIT WITH AIR CORE TRANSFORMER AND TAP CHANGING CASCADED AUTOTRANSFORMERS

Emanuel Maxwell, Arlington, Mass., assignor to Massachusetts Institute of Technology, Cambridge, Mass., a corporation of Massachusetts

Filed Mar. 30, 1966, Ser. No. 538,723
Int. Cl. H02p 13/06; H02m 5/12
U.S. Cl. 323—43.5 8 Claims



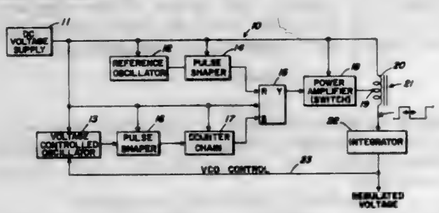
A variable standard mutual inductance circuit includes an air (or other low loss medium) core input transformer of high purity with the secondary winding connected to a Kelvin-Varley arrangement of high precision tap changing cascaded autotransformers on high permeability ferromagnetic toroidal cores. The combination may be used in a Hartshorn type bridge circuit including a null detector.

3,445,754

REFERENCE OSCILLATOR AND VCO LOOP CONTROLLED DC REGULATOR

Samuel L. Broadhead, Jr., 9800 Wallwood Road, SE., Huntsville, Ala. 35803

Filed Dec. 9, 1966, Ser. No. 600,606
Int. Cl. H02p 13/10
U.S. Cl. 323—45 7 Claims



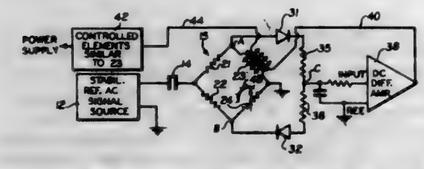
A DC voltage regulator with output regulation provided through a feedback loop from the output connected as a DC control input to a DC voltage controlled oscillator for adjusting AC output phase thereof relative to the AC signal of a reference oscillator with both resulting AC signals being applied to a flip-flop for control thereby of the energy content in the flip-flop signal output and in the signal being integrated to a DC output with the desired degree of DC voltage regulation.

3,445,755

CLOSED LOOP ELECTRIC CIRCUIT

Joseph H. Kiser, Stamford, Conn., assignor to Vari-L Company, Inc., Stamford, Conn., a corporation of Connecticut

Filed July 14, 1966, Ser. No. 565,264
Int. Cl. G01r 17/10
U.S. Cl. 323—75 6 Claims



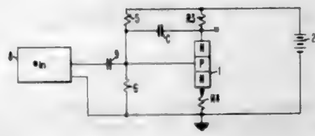
This circuit has a reference element on one side of a bridge, and the reference element has a compensating part through which a current can be passed to change the amount of impedance that the reference element provides. An adjustable impedance on the other side of the bridge is used to unbalance the bridge. This provides a voltage across the bridge of an amplitude dependent upon the degree of unbalance. This voltage supplies a current, through an amplifier, to the compensating part of the reference impedance and rebalances the bridge. Slave impedances of identical characteristics with the reference impedance have their compensating parts in series with the compensating part of the reference impedance of the bridge, and those changes in the adjustable impedance produce identical changes in the slave impedances.

3,445,756

CIRCUIT PROVIDING PHASE SHIFT WHICH IS VARIABLE WITH FREQUENCY

James J. Rooney, Jr., Vestal, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Dec. 7, 1966, Ser. No. 599,918
Int. Cl. H03l 11/00
U.S. Cl. 323—119 7 Claims



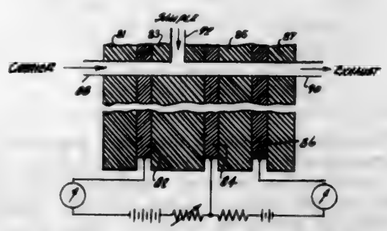
An improved circuit provides in one transistor amplifier stage a phase shift which varies from one hundred-eighty degrees to zero degrees as the frequency of the input signal varies from a selected lower limit to a selected upper limit. A Class A common emitter transistor amplifier includes emitter and collector resistors and a negative feedback capacitor connected directly between the base-collector electrodes. The values of the resistors and the capacitor are selected to provide the transfer function which achieves the variable phase shift as a function of input frequency. The preferred embodiment uses resistors of equal value whereby the gain characteristic of the circuit is unity throughout the entire range of phase shift.

3,445,757

CAPILLARY IONIZATION GAS DETECTOR AND ANALYZER USING TIMED INTERVAL CURRENT FLUCTUATIONS

Darwin Krucoff, Costa Mesa, Calif., assignor, by mesne assignments, to McDonnell Douglas Corporation, a corporation of Maryland

Filed Oct. 14, 1965, Ser. No. 496,113
Int. Cl. G01n 27/62; G01 11/44
U.S. Cl. 324—33 4 Claims



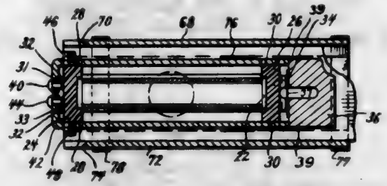
A capillary ionization gas detector and analyzer for use in gas chromatography techniques. Spaced conductive plates with a gas flow path therebetween ionizes gas flowing therethrough with a resulting current change when a gas impurity or sample of a different gas is passed.

3,445,758

PERMEABILITY-SENSING CONTROL SYSTEM THAT UTILIZES A PROBE WHICH HAS A MAGNET, A MAGNETOMETER, AND A GAP-CONTAINING PATH OF MAGNETIC MATERIAL SHUNTING AND CLOSE TO THAT MAGNETOMETER

Harold J. Barmeier, Jr., Sappington, and Norman Wolff, Olivette, Mo., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 1, 1965, Ser. No. 492,147
Int. Cl. G01r 33/02
U.S. Cl. 324—34 18 Claims



A permeability-sensing control system has a probe which includes a magnet, a magnetometer with energizing and sensing windings, and a path of magnetic material which is wholly separate from and in addition to the magnetometer. The magnetometer and the path of magnetic material are within the magnetic field developed by the magnet, are in substantial shunting relation with each other, have substantial portions of the lengths thereof coextensive with each other, and are sufficiently close to each other so a change in the reluctance of the path of magnetic material effects a change in the density of the magnet-induced flux lines in the magnetometer. The path of magnetic material has an air gap therein, and the positioning of that air gap in engagement with materials of different permeability will vary the reluctance of the path of magnetic material; and a circuit will respond to resulting changes in the density of the magnet-induced flux lines in the magnetometer to indicate a permeability value.

3,445,759

METHOD FOR DETECTING FLAWS, CRACKS AND NONHOMOGENEITY IN MATERIALS USING COMBINED PENETRANT AND MAGNETIC PARTICLE SYSTEMS

Maxwell Pevar, Philadelphia, Pa. (551 Shoemaker Road, Elkins Park, Pa. 19117)

No Drawing. Filed June 24, 1965, Ser. No. 466,811
Int. Cl. G01r 33/12
U.S. Cl. 324—38 10 Claims

A method for detecting and locating flaws in members is disclosed which combines the use of penetrant and magnetic particle systems. A penetrant is applied to the surface of the member and is absorbed by flaws. A developer is then applied to the member along with a strippable liquid plastic magnetic particle solution. The combined penetrant and magnetic particle record may then be removed and examined. In one embodiment the developer may be contained in the strippable liquid plastic magnetic particle solution.

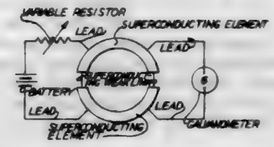
3,445,760

SUPERCONDUCTIVE MAGNETOMETER IN WHICH SUPERCONDUCTIVE ELEMENTS DEFINING A MAGNETIC CONDUIT ARE CONNECTED BY WEAK LINKS

James E. Zimmerman, Dearborn, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Mar. 9, 1966, Ser. No. 533,028
Int. Cl. G01r 33/02; H03k 3/38
U.S. Cl. 324—43 8 Claims

An instrument having the ability to detect and measure very weak magnetic fields in the submicrogauss range. A pair of superconductive elements defining a magnetic conduit therebetween are connected by a pair of superconducting weak links. The magnetic field in the conduit is determined by introducing electric current to the superconducting elements and measuring the voltage developed between these elements.

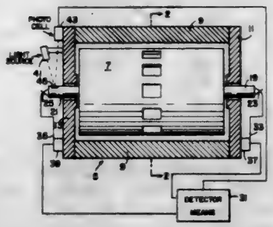


3,445,761

MAGNETIC FIELD INTENSITY METER

Aaron G. Lougbead, Huntsville, Ala., assignor to the United States of America as represented by the Secretary of the Army

Filed Sept. 22, 1965, Ser. No. 489,436
Int. Cl. G01r 33/02; G01c 19/34
U.S. Cl. 324—47 5 Claims



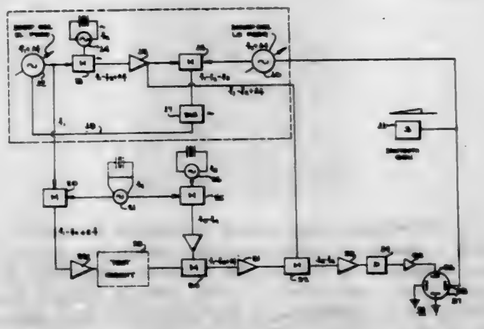
A magnetic field intensity meter for measuring sensitive magnetic fields without disturbing even the smallest field to be measured. An electrical coil is enclosed in a non-magnetic cylindrical rotor that is housed in a non-magnetic sleeve and has non-magnetic plates at each end. The ends of the coil are brought out at opposite ends of the rotor and connect to a photocell and detector means. Air jets around the rotor periphery spin the rotor when air is applied during operation of the meter.

3,445,762

FREQUENCY RESPONSE TESTING

William I. L. Wu, New Rochelle, N.Y., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey

Filed Mar. 13, 1963, Ser. No. 264,847
Int. Cl. G01r 23/14, 29/22, 27/00
U.S. Cl. 324—57 9 Claims



2. In a system for testing the frequency response characteristic of a system under test, means for generating a frequency scanning test signal ranging over the response

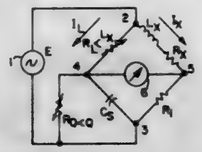
frequencies of said system under test, means for applying said test signal to said system under test and deriving therefrom a reponse signal of frequency equal to said test signal but of amplitude modified by said response characteristic, and heterodyne means responsive to said response signal for generating an invariable frequency signal for all frequencies of said frequency scanning test signal, said heterodyne means including a pair of frequency stabilized oscillators, said invariable frequency signal being responsive to said oscillators and equal in frequency to the difference of the frequencies of said oscillators.

3,445,763

DIGITAL READING IMPEDANCE MEASURING ARRANGEMENT

Samuel C. Harris, Jr., Waynesboro, Va., assignor to General Electric Company, a corporation of New York

Filed Oct. 6, 1965, Ser. No. 493,374
Int. Cl. G01r 27/16, 17/06
U.S. Cl. 324—57 14 Claims



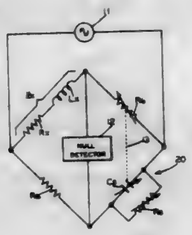
An impedance measuring arrangement comprising a plurality of circuits containing standard and unknown impedances. The output currents of said circuits are compared with a reference signal to produce respective control signals for operational amplifiers included in each of the circuits. Control of the gain of such amplifiers results in a digital indication being provided of the unknown impedance.

3,445,764

BRIDGE CIRCUIT WITH VARIABLE SCALE RATIO AND RESOLUTION

Anthony Tedeschi, Raytown, Mo., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 8, 1965, Ser. No. 512,456
Int. Cl. G01r 27/26, 11/52
U.S. Cl. 324—59 8 Claims



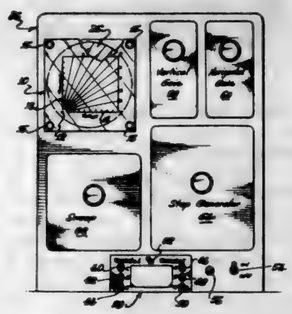
A conventional bridge circuit is modified by mechanically coupling a variable multiplier resistor to a balancing impedance so that as the balancing impedance is varied from a low value to a high value to balance the bridge, the multiplier resistor decreases so that each graduation on the balancing impedance readout scale between the low and high values is multiplied by a progressively decreasing factor to expand the scale and increase the resolution. Similarly, the coupling may be accomplished so that each graduation is multiplied by a progressively increasing factor to contract the scale.

3,445,765

APPARATUS FOR MEASURING RESISTANCE BETWEEN TWO NODES INCLUDING A TRANSPARENT MASK MOUNTED ON THE FACE OF AN OSCILLOSCOPE

Frank M. Schenstrom, Cupertino, Calif., assignor to General Dynamics Corporation, a corporation of Delaware

Filed Sept. 20, 1966, Ser. No. 580,680
Int. Cl. G01r 27/08, 13/20
U.S. Cl. 324—62 4 Claims



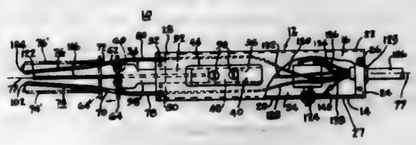
A transparent plastic sheet having a resistance graticule pattern of uniformly spaced reference lines inscribed thereon is mounted over the face of an oscilloscopic instrument and combined with an associated resistance chart to provide a rapid visual means for measuring resistance between two nodes, for example, in a transistor circuit network.

3,445,766

ELECTRICAL PROBE DEVICE HAVING A PLURALITY OF ADJUSTABLE CONTACTING ELEMENTS FOR TESTING TRANSISTORS AND THE LIKE

Edward G. Valliere, 2421 Brookdale Ave., Roslyn, Pa. 19001, and John M. Ostrander, 508 Drayton Road, Oreland, Pa. 19075

Continuation of application Ser. No. 194,874, May 15, 1962. This application May 16, 1966, Ser. No. 550,563
Int. Cl. G01r 31/02; H01r 13/52
U.S. Cl. 324—72.5 25 Claims



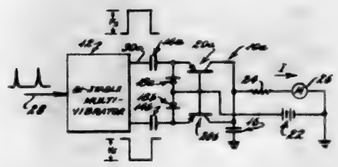
A test probe for transistors and the like including a hand held housing and three substantially parallel probe elements extending therefrom for contacting the device under test. A first control means comprising a manually controlled slidable collar adjusts the lateral distance between the contacting ends of two of the probe elements, and a second control means adjustably extends the contacting end of the third probe element relative to the first two probe elements.

3,445,767

PULSE RATE TO CURRENT CONVERTING AND LINEAR LOG INDICATING

Rex E. Beard, Santa Fe, N. Mex., assignor to Eberline Instrument Corporation, Santa Fe, N. Mex.

Filed Oct. 11, 1965, Ser. No. 494,574
Int. Cl. G01r 23/02, 11/00
U.S. Cl. 324—78 8 Claims



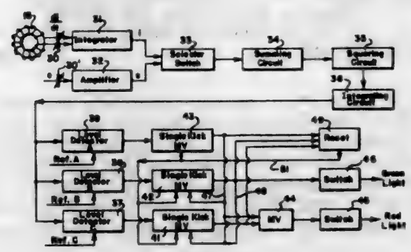
Random charges appearing on a multivibrator are converted to pulses of equal quantity, and these are fed to a first capacitor in series with an emitter of a transistor. The collector of the transistor is connected to a second capacitor. The base of the transistor is connected to a constant source of potential and, via a diode, to the junction between the first capacitor and the emitter. A resistor and series connected meter with linear scale indications bridge the second capacitor. The meter indicator is deflected linearly with increasing frequency until the potential at the collector of the transistor is equal to the potential source connected to the base of the transistor. Parallel operation of two or more of the basic circuits described above, each with a different range of frequency response and with the output currents added to the same meter movement will result in a compact arrangement with scales on the meter face divided into repetitive steps each step having a scale with equally spaced graduations.

3,445,768

POWER MONITOR, PARTICULARLY FOR WELDERS, BASED ON QUARTER-SQUARES COMPUTATION PROCEDURE

Hugo S. Ferguson, Averill Park, N.Y., assignor to Duffers Associates, Inc., Wynantskill, N.Y., a corporation of New York

Filed Apr. 22, 1964, Ser. No. 361,740
Int. Cl. G01r 7/00, 11/32; B23k 9/10
U.S. Cl. 324—142 10 Claims



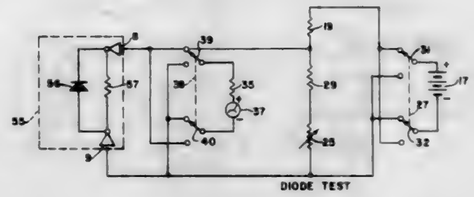
A power monitor, particularly for resistance welders, uses the relationship $v_p=(\frac{1}{2}v_1+\frac{1}{2}v_e)^2$. Input signals proportional to current and voltage are applied to a summing circuit and their amplitudes initially adjusted to equality. The sum is squared, and changes in the squared output from that corresponding to the initial values are detected. Preferably the squared signal is integrated until the integrated value equals the instantaneous value of the trailing edge of the signal, and selectable time constants are provided. Level detectors adjustable in opposite directions from predetermined levels are provided to facilitate establishing initial conditions and then a desired tolerance range.

3,445,769

METHOD AND APPARATUS FOR IN-CIRCUIT SEMICONDUCTOR CHARACTERISTIC MEASUREMENTS BY ESTABLISHING A PREDETERMINED VOLTAGE ACROSS THE SEMICONDUCTOR AND AN EXTERNALLY CONNECTED IMPEDANCE

Louis W. Erath, Houston, Tex., assignor to Test Equipment Corporation, Dallas, Tex., a corporation of Texas
Continuation-in-part of application Ser. No. 223,020, Sept. 12, 1962. This application Aug. 15, 1963, Ser. No. 302,356

Int. Cl. G01r
U.S. Cl. 324—158 14 Claims



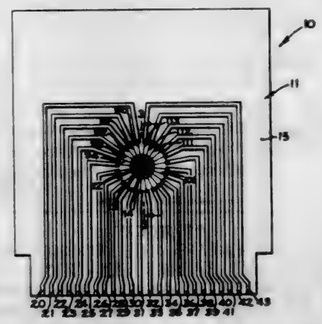
A method for measuring characteristic parameters of a semiconductor which comprises the steps of placing an impedance in shunt with the semiconductor so that the combined impedance has a predetermined value and thereafter measuring the desired parameter while selectively controlling the current flowing through the semiconductor.

3,445,770

MICROELECTRONIC TEST PROBE WITH DEFECT MARKER ACCESS

Richard C. Harmon, Campbell, Calif., assignor, by mesne assignments, to Philco-Ford Corporation, a corporation of Delaware

Filed Dec. 27, 1965, Ser. No. 516,560
Int. Cl. H02b; G01r 1/20
U.S. Cl. 324—158 1 Claim



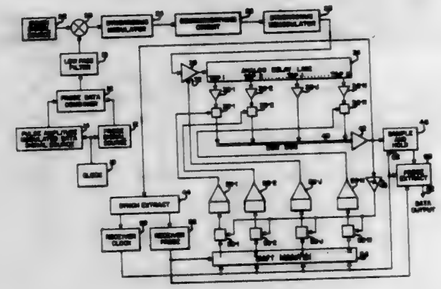
A microelectronic probe board comprises a base portion provided with an opening. Each of a plurality of conductor probes has its free end projecting into the opening. An electrically insulative sheet is supported by the base and extends over the opening. The insulative sheet includes a plurality of openings through which the free ends of the probes extend. A plurality of electrically

conductive strips are affixed to surface portions of the base, and are electrically connected to the probes.

3,445,771
AUTOMATIC DATA CHANNEL EQUALIZATION APPARATUS UTILIZING A TRANSVERSAL FILTER

Robert G. Clapham, Seattle, John B. Lord IV, Edmonds, and Harold G. Sullivan, Seattle, Wash., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed Feb. 28, 1966, Ser. No. 530,515
Int. Cl. H04b 1/10, 3/04
U.S. Cl. 325—42 6 Claims

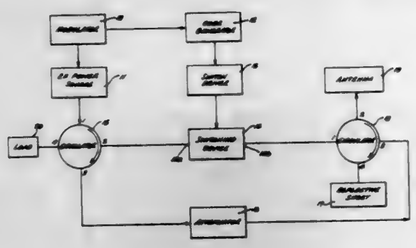


A technique and circuit for automatically providing equalization for distortion of signals through a communication circuit. This is accomplished utilizing a delay line which is continuously adjusted to provide a zero average output for all portions of a signal except that portion reaching a predetermined intermediate tap on the delay line. The technique as shown is implemented both in digital and analog versions.

3,445,772
RF PHASE SHIFT POWER CODER

William George Harmon, Torrance, and James L. de Wolf, Playa Del Rey, Calif., assignors to Hughes Aircraft Company, a corporation of Delaware

Filed Sept. 22, 1965, Ser. No. 489,260
Int. Cl. H04b 1/04; H03c 3/00; H01p 5/12
U.S. Cl. 325—126 12 Claims

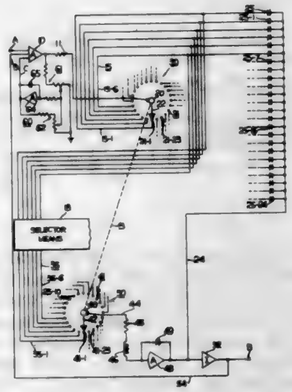


An RF power coding system, where, in one embodiment, the RF energy signal is applied to a first circulator which routes the RF energy signal to a voltage-controllable switching device capable of coding the RF energy signal. In a transmissive mode the RF energy passes through the switching device, while in a reflective mode the RF energy is reflected by the switching device. The nonreflected signal travels to the antenna via a second circulator, while the reflected signal travels a second path to the antenna via the first circulator, an attenuator, a phase shifting device and the second circulator.

3,445,773
TRANSPORT TIME DELAY UNIT

Charles H. Thomas, Brookfield, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

Filed May 6, 1966, Ser. No. 548,304
Int. Cl. H03k 21/08, 27/00
U.S. Cl. 328—121 7 Claims

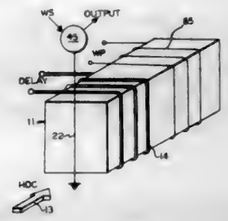


A transport time delay device for analog computer applications produces an output signal which is a selectively delayed reproduction of an input signal and has a summing amplifier which receives the input signal, rotary switch means for incrementally sampling the output signal from the summing amplifier and storing the samples upon a plurality of capacitors in a predetermined sequence, an integrating amplifier, rotary read-out switch means for transferring the samples after a predetermined time delay to the integrating amplifier in said predetermined sequence, and inverting amplifier means for providing a negative feedback second input signal to the summing amplifier to permit the capacitors to be charged only to the potential of the input signal.

3,445,774
ELASTIC WAVE DELAY AND PARAMETRIC AMPLIFIER

Richard A. Sparks, Bedford, Mass., and Edgar L. Higgins, Hyattsville, Md., assignors to Litton Systems, Inc., Silver Spring, Md., a corporation of Delaware

Filed Dec. 28, 1966, Ser. No. 605,480
Int. Cl. H03f 7/06; H03h 7/30
U.S. Cl. 330—4.6 3 Claims

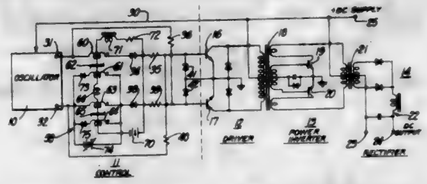


An integral adjustable delay and parametric amplifier employing elastic wave transmission in single crystals characterized by producing controllable delay and amplification wherein a continuous wave pumping signal is applied and the magnetic biasing of the crystal for amplification is provided at an angle of less than five degrees and greater than 1½ degrees.

3,445,775
MAGNETIC AMPLIFIER

Bruce L. Wilkinson, Torrance, Calif., assignor, by mesne assignments, to Varo Inc., Garland, Tex., a corporation of Texas

Filed May 8, 1967, Ser. No. 636,923
Int. Cl. H03f 9/00; H02p 13/12
U.S. Cl. 330—8 2 Claims

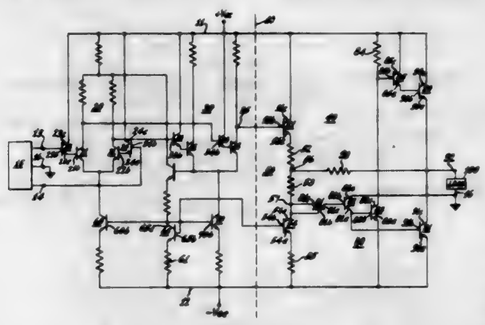


A magnetic amplifier having first and second cores, with two gate windings on each core and a control winding on both cores. A rectifier in series with a gate winding on the first core and another rectifier in series with a gate winding on the second core. A voltage source connected across the gate winding-rectifier series circuits of each core, with the voltage of the same polarity as the voltage which is induced in the gate winding during resetting of the core thereof, and with each of the rectifiers polarized to block current from the voltage source.

3,445,776
PHASE SPLITTING CIRCUIT FOR A DIRECT COUPLED PUSH-PULL AMPLIFIER

Arthur J. Leidich, Flemington, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Dec. 19, 1966, Ser. No. 602,774
Int. Cl. H03f 3/26, 1/08, 1/34
U.S. Cl. 330—15 6 Claims



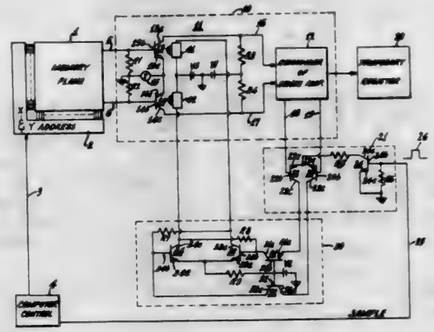
Direct coupled push-pull stage having a unique phase-splitting circuit in which an emitter follower drives both the inverting transistor and one push-pull transistor. The phase-splitting circuit has a low input insertion loss (or high overall gain) which enables the push-pull stage to have a relatively constant closed loop gain throughout an extremely wide range of load impedance values.

3,445,777
THERMAL FEEDBACK FOR STABILIZATION OF DIFFERENTIAL AMPLIFIER UNBALANCE

Juan J. Amodei, Levittown, Pa., assignor to Radio Corporation of America, a corporation of Delaware

Filed Sept. 24, 1965, Ser. No. 489,942
Int. Cl. H03f 1/32, 3/04
U.S. Cl. 330—23 17 Claims

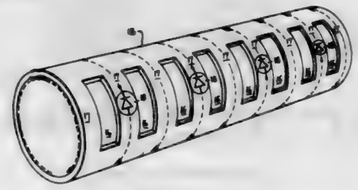
D.C. unbalance in a differential amplifier is corrected by a thermal feedback scheme from the differential outputs of the last stage to either one or the other of two heat producing elements which are associated with the transistors of the input stage. The D.C. unbalance is detected on a sample basis at the last stage output and depending on its polarity places a flip-flop in one or the other of its two states. The flip-flop outputs are connected so that one or the other of the heat producing elements is energized. The heat of the energized element increases the collector current of its associated transistor, thereby tending to correct for D.C. unbalance.



3,445,778
WALL CURRENT AMPLIFIER AND OSCILLATOR

Horst W. A. Gerlach, Bethesda, Md., assignor to the United States of America as represented by the Secretary of the Army

Filed June 25, 1965, Ser. No. 467,147
Int. Cl. H03f 3/58, 3/10, 3/12
U.S. Cl. 330—43 12 Claims



This disclosure describes a traveling wave amplifier that utilizes an array of tunnel diodes in the sidewalls of a cylindrical waveguide. The diodes are oriented either perpendicular or parallel to the axis of the waveguide and are located so that each conducts a fractional part of the wall current. When biased into their negative resistance regions, the diodes pump microwave energy into the waveguide thereby providing fast wave amplification. By placing a shorting plate or sliding short in one open end of the waveguide a quarter wave resonator is produced converting the device into a wall current oscillator.

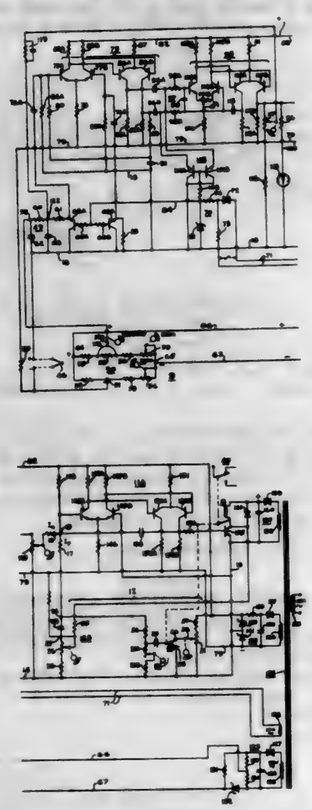
3,445,779
CONTROLLERS OF THE DURATION-ADJUSTING TYPE WITH ELECTRICAL SNAP-ACTION

Thomas J. Walsh, Hatboro, Pa., assignor to Leeds & Northrup Company, Philadelphia, Pa., a corporation of Pennsylvania

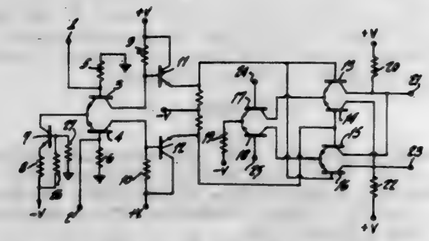
Filed Mar. 29, 1966, Ser. No. 538,415
Int. Cl. H03g 1/00; H03f 3/04
U.S. Cl. 330—51 11 Claims

A controller of the duration-adjusting type algebraically adds a DC signal current and a pulsating feedback signal current at the input of an amplifier. A relay is connected to the output of the amplifier to control the load. The relay also controls the pulsation of the feedback

signal by periodically controlling the charging and the discharging of a reactive impedance and periodically adding and subtracting the voltage across a snap-action resistor to and from the feedback signal.

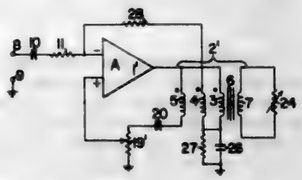


3,445,780
DIFFERENTIAL AMPLIFIER
Howard R. Beelitz, Kingston, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed May 27, 1966, Ser. No. 553,437
Int. Cl. H03f *1/08, 21/00*
U.S. Cl. 330—69 4 Claims



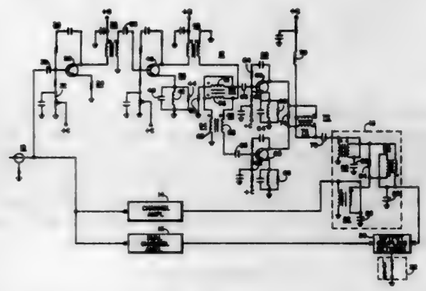
A signal steering circuit for input signals of the same polarity from two different sources. Two transistorized differential amplifier stages are provided in which each input signal is applied to the base electrode of one transistor in each stage. A third differential amplifier stage has one output connected to the emitter electrodes in the first stage and has a second output connected to the emitter electrodes of the second stage. Control signals applied to the third stage provided a return path therethrough for the first stage or second stage emitter current, selectively.

3,445,781
TEMPERATURE COMPENSATED TRANSFORMER CIRCUIT
Henry O. Wolcott, Chatsworth, Calif., assignor to Optimation, Inc., Sun Valley, Calif., a corporation of California
Filed Feb. 23, 1968, Ser. No. 707,826
Int. Cl. H03f *1/34, 1/00*
U.S. Cl. 330—104 8 Claims



A circuit compensating for the variation loss in the secondary of a transformer under load, such as occasioned by changes in temperature. A canceler winding is intimately wound with the primary of the transformer and acts to reduce negative feedback on an amplifier energizing the transformer. Negative feedback may be originated by a tertiary winding also having close coupling to the primary. The resistivity of the wire of the secondary winding with respect to that of the primary is made directly proportional to the ratio of the number of turns of the secondary to the number of turns of the primary. The compensation obtained is independent of the value of the load on the secondary.

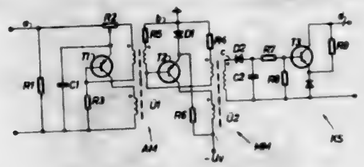
3,445,782
HIGH-POWER AMPLIFIER UTILIZING HYBRID COMBINING CIRCUITS
Ronald M. Sonkin, Pittsford, N.Y., assignor to General Dynamics Corporation, a corporation of Delaware
Filed July 28, 1966, Ser. No. 568,550
Int. Cl. H03f *3/68, 3/04*
U.S. Cl. 330—124 6 Claims



A high-power amplifier is disclosed which has linear frequency and phase characteristics over the entire high frequency radio band. Many individual low power transistor amplifier stages having inputs and outputs are used. Hybrid circuits combine the outputs of different pairs of stages. Coupling networks containing hybrid circuits in turn couple different pairs of the combined outputs to provide set outputs. An output coupling network, also containing a hybrid circuit, combines the set output. Thus,

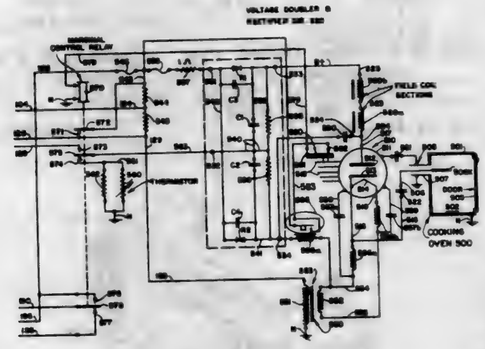
should any amplifier stage fail, the power output will be reduced, but the waveform integrity and power outputs of the remaining stages will not be altered.

3,445,783
CIRCUIT ARRANGEMENT FOR THE ELECTRONIC SIMULATION OF A TELEGRAPH RELAY
Heinz Roos, Stuttgart-Zuffenhausen, and Hans Semle, Korntal, Germany, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 17, 1965, Ser. No. 480,314
Claims priority, application Germany, Aug. 22, 1964, St 22,574
Int. Cl. H03b *19/12*; H03k *3/30*
U.S. Cl. 331—51 7 Claims



Electronic means are provided for simulating the characteristics of a telegraph relay. The means include a first oscillator controlled by input pulses which in turn controls a second oscillator which in turn provide control for a contact arrangement.

3,445,784
ULTRA-HIGH FREQUENCY CONTROL AND POWER SUPPLY SYSTEMS
James E. Staats and Robert D. Ogburn, Louisville, Ky., assignors to General Electric Company, a corporation of New York
Continuation-in-part of application Ser. No. 569,006, July 27, 1966. This application Oct. 19, 1967, Ser. No. 676,584
Int. Cl. H03b *9/10*
U.S. Cl. 331—86 28 Claims



There is disclosed an ultra-high frequency control and power supply system for a crossed-field discharge device, such as a magnetron, having a pair of input terminals and a pair of output terminals and characterized by the production of an ultra-high frequency A.C. voltage across the output terminals in response to the application of a D.C. voltage across the input terminals; the system includes a voltage doubler and rectifier circuit and an impedance, preferably a thermistor, having a start condition and a run condition and being automatically converted from its start condition into its run condition in response to the conduction of a predetermined amount of energy through the device, a preferred circuit also incorporating a mangetic switch responsive to the current flowing through the device for selectively adding and withdrawing another impedance in the circuit; and there is also disclosed a bypass capacitor across the terminals of the device for aiding the starting thereof.

3,445,785
LASER SYSTEMS AND THE LIKE EMPLOYING SOLID LASER COMPONENTS AND LIGHT-ABSORBING CLADDINGS
Charles J. Koester, South Woodstock, and Edgar O. Dixon, East Woodstock, Conn., and Elias Snitzer, Sturbridge, Mass., assignors, by mesne assignments, to American Optical Company, Southbridge, Mass., a corporation of Delaware
Filed Aug. 5, 1963, Ser. No. 299,794
Int. Cl. H01s *3/06, 3/16*; G02b *5/14*
U.S. Cl. 331—94.5 1 Claim



Elongated laser components of solid materials having side walls clad with selectively absorbing light-transmitting solid materials of substantially the same refractive indices as the components for providing increased operating efficiencies.

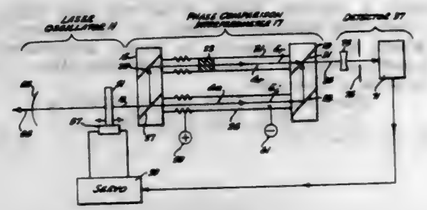
3,445,786
CRYOGENICALLY COOLED ELECTRO-OPTICAL APPARATUS
Carl R. Snyder, Edison, and Walter D. Binelli, Pottstown, Pa., assignors to Philco-Ford Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Feb. 9, 1965, Ser. No. 431,308
Int. Cl. H01s *3/04*; H01j *7/24*; F25b *19/00*
U.S. Cl. 331—94.5 3 Claims



Cryogenically cooled electro-optical apparatus includes an outer tubular shell of thermally and electrically insulative material having a reentrant portion forming an inner, coaxial tubular shell spaced from the outer shell and coextensive with a substantial portion of the outer shell. The shells have axially spaced end apertures presented in the same direction. A first sealing disk extends over the end aperture of the outer shell and a second sealing disk extends over the end aperture of the inner shell. A radiant energy transmissive window is provided over an opening in a lateral wall portion of the outer shell opposite the sealing disk for the inner shell. The second sealing disk supports an electro-optical device, such as a laser, in optical alignment with the energy transmissive window. Cryogenic cooling means for the laser is introduced into

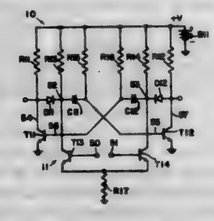
the bore of the inner shell and in high thermal exchange relation with the second sealing disk upon which the laser is disposed.

3,445,787
TUNABLE, FREQUENCY STABILIZED LASER
David F. Hotz, San Diego, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Aug. 1, 1966, Ser. No. 569,310
Int. Cl. H01s 3/10
U.S. Cl. 331—94.5 5 Claims



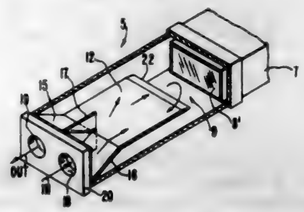
1. A tunable, frequency stabilizer laser oscillator comprising:
- a tunable single mode laser oscillator capable of producing at least one output laser beam of optical frequency energy;
- a phase comparison interferometer wherein said output laser beam is split into two components propagating along different paths before being recombined as an output signal beam, only one of said paths being capable of amplifying that component of said laser beam propagating therethrough, the other of said paths including an optical phase modulation element through which the other component of said beam propagates;
- means for detecting the intensity of said output signal beam and for providing a DC output signal directly related to the intensity of said output signal beam; and
- means coupled to said laser oscillator and said DC output signal for tuning the frequency of said output laser beam produced by said laser oscillator in accordance with the amplitude and polarity of said DC output signal.

3,445,788
PULSE-WIDTH MODULATION CIRCUITS
Hans R. Camenzind, Lexington, Mass., assignor to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware
Continuation of application Ser. No. 592,849, Nov. 8, 1966. This application Apr. 12, 1968, Ser. No. 721,123
Int. Cl. H03k 3/281
U.S. Cl. 331—113 25 Claims



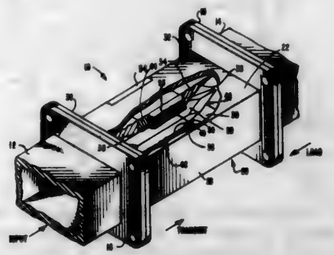
A transistorized astable multivibrator having a capacitor-controlled duty cycle with diode-aided capacitor charging is connected to a differential control circuit for variation of the duty cycle according to a double-ended signal. The signal is coupled to the bases of a pair of transistors whose emitters are connected to a common current path and whose collectors are connected to the timing capacitors. A pair of resistors couples the collectors to a power source. A monostable form uses a single-ended input signal fed to a control circuit connected to a single timing capacitor.

3,445,789
HIGH-POWER WAVEGUIDE WATERLOADS FOR R.F. ENERGY
Giordano D. Rossini, Mountain View, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed June 29, 1967, Ser. No. 649,925
Int. Cl. H01p 1/26
U.S. Cl. 333—22 3 Claims



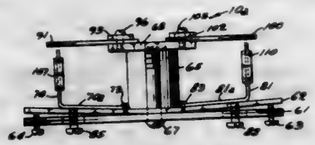
An improved waveguide waterload for R.F. energy, preferably in the microwave spectrum is realized by introducing an H-plane septum into the waterload flow chamber portion of the waterload such that the coolant liquid flow pattern is turbulent in the vicinity of the downstream end portion of the window. The reactive effects of the H-plane are minimal in comparison to an E-plane septum with a resultant low V.S.W.R. for the waterload in conjunction with an extremely compact design which is particularly suitable for use anywhere in the microwave spectrum.

3,445,790
FERRITE WAVEGUIDE DEVICE HAVING MAGNETIC RETURN PATH WITHIN THE WAVEGUIDE
Cyril B. Schneider, Oxnard, Calif., assignor to E & M Laboratories, a corporation of California
Filed July 15, 1966, Ser. No. 565,527
Int. Cl. H03h 5/06 7/38
U.S. Cl. 333—24.1 14 Claims



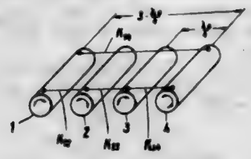
Ferrite microwave devices of compact external size are provided by an arrangement incorporating permanent magnets and magnetic path members as parts of or within the waveguide walls. In a rectangular waveguide, the waveguide interior is reduced in height through the use of transition sections within which permanent magnets are disposed in each broad wall of the waveguide. A magnetic return path disposed within an adjacent narrow wall of the waveguide completes the magnetic flux path which internally extends through the ferrite element. Temperature compensation is selectively provided through the use of ferromagnetic elements within the wall member and adjacent the permanent magnets. Undesirable resonance and increased bandwidth in ferrite microwave devices generally are minimized through the employment of an improved dielectric slab. The slab is configured to have minimum thickness at its edges which abut the waveguide walls and a smooth transition along the electric field lines to an intermediate thickness providing a desired total volume of dielectric material.

3,445,791
REED TYPE AUDIO FILTER
Thomas W. Holden, 301 W. 16th Place, Chicago Heights, Ill. 60411
Filed June 14, 1965, Ser. No. 463,751
Int. Cl. H03h 9/00
U.S. Cl. 333—71 7 Claims



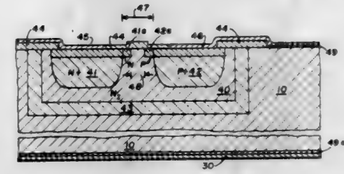
An audio frequency band pass filter which includes a base support, a plate of magnetic material carried on the base for movement relative thereto, and at least two reeds of magnetic material having their free ends extending over the base support and adjustable to be resonant at different frequencies. A pair of magnetic coils are secured to respective ones of a pair of core members which are secured to the base plate. Adjusting means are provided to adjust the position of each of the core members of the coils independently one from the other, and additional adjusting means is provided to adjust the cores of the coils simultaneously.

3,445,792
MECHANICAL FREQUENCY FILTER WITH ADDITIONAL COUPLING TO INCREASE SLOPE OF DAMPING RISE
Manfred Börner and Jürgen Spitzner, Ulm (Danube), Germany, assignors to Telefunken Patentverwertungs-G.m.b.H., Ulm (Danube), Germany
Filed June 28, 1963, Ser. No. 291,398
Claims priority, application Germany, June 28, 1962, T 22,382
Int. Cl. H03m 7/10
U.S. Cl. 333—71 9 Claims



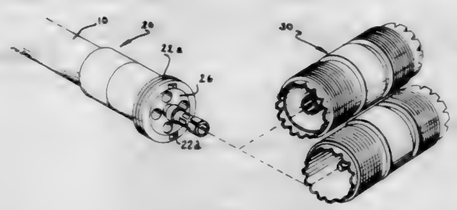
1. A mechanical frequency filter, comprising, in combination: at least three similarly constructed resonators; mechanical coupling lines connecting adjacent resonators; and coupling means mechanically coupling two resonators which are not adjacent to each other for providing dips in the filter characteristic; the coupling lines which connect adjacent resonators having approximately equal lengths and said coupling means coupling resonators which are spaced from one another by a distance which is approximately an odd multiple of the coupling line length between adjacent resonators.

3,445,793
HIGH FREQUENCY STRIP TRANSMISSION LINE
James R. Biard, Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Sept. 18, 1964, Ser. No. 397,492
Int. Cl. H01p 3/08
U.S. Cl. 333—84 9 Claims



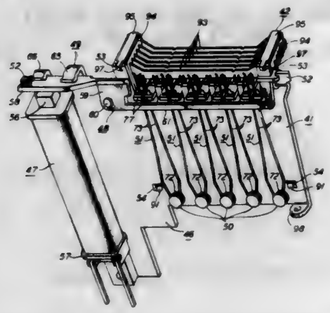
In the disclosed high frequency device contact is provided between a high resistivity semiconductor substrate and a conductive ground plane on one surface and a stripline conductor on the opposite surface. A smooth boundary is provided between the surfaces of the substrate and the ground plane and stripline conductor respectively by disposing a predetermined metallic film intermediate the substrate surfaces and the ground plane and stripline conductor respectively.

3,445,794
COAXIAL CONNECTOR PLUG AND RECEPTACLE ASSEMBLY
Michael Francis O'Keefe, Mechanicsburg, and John Changnien Fan, New Cumberland, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Continuation-in-part of application Ser. No. 486,360, Sept. 10, 1965. This application Dec. 22, 1965, Ser. No. 515,572
Int. Cl. H01p 1/24
U.S. Cl. 333—97 3 Claims



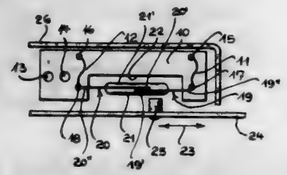
A connector device for coaxial cable is taught which features a coaxial plug for use with coaxial receptacles, the plug including a center contact member having an outer diameter and an outer contact surface to be engaged within a center contact member of a receptacle and also including means yieldable in a radial sense and an inner contact surface to alternatively receive inserted therein a center contact member of a different complementary receptacle. The plug includes an outer conductive shell and a center contact member held therein by a dielectric insert with the plug being dimensioned to provide a match to the characteristic impedance of a given cable and also dimensioned to make the plug mateable with a receptacle of a different and lesser characteristic impedance.

3,445,795
CROSSBAR SWITCH
Richard P. Holtfreter, Pickerington, and Harold E. McCullough, Hilliard, Ohio, assignors to Bell Telephone Laboratories, Inc., Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Oct. 2, 1967, Ser. No. 672,071
Int. Cl. H01h 67/14, 67/02, 63/02
U.S. Cl. 335—112 23 Claims



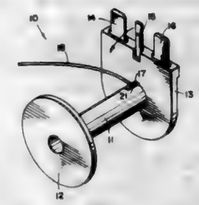
In this crossbar switch a number of unitary and select units are assembled on a frame. Each hold unit comprises three detachably mounted assemblies, viz., a hold magnet assembly, a moving contact assembly and a fixed contact assembly. The hold magnet assembly includes a rotatable armature regulating bracket and a number of finger units. The moving contact assembly includes wire spring contacts arranged in card operated crosspoints. Each finger unit is mounted so as to control two crosspoints. The select units include rocker type select bars, threaded cores and notched bobbins.

3,445,796
ARRANGEMENT FOR SIGNALLING MOVEMENT OF A MEMBER BY MEANS OF A MAGNET MOVABLE PAST A REED SWITCH
Franz Spiroch, Frankfurt, Siegfried Kolless, Neuenhain, Taunus, and Heinz Pons, Walldorf, Hesse, Germany, assignors to Eichner Organisation G.m.b.H., Frankfurt am Main, Germany
Filed Oct. 21, 1966, Ser. No. 588,475
Claims priority, application Germany, Oct. 23, 1965, E 30,352
Int. Cl. H01h 9/50, 1/66; H02b 1/04
U.S. Cl. 335—205 8 Claims



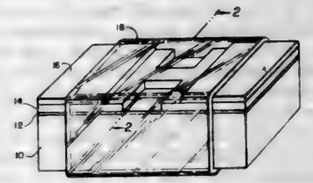
An arrangement for signalling the movement of a member by moving a magnet fixed to the member past a gas switch including a gas-tight envelope and a pair of resilient switch blades of magnetizable material in the envelope, which blades have overlapping ends normally spaced from each other and moving in engagement with each other when subjected to the magentic field of the magnet during movement of the latter from a rest position to an active position closely adjacent to the overlapping ends of the switch blades so that the movement of the member may be signalled by means in circuit with the gas switch.

3,445,797
INDUCTOR COIL AND BOBBIN WITH TERMINALS
William C. Otto, Indianapolis, Ind., assignor to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware
Filed Mar. 16, 1967, Ser. No. 623,715
Int. Cl. H01f 15/10, 27/30
U.S. Cl. 336—192 15 Claims



A coil bobbin providing an electrical coil wherein the wire attaching terminals and the electrical terminals are unitarily constructed and wherein the wire terminates entirely within the coil.

3,445,798
SHORT-TIME MELTING FUSE
Dieter R. Lohrmann, 348 Grant Ave., Eatontown, N.J. 07724
Filed Aug. 4, 1967, Ser. No. 658,990
Int. Cl. H01h 85/14
U.S. Cl. 337—227 1 Claim



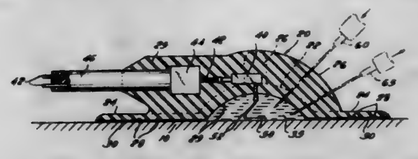
A short-time melting fuse is provided comprised of a base material having a top and bottom surface, the top surface of which is coated respectively with superimposed first and second thin layers. The distal ends of the second thin layer are terminated by electrical contacts. The base material is a good heat conductor. The first thin layer material is characterized by both thermal and electrically insulating properties, and the second thin layer material is an electrical conductor. In addition, the second thin layer material is shaped in the form of two end sections interconnected by a narrowed strip.

3,445,799
ELECTRIC WINDING PROTECTIVE MEANS
Bruce K. Slonneger, Dayton, Ohio, assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Oct. 17, 1966, Ser. No. 587,124
Int. Cl. H01h 37/04, 37/34, 37/52
U.S. Cl. 337—380 5 Claims



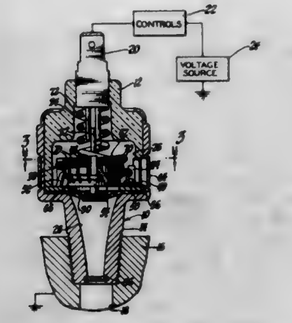
A housed thermostatic switch is located in a tube made of bias-woven metal strands. After insertion of the switch into the tube, the latter is stretched whereupon it contracts peripherally and conforms to the exterior shape of the switch housing to provide good thermal contact. The stretched form of the tube provides flexible portions extending from the switch, which are made flat for engagement with and conformation to motor windings to be protected. Conductive switch leads to the motor windings extend from the tube, either from the opening at one or the other flat end thereof, or through a side opening effected by working apart the strands of its bias weave. In the latter case a rigid tubular or channel-shaped pocket-forming member is located adjacent the opening so that a pocket is formed and switches may be interchanged therein. This rigid member may be located inside of the woven tube and held in place by stitching of the woven tube around the rigid member, or located outside of it and fastened by the holding ties which are used to hold the motor windings in place.

3,445,800
MEANS AND METHOD FOR WATERPROOFING STRAIN GAUGES
Charles P. Ambulos, Niantic, Albert H. Romboni, Mystic, and Bernard S. Willard, Jr., Oakdale, Conn., assignors to General Dynamics Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 28, 1966, Ser. No. 582,734
Int. Cl. G01l 1/22
U.S. Cl. 338—2 5 Claims



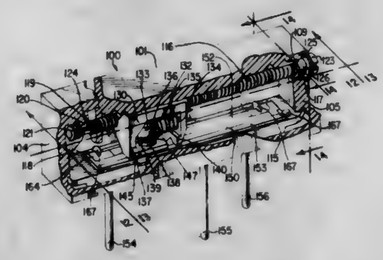
A means and method for waterproofing strain gauges under severe hydrostatic pressures is provided, comprising a hemispherical rubber or rubber-like boot placed over the strain gauge with a hemispherical cavity filled with a dielectric fluid surrounding the gauge itself. The fluid may be inserted in the cavity by means of a hypodermic needle. The hemispherical shape provides balanced stresses all around the boot.

3,445,801
CONDITION RESPONSIVE TRANSDUCER
Walter J. Sattler, Flint, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 29, 1966, Ser. No. 575,673
Int. Cl. H01c 13/00
U.S. Cl. 338—42 12 Claims



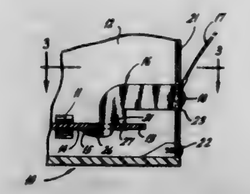
A transducer incorporating a pressure responsive, flexible diaphragm that alters the point of engagement between a multifingered contact ring and a wire-wound resistor and, accordingly, the effective resistance with pressure variations. The resistor is formed in a spiral and adjustably supported at different elevations on a calibration plate so that different pressure versus resistance relationships can be obtained.

3,445,802
ADJUSTABLE ELECTRONIC COMPONENT
Robert W. Spaude, Milwaukee, Wis., assignor to Allen-Bradley Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Aug. 16, 1967, Ser. No. 660,957
Int. Cl. H01c 5/02
U.S. Cl. 338—167 8 Claims



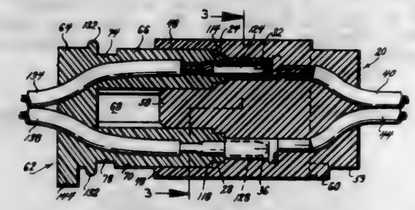
An adjustable electronic component wherein the electrical properties between two or more terminals may be varied and controlled, and including a resistance element such as a cermet layer, a contact brush, a movable actuator for the contact brush and means for moving the brush actuator in a parallel path relative to the resistance element. The brush actuator includes a cavity having an inclined surface for receiving the contact brush, an element having a rounded surface contacting the inclined surface of the actuator and resilient element interposed between the rounded member and the cavity surface opposite the inclined surface to urge the member with the rounded surface against the brush to thereby urge the brush towards electrical engagement with the resistance element.

3,445,803
ELECTRICAL APPARATUS
Henry E. Johnston, Huntingdon Valley, Pa., and Robert C. Simmons, Pennsauken, N.J., assignors to Philco-Ford Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Dec. 28, 1966, Ser. No. 605,467
Int. Cl. H05k 1/18; H01r 7/16
U.S. Cl. 339—17 2 Claims



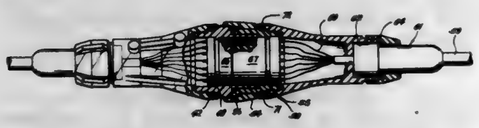
An antenna connector terminal adapted to be mounted on a radio receiver's printed circuit board, and to be dip soldered directly to a printed conductor on said board. A portion of the terminal extends through an aperture in the receiver's back panel and is provided with a conventional screw fastener for making connection to an antenna lead-in.

3,445,804
ELECTRICAL CONNECTOR
Edgar L. Perkins, Detroit, Mich., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 20, 1967, Ser. No. 632,333
Int. Cl. H01r 11/02, 13/20, 33/72
U.S. Cl. 339—62 15 Claims



The receptacle of an electrical connector has a base with a plurality of sockets therein, has a cylindrical wall extending forwardly from that base to define a recess, and has axially-extending ribs adjacent the inner face of that cylindrical wall; and the plug of that electrical connector has a plurality of resilient fingers with prongs projecting beyond the ends thereof and with flexible conductors embedded therein, and has relieved portions at the edges of the fingers thereof which can coact with the axially-extending ribs to automatically align the prongs with the sockets but which can move relative to those axially-extending ribs to permit precise registration of those prongs with those sockets.

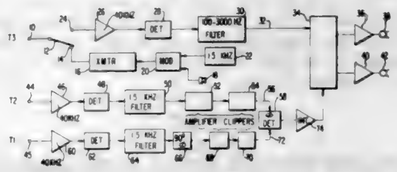
3,445,805
ELECTRICAL CONNECTOR
Kenneth W. McLoad, Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Filed May 18, 1967, Ser. No. 639,482
Int. Cl. H01r 13/54, 3/02
U.S. Cl. 339—89 1 Claim



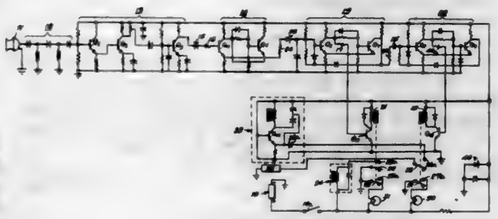
A waterproof cable connector housing is constructed entirely of a high impact clear plastic material to permit observation of a moisture indicating fluid within the housing. The housing is comprised of connector insert housings which are threadedly attached to cable connecting members. Deformable seals are positioned between the longitudinal ends of the insert housing and cable connecting members to permit selective compression of the seals when the housings and members are threadedly attached. Locking rings are provided to hold the threadedly attached parts in such a position compressing the seals.

3,445,806
APPARATUS FOR PROVIDING A DIVER WITH DIRECTIONAL PERCEPTION
John G. G. Band, North Miami Beach, Fla., assignor to Marine Acoustical Services, Inc., Miami, Fla.
Filed Jan. 3, 1968, Ser. No. 695,476
Int. Cl. H04b 13/00
U.S. Cl. 340—6 6 Claims

An underwater voice communication system which compensates for the difference in the speed of sound in water and in air so that a diver can perceive the true direction of an underwater sound wave. A remote 40 kHz. transmitter is modulated by both voice intelligence and a 1.5 kHz. tone. The diver's receiver detects the voice intelligence and applies it to a multiple tap delay line connected between the earphones in his helmet. The 1.5 kHz. pilot tone is separately detected by two spaced hydrophones to produce two electrical signals whose phase difference is used to generate a control voltage proportional to the difference between the times that the same point on the tone sound wave impinges upon the two hydrophones. The control voltage is applied to a voltage-controlled logic circuit which selects one of the taps on the delay line in accordance with the magnitude of the control voltage. The tap selected by the control voltage determines the relative phase shift and relative amplitude of the signals applied to the diver's two earphones. The relative phase and amplitude of the sound heard by the diver are thus corrected to the relative phase and amplitude which the diver would hear if the sound had traveled through air instead of water, thereby permitting the diver to perceive the true direction of the sound wave.

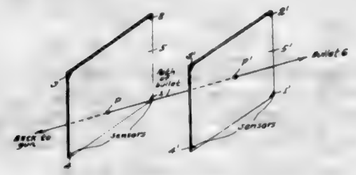


3,445,807
AIRBORNE ACOUSTIC GROUND FIRE DETECTOR
Kenneth A. Hirschberg, Saratoga, and John E. Boren, Monterey, Calif., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Nov. 16, 1967, Ser. No. 683,608
Int. Cl. H04b 11/00; G01s 3/80
U.S. Cl. 340—15 2 Claims



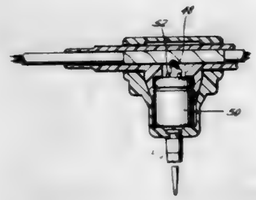
Airborne apparatus for detecting and indicating both visually and aurally the passage of acoustic energy associated with supersonic projectile consisting of a microphone mounted on an external surface of the aircraft for detection and conversion of the acoustic energy to electrical signals which are amplified and applied to a Schmitt trigger which in turn triggers a one-shot multivibrator having two outputs. One of the outputs functions a relay which connects an electronic counter, counting once for each projectile within range of the apparatus, and a counting lamp, flashing once for each said projectile, across a power supply. The other of the outputs is coupled to another one-shot multivibrator having its output connected to a relay which responds thereto to connect an audio frequency generator to the aircraft's intercom system and to connect a warning lamp across the power supply thereby providing both aural and visual indications.

3,445,808
SMALL ARMS LOCATOR
Fred P. Johnson, Pittsfield, Mass., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Apr. 5, 1968, Ser. No. 719,137
Int. Cl. G01s 3/80
U.S. Cl. 340—16 5 Claims



The direction of a bullet is ascertained by comparing the points at which it passed through two planes. Each point is pinpointed instantly by comparing the time element required for a sound, generated as the bullet passes through the plane, to reach various microphones at preselected points in each plane.

3,445,809
GEOPHONE HOUSING AND TAKE-OUT
Kenneth W. McLoad, Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Continuation of application Ser. No. 610,891, Jan. 23, 1967. This application July 12, 1968, Ser. No. 752,437
Int. Cl. G01v 1/16
U.S. Cl. 340—17 6 Claims



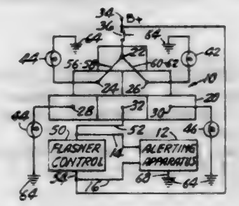
A geophone case is constructed to provide a fluid-tight environment for a geophone. The inside of the geophone case has an annular inwardly sloping surface which forms a seat for sealingly engaging a complementary surface on a rubber take-out molded about a seismic cable. The molded rubber take-out has an interior cup portion for receiving a geophone therein. Sealing ribs are provided in the interior cup portion where it engages the geophone to provide a further fluid seal. A ground spike is threadedly attached to the geophone case but does not intersect the interior of the geophone case.

3,445,810
ALERTING APPARATUS
Daniel J. Donohoo, Shoreview, Minn.
(3175 Hafner Court, St. Paul, Minn. 55112)
Filed May 27, 1966, Ser. No. 553,570
Int. Cl. B60q 1/34
U.S. Cl. 340—56 10 Claims

1. Apparatus for alerting a driver to an operating uncancelled directional indicator for use with a vehicle directional signalling system comprising:

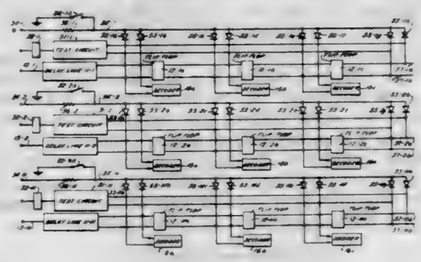
means responsive to actuation of a directional indicator for registering indicator operation over a predetermined time interval;

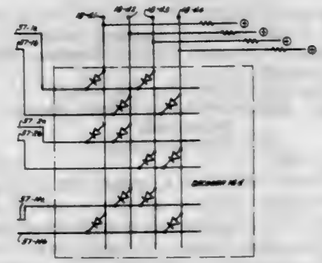
control means operatively coupled to said registering means and including a control circuit which is actuated when the indicator remains operative for said predetermined time interval, said control means resetting said registering means following actuation of said control circuit to immediately register a subsequent predetermined time interval, said control means including means for resetting said registering means when said directional indicator is cancelled before the end of a predetermined time interval; and



alerting means operatively coupled to said control means and responsive to actuation of said control circuit for producing a warning signal to alert said driver that said directional indicator is uncancelled, said alerting means producing said signal each time said control circuit is actuated by said registering means at the completion of each predetermined time interval.

3,445,811
ERROR SYSTEM FOR LOGIC CIRCUITS
Masao Hashimoto, Kanagawa Prefecture, and Akira Yamaguchi and Hironobu Nishimura, Kawasaki-shi, Japan, assignors to Fujitsu Limited, Kawasaki, Japan, a corporation of Japan
Filed Aug. 9, 1965, Ser. No. 478,285
Claims priority, application Japan, Aug. 10, 1964, 39/45,515
Int. Cl. G08b 29/00; G08c 25/00
U.S. Cl. 340—146.1 12 Claims

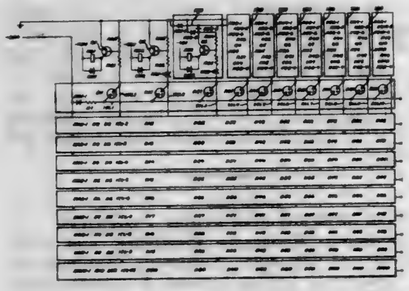




An error system comprises a logic circuit having a plurality of components connected to each other. Each of the components normally functions to provide an output signal dependent upon an input signal in occurrence and in characteristic. A testing circuit connected to

a component of the logic circuit determines the output signal occurrence and characteristic and thereby provides a signal indicative of the operating condition of the component. A control circuit responsive to the testing circuit connects a source of blocking voltage to the output of each of the components of the logic circuit to provide a determined logical condition at the output of each of the components thereby blocking such components upon a determination by the testing circuit of improper operation of one of the components.

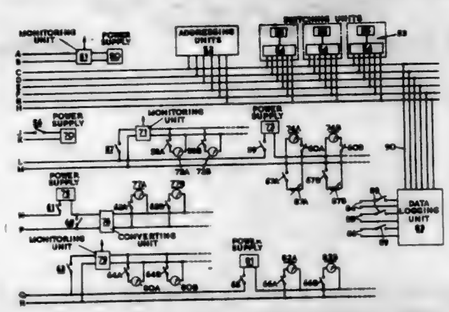
3,445,812
SEQUENCE CONTROL SYSTEM AND METHOD
Wallace Eugene Clarke, Belleville, Ontario, Canada, assignor to Northern Electric Company Limited, Montreal, Quebec, Canada
Filed Oct. 18, 1965, Ser. No. 496,872
Int. Cl. H04q *3/64;* **H04m** *3/38*
U.S. Cl. 340—147 **18 Claims**



A request for an operation to be performed in indicated by connecting an input control line to a voltage datum. When the number of requests exceeds the number of means to perform the requested operation, the input control lines are connected with sequence control lines in order of priority, the priority being determined by the length of time a connected input control line has remained connected. Whein an input control line is connected to a sequence control line of highest priority, the operation is performed and the input control line is disconnected. An input control line may become disconnected from a sequence control line to connect to one of next higher priority or because of disconnection of the datum potential indicating withdrawal of the request. In the latter case priority is lost and if the withdrawn request is renewed, the request starts at lowest priority.

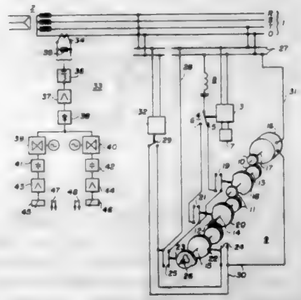
3,445,813
INFORMATION TRANSMISSION SYSTEM
Jack Richard Price, Stafford, England, assignor to The English Electric Company Limited, London, England, a British company
Filed June 2, 1965, Ser. No. 460,797
Claims priority, application Great Britain, June 10, 1964, 24,142/64
Int. Cl. H04q *9/00*
U.S. Cl. 340—150 **6 Claims**

The specification describes a system for transmitting analogue information signals between a central station and a plurality of out-stations via a single multi-conductor transmission cable having "address" conductors and "information" conductors. Information signal producing means (for example transducers) and storage means located at an out-station and the central station respectively are connected together as required through information conductors of the cable and two switching means disposed at the respective stations. These switching means are controlled by out-station address decoders which respond only to a predetermined unique combination of electric potentials which are applied to the address conductors when required by an address signal producing means located at the central station. All of the electric



power required for driving the switching means, the address decoders, and the respective analogue information signal producing means at the out-stations is supplied from a source located at the central station through conductors of the cable.

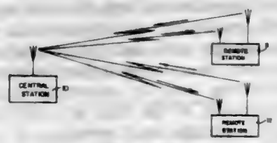
3,445,814
SYSTEM FOR INTERROGATING REMOTE STATIONS VIA POWER LINES OF AN ELECTRICAL DISTRIBUTION NETWORK
Alfred Spälti, Zug, Switzerland, assignor to Electrometre SA, Zug, Switzerland, a corporation of Switzerland
Filed Mar. 24, 1964, Ser. No. 354,254
Int. Cl. H04q *9/02, 9/06*
U.S. Cl. 340—151 **24 Claims**



A power line communication system including transmitters with resonant circuits periodically connected to the power line according to a predetermined time sequence so as to provide a redundant, amplitude modulated signal. Apparatus is associated with the transmitter for changing the modulation frequency in accordance with commodity consumption. Receiver equipment coupled to the power line is tuned to the fundamental frequency of the transmitted signal and is arranged to detect the amplitude modulation.

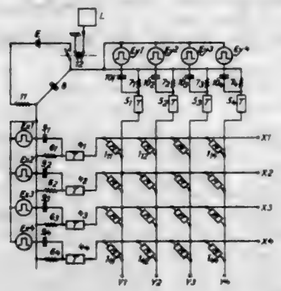
3,445,815
CENTRAL TO REMOTE STATION SIGNALLING SYSTEM
Theodore Saltzberg, Chicago, and Richard N. Terry, Addison, Ill., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Sept. 27, 1965, Ser. No. 490,353
Int. Cl. H04q *9/16*
U.S. Cl. 340—163 **11 Claims**

A binary sequence is generated to be used as an address coding system for identifying a particular remote station to be controlled. The remote stations are identified by subsequences having fewer bits than the entire sequence and the entire sequence is so constructed that no subsequence is



repeated in the sequence. Thus an identifying code of a large number of bits for security purposes can be used to address each station yet only a single additional bit need be transmitted to address each subsequent station.

3,445,816
ARRANGEMENT FOR CONNECTION OF AT LEAST TWO CONDUCTORS
Karl Polasek, Hagersten, Sweden, assignor to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden
Filed June 9, 1965, Ser. No. 462,632
Claims priority, application Sweden, Aug. 7, 1964, 9,578/64
Int. Cl. H04q
U.S. Cl. 340—166 **11 Claims**

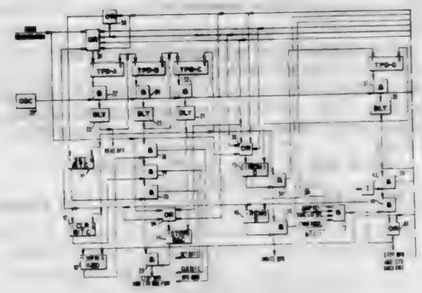


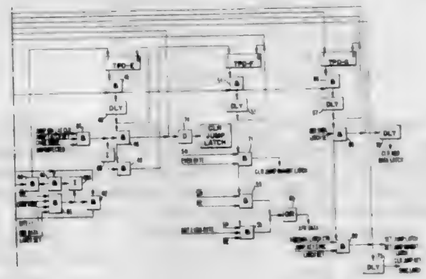
A switch for connecting two conductors comprises a voltage and current waveform sensitive memory device serially connecting the two conductors and a switching control circuit connected in parallel with the memory device. The switching control circuit includes controllable voltage sources and a voltage and current waveform sensitive switching device. Both the memory device and the switching device assume high or low ohmic states in accordance with the waveforms of the voltage and currents applied thereto.

3,445,817
META-CYCLIC COMMAND GENERATOR
Tony N. Criscimagna, Woodstock, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed July 15, 1966, Ser. No. 565,604
Int. Cl. G11b *13/00*
U.S. Cl. 340—172.5 **6 Claims**

A command generator or clock which changes its operation to suit different sets of operating parameters is disclosed. Each of a plurality of selectively interconnected bistable circuits may control one or more unique machine functions. These circuits are periodically strobed to initiate the ordered function or functions. Bistable circuits of a second group are responsive to predetermined operational conditions of the controlled machine and to selected first bistable circuits and are utilized to further define the functions of selected first bistable circuits. A third group of

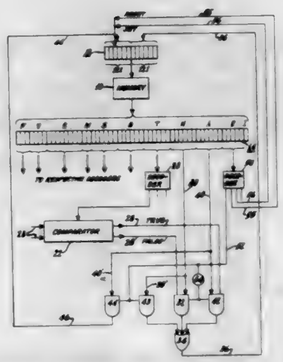
bistable circuits, also responsive to operational conditions of the controlled machine and to predetermined first bi-





stable circuits, are provided for selectively changing the subsequent command sequence.

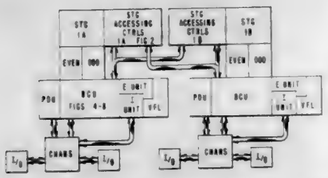
3,445,818
MEMORY ACCESSING SYSTEM
Richard H. Yen, Cherry Hill, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Aug. 1, 1966, Ser. No. 569,470
Int. Cl. G11b *13/00*
U.S. Cl. 340—172.5 **5 Claims**



A random-access memory system in which each stored word contains information used in determining the next word to be accessed. The next address field of each stored word contains only enough bits to access any word in the memory. Half of the next address field is normally used to provide a next address in a nearby part of the memory. The other half of the next address field is used on the occurrence of a branching condition in the computer to provide an alternate next address in a nearby part of

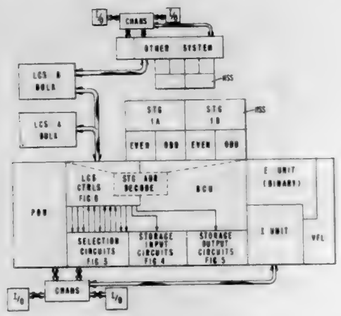
the memory. Both halves of the next address field are used to provide a next address in many more remote part of the memory.

3,445,819
MULTI-SYSTEM SHARING OF DATA PROCESSING UNITS
James C. Cooper, Atlanta, Ga., and William P. Wissick, Rhinebeck, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Aug. 3, 1966, Ser. No. 569,856
Int. Cl. G11b *13/00*
U.S. Cl. 340—172.5 **15 Claims**



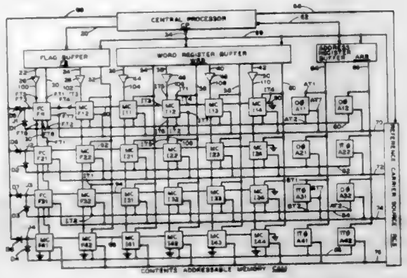
The invention is predicated on concepts which include the fact that an independent unit, such as a storage device, will at times need to be available to a system on an unshared basis, and that the various systems which may be sharing such devices are not easily connected into a single asynchronous clocking arrangement for the controlling of both systems. Although the invention may be utilized with an sort of independent device, or service device, reference thereto hereinafter is made with respect to a storage device, as an example, for simplicity.

3,445,820
OVERLAPPED AND UNDERLAPPED ACCESSING OF MULTI-SPEED STORAGE DEVICES
William P. Wissick, Sunnyvale, Calif., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Nov. 10, 1966, Ser. No. 593,439
Int. Cl. G11b *13/00*
U.S. Cl. 340—172.5 **10 Claims**



Disclosed is a data processing system including a central unit and a plurality of service units, such as data storage devices, wherein the service units may have different operating speeds. Communications between the central unit and the service units are interleaved, that is, communications with a first one of the service units is not completed when communications with a second one of the service units begins. The interleaved communications are of two types called overlapping, where the order with which communications between central and service units terminate is the same order with which the communications began and underlapping, where communications between the central unit and a second service unit begin after communications with a first service unit begin but terminate before communications with the first unit terminate. The communications with the service units are through a control unit which contains common paths between all of the service units and the central unit. The data processing system operates such that the service units themselves control the time of operating through the control unit independent of the time at which that control unit initiates a storage unit operation at accessing time. This independence of operation relegated to the service units allows a control unit to connect a plurality of service units having varying speeds to one or more central units and allows overlapping and underlapping without need for redesign of the control unit no matter what configuration of service units is selected. Service units which are given priority over other units (e.g. slow bulk store) themselves initiate inhibit signals which inhibit operations of those other units (e.g. high speed store) which would interfere with the communication of the unit having priority.

3,445,821
HIGH-SPEED NON-DESTRUCTIVE READ OUT CONTENTS ADDRESSABLE MEMORY AND ELEMENTS THEREFOR
Luther D. Rudolph, Manlius, Paul K. Blackwell, Jr., Peterboro, and Hugh A. Hair, Liverpool, N.Y., assignors to Research Corporation, New York, N.Y., a nonprofit corporation of New York
Filed Mar. 30, 1967, Ser. No. 627,260
Int. Cl. G11b *13/00*
U.S. Cl. 340—172.5 **38 Claims**

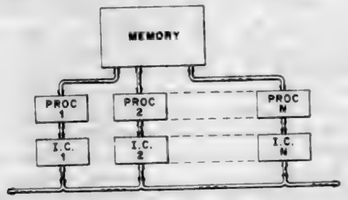


In a data processing system, a central processor operates in conjunction with a contents addressable memory. The contents addressable memory is word oriented and comprises a matrix of cells arranged in word lines (rows) and bit line columns. Each cell has three carrier signal terminals. Each row of the matrix is associated with a word storage register. The cells in each row are divided into sets of address cells, information bits storage cells, and flag bit cells. A flag register buffer interfaces the flag bit cells and the processor, a word register buffer interfaces the information bit storage cells and the processor and an address register buffer interfaces the address cells and the processor. Bit carrier signal lines connect the associated buffer and the first terminals of each cell in each bit line, respectively. A reference carrier-signal transmission line, connected to a source of carrier signals, is connected to the third terminal of each cell. Word carrier-signal transmission lines are connected to the second terminals of each cell in each word line, respectively.

Each of the information bit storage cells and each of the flag bit storage cells include controllable two-stable state phase shifting means. The stable states represent the logic value of the bits stored in the cells. Carrier signals

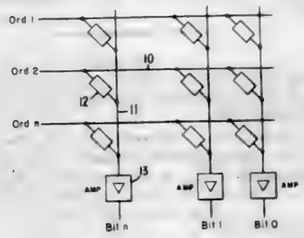
are transferred from the first terminal to the second terminal of the cells in accordance with the phase of the carrier signal received at the first terminal and the state of the phase shifting means; and carrier signals are transferred from the second terminal to the first terminal, the phase of the signals at the first terminal depend on the phase of the signals received at the second terminal and the state of the phase shifting means.

3,445,822
COMMUNICATION ARRANGEMENT IN DATA PROCESSING SYSTEM
Graham C. Driscoll, Yorktown Heights, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed July 14, 1967, Ser. No. 653,535
Int. Cl. G11b *13/00*
U.S. Cl. 340—172.5 **10 Claims**



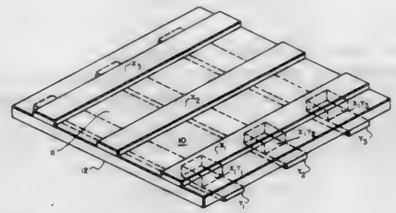
A communication arrangement in a multi-processing system wherein each processor has associated therewith an interaction control unit, all of the control units being interconnected by a common bus. This construction enables direct intercommunication between the control units. Each control unit is provided with a unique bus seizure code which it can gate to the bus and then compare the bus code setting with its own code. If the code and setting are found to be equal, the bus is available. If they are found not to be equal, then two units are simultaneously attempting to seize the bus. For the latter contingency, a tie-breaking scheme is provided, each unit being provided with a unique index which is considered in the determining as to which unit is to win a tie. There is further included an arrangement which enables a control unit which has control of the bus to ascertain which of the other control units are working on the same job as it is.

3,445,823
MEMORY HAVING A MULTI-VALVED IMPEDANCE ELEMENT
Bent Scharpe Petersen, Arhus, Denmark, assignor to Danfoss A/S, Nordborg, Denmark, a company of Denmark
Filed Feb. 4, 1965, Ser. No. 430,398
Claims priority, application Germany, Feb. 5, 1964, D 43,535
Int. Cl. H03k *17/76;* **G11b** *5/64*
U.S. Cl. 340—173 **15 Claims**



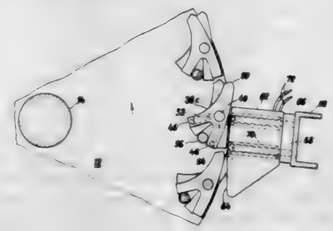
An electrical memory having bilateral solid state switching elements in a matrix configuration connecting input and output lines. The switching elements pass direct and alternating current and each consist of a polycrystalline material having a high resistance state and a low resistance state switching to the low resistance state upon application of a switching potential thereacross exceeding a switching threshold potential and switch to the higher resistance state upon application of a current exceeding a reset switching threshold current applied to the input and output lines.

3,445,824
INFORMATION STORAGE MATRIX UTILIZING ELECTRETS
John E. Fulenwider, Glenview, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed Nov. 26, 1965, Ser. No. 509,699
Int. Cl. G11b *9/02*
U.S. Cl. 340—173 **3 Claims**



An information storage device including a matrix array of row and column conductors disposed on opposite sides of a sheet of dielectric material, the dielectric material in the local regions of crossovers of the conductors defining bit locations in which information is stored by the presence or absence of an induced change in the dielectric material thereat. In one embodiment the induced change is a permanent electric polarization of the dielectric material at the bit location (i.e., an electret), and in another embodiment the induced change is a reduced thickness of the dielectric material at the bit location.

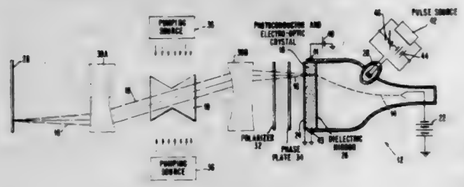
3,445,825
MAGNETICALLY BISTABILIZED MECHANICAL MEMORY DEVICE
Nicholas J. Cedrone, Wayland, Mass. (% Daymarc Corporation, 191 High St., Waltham, Mass. 02154)
Filed Nov. 26, 1965, Ser. No. 509,932
Int. Cl. G11b *5/00, 5/30*
U.S. Cl. 340—173 **5 Claims**



A bistable memory device having a pair of magnetic pole portions is shifted on a support between two positions wherein one or the other portion is in contact with a magnetic abutment. The memory device has permanent magnetic means establishing a magnetic field between the

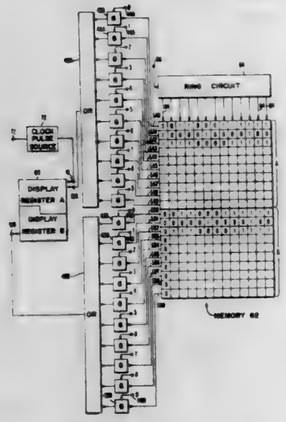
pole portions. The memory device has an actuating portion moved when the device is shifted through operation of input means.

3,445,826
ELECTRO-OPTIC STORAGE DEVICE
Robert A. Myers, New York, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Jan. 3, 1966, Ser. No. 518,369
Int. Cl. G11b 7/00; H01s 3/00
U.S. Cl. 340—173 10 Claims



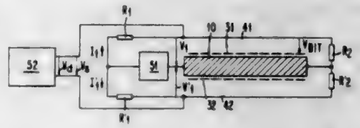
7. An electro-optic device comprising:
a cathode ray tube having a face composed of a material exhibiting an electro-optic and photoconductive effect; and
control means for illuminating said face to alter the conductivity thereof.

3,445,827
MEMORY CONTROLLED SHIFT REGISTER DISPLAY DEVICE
Robert W. Keyes, White Plains, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Jan. 7, 1966, Ser. No. 519,252
Int. Cl. G11b 5/00
U.S. Cl. 340—173 1 Claim



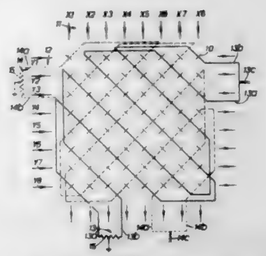
This display includes a plurality of electroluminescent diodes. Each diode is controlled by a coupled bistable device. The bistable devices are connected together to form two separate shift registers, each having a separate input terminal. The pattern to be displayed is controlled by selectively applying signals to these input terminals. The binary words representing the various patterns to be displayed are stored in two separate sections of a memory, which sections are read out in parallel and the binary words are transferred to the corresponding shift registers.

3,445,828
BALANCING DRIVER DEVICE FOR MAGNETIC FILM MEMORY
Dieter Seitzer, Gattikon-Thalwil, Zurich, Switzerland, assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed July 28, 1964, Ser. No. 385,659
Claims priority, application Switzerland, Sept. 27, 1963, 11,942/63
Int. Cl. G11b 5/66
U.S. Cl. 340—174 15 Claims



A balancing device for write and sense amplifiers operating common lines of a thin magnetic film memory. In the device, the write amplifier and the return conductor of the drive lines of the memory are arranged in a first diagonal of a bridge circuit. The sense amplifier is connected within the second diagonal of the bridge circuit. A first branch of the bridge circuit comprises a drive line of the thin magnetic film memory in each half branch. A second branch of the bridge circuit contains impedances which, during the write-in operation, assume a different impedance value than they have during the sensing operation.

3,445,829
MAGNETIC INFORMATION STORAGE MATRICES
Alan Jones, Harpole, England, assignor to Plessey-UK Limited, Ilford, England, a British company
Filed Apr. 14, 1965, Ser. No. 448,584
Claims priority, application Great Britain, Apr. 15, 1964, 15,517/64
Int. Cl. G11b 5/00
U.S. Cl. 340—174 6 Claims



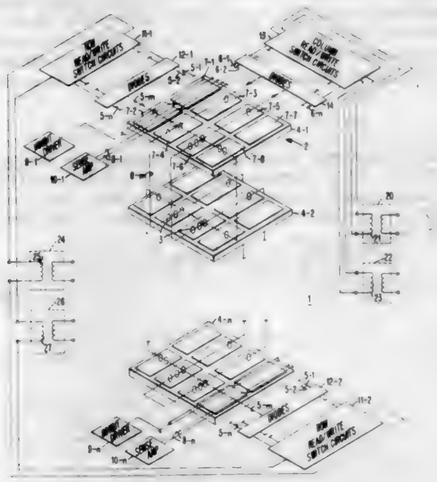
A magnetic information storage matrix having two sense wires, each wire forming a parallel-pair transmission line, one sense wire threading all cores located at the intersection of two odd or two even numbered address wires, the other sense wire threading all cores situated at the intersection of one odd and one even numbered address wire.

3,445,830
MAGNETIC THIN FILM STORAGE DEVICES WITH ROTATABLE INITIAL SUSCEPTIBILITY PROPERTIES
Simon Middelhoek, Adliswil, Zurich, Switzerland, assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed July 9, 1965, Ser. No. 470,737
Int. Cl. G11b 5/00
U.S. Cl. 340—174 2 Claims

The memory uses as a storage medium a continuous film of isotropic magnetic material which exhibits rotatable initial susceptibilty properties. This film is isotropic, but when subjected to a DC field in excess of the coercive force, the small signal susceptibility is at a maximum in a direction perpendicular to the direction of the applied field and at a minimum in a direction parallel to the applied field. The storage elements are defined at the intersection of perpendicularly extending word and digit conductors which are energized with unipolar signals to control reading and writing in the memory.



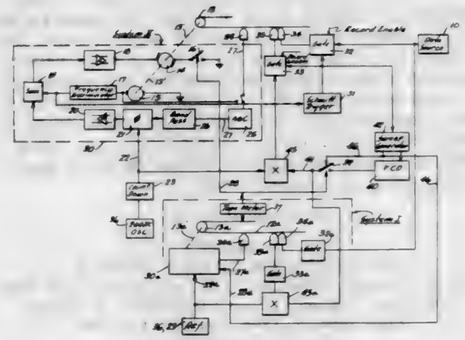
3,445,831
DRIVE SYSTEM FOR A MAGNETIC CORE ARRAY
Thomas S. Cooper, Endicott, and David E. Norton, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Oct. 5, 1965, Ser. No. 493,102
Int. Cl. G11b 5/48
U.S. Cl. 340—174 15 Claims



In a direct drive system for a magnetic core array, transformer secondary windings connected to opposite ends of respective series drive line-switch circuits provide the sole source of energizing current for switching the cores. Floating, nonsaturating switches are characterized by base overdrive for fast turn-on and by turn-on and turn-off only while power is not applied to minimize power consumption.

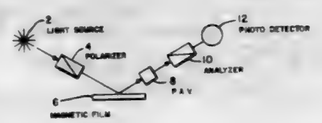
3,445,832
MAGNETIC TAPE CONTROL SYSTEM FOR MULTIPLE TAPE, UNINTERRUPTED RECORDING AND REPRODUCING
Paul D. Leeke, Ventura, and David A. Bixler, Camarillo, Calif., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Apr. 29, 1965, Ser. No. 451,779
Int. Cl. G11b 5/00
U.S. Cl. 340—174.1 13 Claims

A system is disclosed for providing uninterrupted recording and reproducing of data on magnetic tape. A signal of monotonically varying frequency is concurrently recorded on the end of one and the beginning of another tape, as the same data are recorded on the two tapes during this changeover period. During reproducing, the second tape is started when the end of the first tape approaches. The reproduced control signals are compared



and processed to generate a reference signal for the control of the drive for the second tape. When the tapes run in phase synchronism, this reference signal is or is made phase-coherent with another reference signal derived from a source for subsequently controlling the drive of the second tape, whereupon the control is turned over to that source of reference signal.

3,445,833
SIGNAL RESPONSIVE APPARATUS WITH A POLAR AZIMUTH VIBRATOR
Stanley J. Lins, Minneapolis, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 1, 1965, Ser. No. 505,934
Int. Cl. G11b 5/00
U.S. Cl. 340—174.1 3 Claims

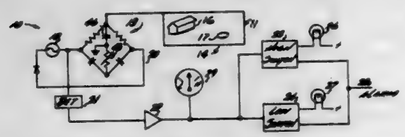


A method for sensing the magnetic state of a thin ferromagnetic film by utilizing the Kerr effect. Light from a suitable source is passed through a polarizer and reflected off of the ferro-magnetic film being sensed. The reflected polarized light is passed through a polar azimuth vibrator (PAV) which varies the plane of polarization of the reflected light such that the output therefrom when applied through an analyzer to a photodetector causes electrical signals to be produced which are representative of the periodically occurring light. The angle between the direction of the plane of polarization of the reflected light incident on the analyzer and the transmission axis of the analyzer is adjusted such that the alternating current signal produced by the photodetector is a pure second harmonic of the fundamental frequency of the PAV. This second harmonic is indicative of the first magnetic state of the film being sensed. When the film is switched from its first magnetic state to its second state, the reflected light is so rotated with respect to the transmission axis of the analyzer that the fundamental of the driving signal of the PAV is produced by the photodetector to indicate that the film is in its second magnetic state.

3,445,834
LIQUID MONITORING APPARATUS
Hervey Van C. Street, Drawer S., Humble, Tex. 77338, and Clarence S. Burch, 12118 Chimney Rock, Houston, Tex. 77035
Filed Sept. 22, 1965, Ser. No. 489,354
Int. Cl. G08b *21/00*; H01h *29/00*
U.S. Cl. 340—236 12 Claims

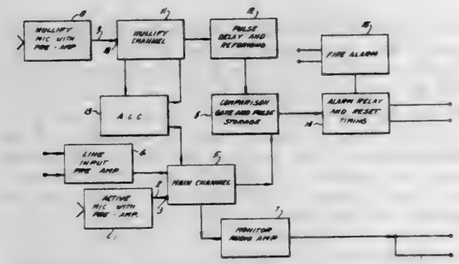
In one exemplar embodiment, a device for detecting the existence of a flowing liquid in a pipe, the device having laterally spaced probes adapted for axial insertion into the pipe. One of the probes has arcuate contact members extending transversely to the probes and adjacent the bottom wall of the pipe, with the ends of the contact members spaced from the other probe. The contact members cause a turbulence in the flowing liquid for urging a sufficient quantity of liquid to bridge the probe spacing and energizing an electrical circuit.

3,445,835
CAPACITIVE PROXIMITY SENSOR
Solly L. Fudaley, Palos Park, Ill., assignor to R-F Controls, Inc., Chicago, Ill., a corporation of Illinois
Filed Nov. 9, 1965, Ser. No. 506,956
Int. Cl. G08b *13/26*
U.S. Cl. 340—258 12 Claims



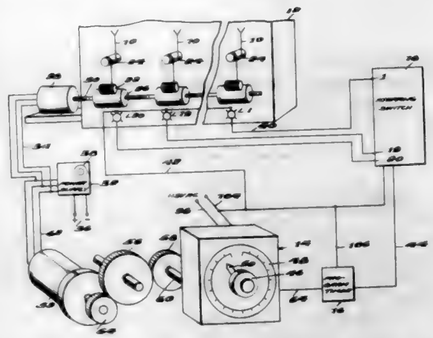
A proximity sensor comprises an antenna for establishing a low frequency electromagnetic field. A balanced oscillator changes its output frequency responsive to an object entering or leaving the field. Responsive thereto, a suitable control function is performed, as by turning off a machine tool, for example.

3,445,836
AUDIO DETECTION ALARM SYSTEMS
George S. White, Upper Montclair, and Richard E. Lewis, Nutley, N.J., and Lincoln M. Zonn, New York, N.Y., assignors to R & D Electronics, New York, N.Y., a corporation of New York
Filed Feb. 28, 1966, Ser. No. 526,195
Int. Cl. G08b *21/00*
U.S. Cl. 340—261 10 Claims



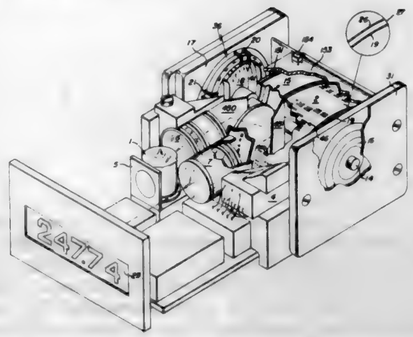
The invention consists in substance of arranging in a sound controlled alarm system a number of pickups exposed to alarm activating noise and to ambient noise respectively and to produce, under control of these pickups, pulses representative of these different noises to derive an alarm signal whereby these pickups include electromechanical transducers, preamplifiers and automatic level controls for each of the pulse producers in accordance with the level of the ambient noise producer.

3,445,837
APPARATUS FOR CONTROL OF PACKAGE WINDING
Lawrence Henry Lyons, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Apr. 20, 1965, Ser. No. 449,598
Int. Cl. G08b *1/00*; D01h *9/14*; B65h *63/00*
U.S. Cl. 340—309.4 3 Claims



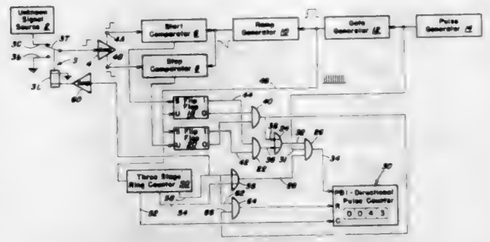
A control system for spining machine windups which includes a winding cycle timer for initiating a programmed display of doff signal lights. The timer motor is connected to the same solid state power source which supplies the windups and follows or tracks variations in windup speed, thus insuring uniformity of package sizes.

3,445,838
STROBOSCOPIC DISPLAY DEVICE WITH BUFFER INPUT AND SEPARATE CODED SYNC DRUM
Norman Joseph Appleton, Wellesley, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed Aug. 23, 1965, Ser. No. 481,701
Int. Cl. G06f *7/28*; H04l *15/34*
U.S. Cl. 340—324 8 Claims



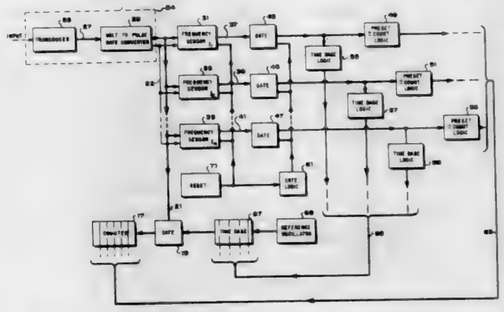
A display device for displaying a row of characters corresponding to characters encoded on an input signal wherein a rotatable cylinder having a plurality of staggered columns of character shaped openings is provided. A second cylinder having a plurality of character signalling means and rotating in synchronism with the other cylinder is provided, each of the signalling means providing a uniquely coded signal associated with each different character shaped opening. A storage medium is located on the cylinder having the character shaped openings in order to provide temporary storage of the input signal. Finally, sensing, lighting and logic means are included in order to effect the display of the selected character shaped openings.

3,445,839
DRIFT CORRECTION
Charles Engelberg, Bound Brook, and Stefan Orsen, Jersey City, N.J., assignors to American Standard Inc., a corporation of Delaware
Filed Jan. 14, 1965, Ser. No. 425,445
Int. Cl. H04l *3/00*; H03k *13/02*
U.S. Cl. 340—347 9 Claims



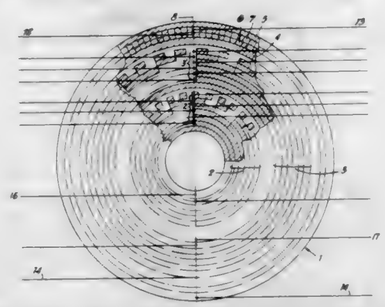
A system for converting an analog voltage into a digital representation thereof which is free of error due to drift in the system. During a first time interval the analog voltage is applied through an input amplifier to an analog to digital converter, which generates a group of pulses, the number of which corresponds to the magnitude of the analog voltage. These pulses are counted in a bidirectional counter. During a second time interval, a reference voltage is applied through the input amplifier to the analog to digital converter, which generates a second group of pulses, corresponding in number to the magnitude of the drift in the input amplifier. The latter group of pulses is applied to the bidirectional counter to adjust the count stored therein, and thereby provide a drift free digital representation of the analog voltage.

3,445,840
TRANSDUCER OUTPUT INDICATOR
Robert H. Carlstead, Menlo Park, Calif., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Apr. 1, 1965, Ser. No. 444,764
Int. Cl. H03k *13/18*; G01r *23/02*
U.S. Cl. 340—347 4 Claims



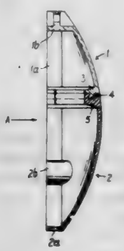
Indicator apparatus includes an anolog to digital converter which operates on the non-linear output of a transducer to provide a direct indication of the physical quantity or condition which actuates the transducer. Digital repetition-rate sensors actuate preset count and time base logic circuits for simulating the break points of a piecewise approximation of the characteristic curve of a transducer. This eliminates the calculations involving the characteristic curve of the transducer which are usually required to convert from the units of the electrical signal obtained from the transducer to the actual physical units being measured.

3,445,841
CONTACT ENCODER WITH ERRONEOUS READ-OUT PREVENTION CIRCUITRY
Noel P. Parkinson, 15 Eagle Road, Wembley, Middlesex, England
Filed June 7, 1965, Ser. No. 461,786
Claims priority, application Great Britain, June 9, 1964, 23,841/64
Int. Cl. H04l *3/02*; H03k *13/34*
U.S. Cl. 340—347 12 Claims



The contact encoder has two groups of digital read-out contact wipers, for example either angularly spaced and cooperating with a single group of contacts on a disc, or cooperating with two respective groups of said contacts. Control contacts on the disc are utilized to initiate readout from different groups of wipers in accordance with the relative position of the disc and the wipers, and all the output circuits associated with the wipers are reset automatically in a common stable state before readout is initiated, each output circuit being latched into a further stable state only when a readout is supplied thereto from the respective wiper.

3,445,842
SIGNAL LIGHT LENS HAVING TWO PORTIONS JOINED WITH A MOLDED JOINT
Arthur Thomas Charlton, Osterley, Middlesex, England, assignor to Magnatex Limited, Harlington, England, a British company
Filed Apr. 3, 1964, Ser. No. 357,069
Claims priority, application Great Britain, Apr. 5, 1963, 13,654/63
Int. Cl. B60g *1/26*; G02b *5/20*
U.S. Cl. 340—383 2 Claims

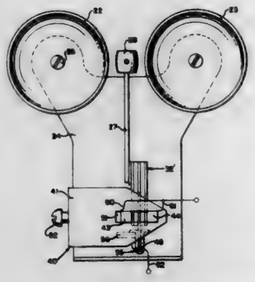


The invention relates to light filters, particularly for motor car lamps which comprise two or more portions having different colours such as red, amber and clear. The filter is made by moulding translucent synthetic plastics materials of the different colours, the portion of lighter colour being first moulded with a dovetail or similar portion along the edge where the darker colour portion is to be joined and then moulding thereto the portion of darker colour thereby to produce a unitary filter of which the join is mechanically strong and watertight.

3,445,843
PIEZOELECTRIC SIGNALING DEVICE

Pascual J. Pena, Chicago, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware

Continuation-in-part of application Ser. No. 511,958, Dec. 6, 1965. This application June 29, 1966, Ser. No. 561,537
Int. Cl. G08b 3/10
U.S. Cl. 340—392 1 Claim

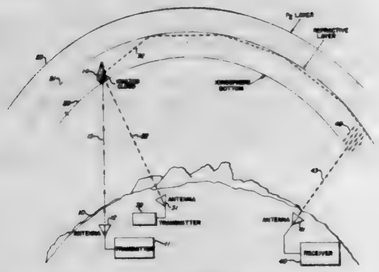


A gong-type telephone ringer has a piezoelectric bender element which is clamped at one end and carries a clapper at the other end. The clapper is attached to the element through the medium of a resilient strip. Upon energization by an A.C. voltage, the element vibrates in flexural mode and the clapper strikes the gong.

3,445,844
TRAPPED ELECTROMAGNETIC RADIATION COMMUNICATIONS SYSTEM

Mario D. Grossi, Cambridge, Mass., and Pietro P. Lombardini, Philadelphia, Pa., assignors to Raytheon Company, Lexington, Mass., a corporation of Delaware

Continuation of application Ser. No. 308,172, Sept. 11, 1963. This application Jan. 11, 1968, Ser. No. 697,244
Int. Cl. H04b 7/00
U.S. Cl. 343—100 57 Claims



1. A communications system comprising:

means for generating and controlling an ionized cloud in the ionosphere, said means including first and second transmitters for simultaneously transmitting signals in the same phase relationship, ground link means for slaving said transmitters together, and antenna means for focusing on and accelerating ionospheric electrons with the electromagnetic radiation signals from said transmitters to produce ionizing collisions;

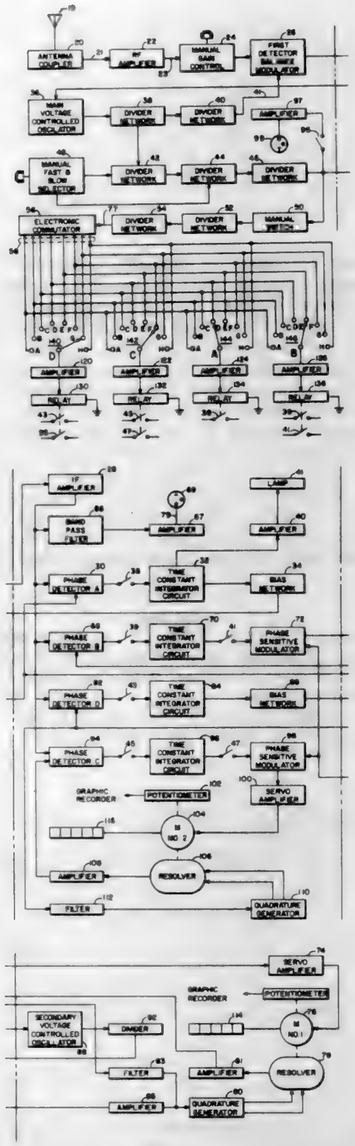
transmitting means for transmitting a communications signal directed at said ionized cloud, said cloud injecting said communications signal into and propagating said communications signal within an ionospheric signal trapping waveguide duct encircling the earth; and

means for receiving at least a portion of said communications signal trapped in the duct.

3,445,845
PHASE COMPARISON RADIO RECEIVER

Warren H. Flarity, La Jolla, Calif., assignor to Ryan Aeronautical Co., San Diego, Calif.

Filed Aug. 9, 1967, Ser. No. 659,526
Int. Cl. G01s 1/30
U.S. Cl. 343—105 9 Claims

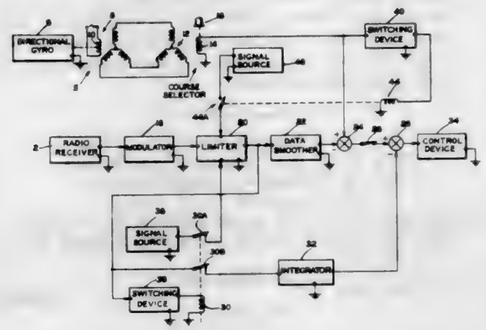


A phase comparison radio receiver for receiving a plurality of transmitted radio signals and determining the phase difference between the radio signals in which, the radio signals are modulated by a modulating frequency and are phase detected by a divided frequency of the modulating frequency to provide the phase information and also to provide an error signal to the source of the modulating frequency that holds the modulating frequency stable relative to the frequency of the radio signals.

3,445,846
AIRCRAFT CONTROL SYSTEM INCLUDING AUTOMATIC COURSE CHANGING MEANS

Arthur Charles Diani, Clifton, N.J., assignor to The Bendix Corporation, a corporation of Delaware

Filed Aug. 10, 1967, Ser. No. 659,704
Int. Cl. G01s 1/08; B64c 13/50, 15/00
U.S. Cl. 343—107 8 Claims

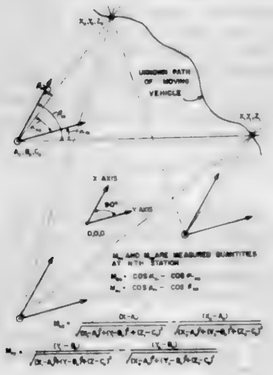


Apparatus for guiding an aircraft to follow radio beams. The craft is controlled in response to heading error signals and in response to beam error signals initially at a lower limit for tracking a preselected beam. When the pilot manually commands a course corresponding to the bearing of another beam so that the heading error signals change at a predetermined rate, the limit is automatically adjusted for first capturing the other beam at a higher limit and then tracking said other beam at the lower limit.

3,445,847
METHOD AND APPARATUS FOR GEOMETRICAL DETERMINATIONS

Calvin Miles Hammack, P.O. Box 304, Saratoga, Calif. 95070

Continuation-in-part of application Ser. No. 86,770, Feb. 2, 1961. This application Dec. 23, 1964, Ser. No. 420,623
Int. Cl. G01s 3/02, 9/04; G01c 3/08
U.S. Cl. 343—112 155 Claims

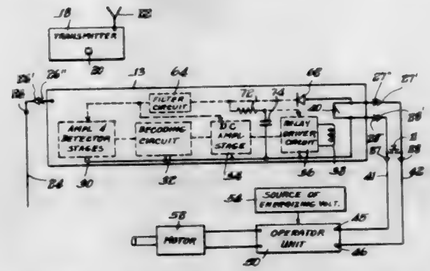


This invention relates to a method and means of determining at least one dimension of the position-motion state of one or more points relative to a number of reference points by performing measurements of angular variations or angular differences, or of functions of such angular variations or angular differences. The position-motion state of said point or points is unknown and unbounded by any "a priori" information. The apexes of such angular variations or differences are located at the reference points.

3,445,848
REMOTE CONTROL RECEIVER

Richard Goldstein, Deerfield, Ill., assignor, by mesne assignments, to Chamberlin Manufacturing Corporation, Elmhurst, Ill., a corporation of Iowa

Filed Oct. 13, 1965, Ser. No. 495,563
Int. Cl. H04b 7/00
U.S. Cl. 343—225 14 Claims



A radio control garage door operator system wherein the radio receiver obtains its energizing voltage from across the normally open contacts of the motor control relay. A chargeable current means is normally supplied by the voltage across the switch contacts and acts as a temporary supply of current to maintain the radio receiver energized when the normal energizing current is short circuited by the motor control relay upon reception of radio signals.

3,445,849
HALF WAVELENGTH MONOPOLE ANTENNA WITH SPACED LOADING COILS

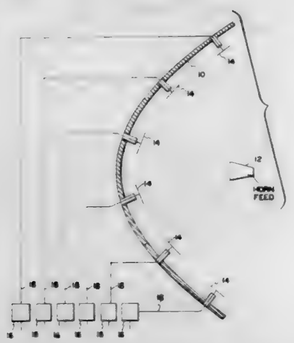
Robert F. Sanford, Princeton Junction, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Feb. 14, 1966, Ser. No. 527,261
Int. Cl. H01q 1/24
U.S. Cl. 343—702 13 Claims



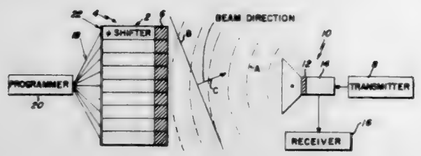
An end fed monopole antenna is described having three colinear radiating sections which are approximately equal to each other. A first inductive element is coupled between one end radiating section and the center radiating section and a second inductive element is coupled between the center radiating section and the opposite end section. The total physical length of the three sections is substantially less than one-half wavelength at the operating frequency of the antenna and yet the electrical length of the three sections is arranged so that the electrical length is substantially equal to one-half wavelength at the predetermined frequency.

3,445,850
DUAL FREQUENCY ANTENNA EMPLOYING PARABOLIC REFLECTOR
Robert J. Stegen, Van Nuys, Calif., assignor to Canoga Electronics Corporation, Chatsworth, Calif., a corporation of Nevada
Filed Nov. 8, 1965, Ser. No. 506,781
Int. Cl. H01q 21/00
U.S. Cl. 343—727 3 Claims



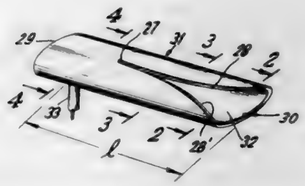
A broadband antenna comprising a paraboloidal reflector, a series of two-dimensional crossed dipole arrays mounted upon the surface of the paraboloidal reflector, in which the dipole arrays have their maximum direction of radiation generally perpendicular to the surface of the reflector from where the respective dipoles are mounted, and phase error compensation means in the transmission lines feeding each of the series of dipole arrays for distributing the phase across the aperture of the reflector.

3,445,851
POLARIZATION INSENSITIVE MICROWAVE ENERGY PHASE SHIFTER
Edward J. Sheldon, Lexington, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed Sept. 16, 1966, Ser. No. 579,914
Int. Cl. H01q 19/06
U.S. Cl. 343—754 8 Claims



8. In a reflector type optically fed antenna system comprising:
- means for generating and transmitting in free space electromagnetic wave energy;
- means for collimating and directing said transmitted energy in a desired direction including an array of reentrant variable electrical elements;
- each of said elements comprising a section of waveguide;
- a radiating element enclosing one end of said waveguide to receive and launch said energy;
- ferromagnetic means to produce a predetermined electrical phase shift in energy traversing said waveguide in opposing directions, the value of phase shift being different for each direction to yield a net phase shift represented by the difference in said values;
- waveguide shorting means enclosing the opposing end of said waveguide to reverse the direction of travel of said energy through said element;
- selective reflector means disposed between said shorting and ferromagnetic means to introduce a 180° phase differential in one orthogonal electric vector of said energy relative to the allied mutually perpendicular vector and thereby invert the orientation of said vectors of said energy traversing the space defined between said shorting means and the adjacent end of said ferromagnetic means.

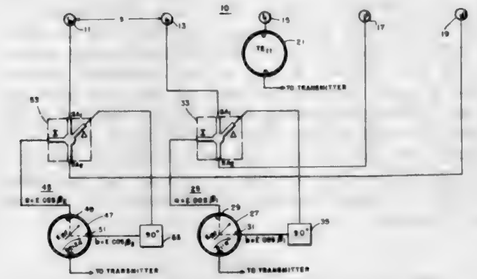
3,445,852
OPEN END WAVEGUIDE ANTENNA
John E. Karlson, 423 Bedell Terrace, West Hempstead, N.Y. 11552
Continuation-in-part of application Ser. No. 486,392, Sept. 10, 1965. This application Feb. 5, 1968, Ser. No. 703,081
Int. Cl. H01q 13/02
U.S. Cl. 343—772 6 Claims



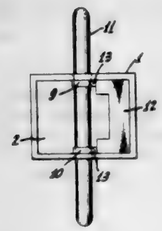
This invention relates to a design for microwave waveguide antennas. Basically, the invention is directed toward providing a waveguide structure with a particular geometrical configuration to condition the microwave energy passing therethrough. Specifically, the unique feature of this invention is a tapered aperture or slot in the wall of the waveguide antenna; which tapering aperture extends from its open end and gradually narrows down to a much smaller opening in the tubular structure. The aperture or slot down the length of the waveguide has its greatest transverse width dimension at or near the opening of the tubular structure. The dimension of the width at this point is greater than one-half the width of the waveguide and the configuration of the aperture is that of a convergent slot reducing in width to a point where the aperture terminates. The length of the tabular structure is associated with the microwave antenna.

3,445,853
LINEAR SCANNING ARRAY WITH ADJUSTABLE POLARIZERS AND HYBRIDS IN THE COUPLING NETWORK
Leonard Hatkin, Elberon, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed Jan. 12, 1966, Ser. No. 520,831
Int. Cl. H01q 3/26, 1/36; H01p 5/12
U.S. Cl. 343—854 5 Claims

An electronic scanning antenna array including a plurality of antenna elements disposed in spaced substantially aligned relation with a reference antenna and symmetrically arranged therewith, and further including for each pair of symmetrically arranged antennas an RF polarization rotator adapted to provide two orthogonal RF outputs which are fed to an associated antenna pair through a hybrid Magic-T waveguide. The sum (Σ) arm of the Magic-T is fed one orthogonal RF output and the difference arm (Δ) of the Magic-T is fed the other orthogonal output through a 90° phase shifter, and each of the symmetrical antenna pairs is fed through the respective side arms of the Magic-T.



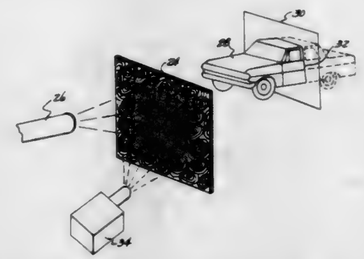
3,445,854
ANTENNA
John D. Callaghan, Cherry Hill, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Continuation of application Ser. No. 459,386, May 27, 1965. This application Mar. 18, 1968, Ser. No. 714,117
Int. Cl. H01q 15/14, 19/10
U.S. Cl. 343—912 5 Claims



A hollow supporting member is provided having a number of opposing holes in opposite sides thereof. Each of the holes has a collar surrounding it with the collars on at least one side of the member being located in the interior of the member, the collars being of the same material as the member and integral therewith. A rod is positioned in each pair of opposing holes so that each rod is surrounded by two of the collars, each of the two collars surrounding a rod being indented into that rod whereby the rods are firmly secured to the supporting member.

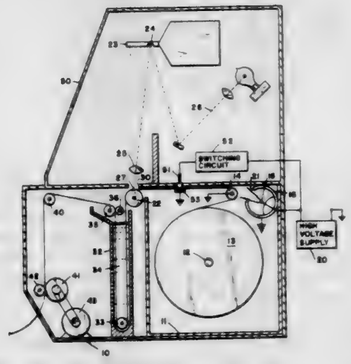
3,445,855
METHOD AND APPARATUS OF HOLOGRAPHIC PLOTTING
Ralph M. Grant, Ann Arbor, Mich., assignor, by mesne assignments, to GCOptronics, Inc., Ann Arbor, Mich., a corporation of Delaware
Filed Jan. 4, 1967, Ser. No. 607,310
Int. Cl. G01d 9/42
U.S. Cl. 346—1 10 Claims

The application discloses a system for defining the line of intersection of a plane with a three dimensional contoured object which consists of forming a photographic (hologram) record of the interference pattern between coherent light directly from the light source and light waves originating from the source which are reflected from the contoured object; developing the halogram; illuminating the hologram with an appropriate light source so as to create a virtual image of the contoured object; passing a planar surface through the virtual image so as to make visible the contour line representing the intersection between the plane and the contoured object; and recording information relating to the line either by photo-



graphing the virtual image with the planar surface passing through it or by determining the coordinates of points along the contour line by trigonometric or other techniques.

3,445,856
ELECTROSTATIC MONITORING CAMERA
Robert R. Luke, Houston, Marshall M. Robinson, Sugar Lane, and Kenneth Thomson, Pasadena, Tex., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed June 15, 1967, Ser. No. 646,313
Int. Cl. G01d 9/00
U.S. Cl. 346—1 2 Claims

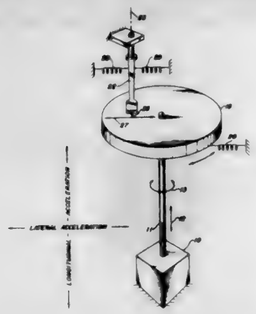


A process for continuously monitoring a seismic signal using a photoconductive paper. The paper is fed from a roll past a mirror galvonmeter where the seismic signal is written on the paper and then to a liquid developer bath containing pigmented particles. As the paper leaves the developer bath it passes through a pair of squeeze rollers that remove excess liquid and leave pigmented particles on the paper.

3,445,857
RECORDING ACCELEROMETER
Kenneth E. Pope, Litchfield Park, Ariz., assignor to UMC Industries, Inc., a corporation of Missouri
Filed June 8, 1967, Ser. No. 644,593
Int. Cl. G01d 9/10
U.S. Cl. 346—7 4 Claims

An accelerometer device utilizing a rotating shaft displaceable angularly in correspondence with acceleration

along the axis of the shaft. A disc is secured to the shaft and a stylus attached to a pendulous mass is in contact



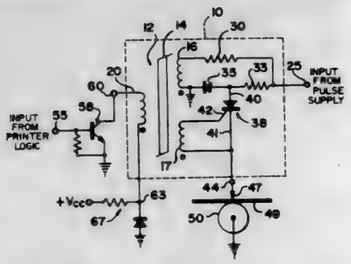
with the disc. The pendulous mass is responsive to accelerations orthogonal to the axis of the shaft.

3,445,858

ADVANCE STORE ELECTRONIC LATCHING SWITCH

Robert J. Johnson, Fort Lauderdale, Fla., assignor to Radiation Incorporated, Melbourne, Fla., a corporation of Florida

Filed Mar. 10, 1965, Ser. No. 438,580
Int. Cl. G01d *15/06;* **H03k** *23/24;* **H01g** *5/01*
U.S. Cl. 346—74 **7 Claims**



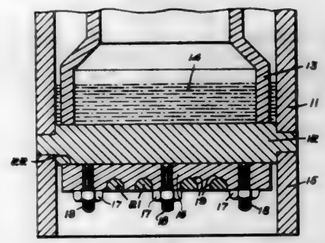
A latching switch for gating pulses from a pulse source to a load in accordance with pre-programmed instructions, includes a magnetic core with substantially rectangular hysteresis loop and with three windings, and a controlled rectifier having input, output and control electrodes. The three windings of the core constitute set, reset, and output windings. An instruction to gate the next pulse applied to the input electrode of the controlled rectifier is presented in the form of a pulse applied to the set winding of the core. Pulses applied to the input electrode of the controlled rectifier are also applied to the reset winding of the core. The output or gate winding of the core is coupled across the control and output electrodes of the controlled rectifier, and the windings on the core are such that pulses applied to the set winding to change the state of the core to "set" induce a voltage in the gate winding of improper polarity to turn on the controlled rectifier, whereas a pulse applied to the reset winding after the core has been "set" produces a change of state of the core that induces a gating voltage in the gate winding to turn on the controlled rectifier. That is, once the core has been set, the next pulse applied to the reset winding, which is also supplied to the input electrode of the controlled rectifier, is effective to change the state of the core and thereby to induce a voltage in the gate winding to turn on the controlled rectifier and gate the pulse applied thereto to the output electrode.

3,445,859

DIFFUSION VACUUM PUMP APPARATUS

James D. Cohoon, Melrose, Mass., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware

Filed July 1, 1965, Ser. No. 468,847
Int. Cl. F22b *29/00;* **H05b** *3/02*
U.S. Cl. 219—275 **8 Claims**



The pump comprises a cylindrical housing having a stainless steel base plate forming the lower portion of the pump boiler. A heater plate, which is bolted to the underside of the base plate, is fabricated from cast iron; and electrical conductors are embedded in grooves in the heater plate. The base plate and heater plate are of different materials therefore there are different degrees of thermal deflection of the two plate members during operation. The thickness of the base plate is determined by a formula which takes into consideration the radius of the base plate, the normal design operating pressure of the pump, the normal design heat flux passing through the interface between the heater plate and base plate, and the physical characteristics of the base plate and heat plate materials. The formula establishes a base plate thickness which will result in a predetermined deflection of the base plate, resulting from the pressure differential across the base plate, which pressure deflection is just sufficient to compensate for the difference in the thermal deflection of the plates. The total deflection of the two plates is then the same to provide good surface contact over the entire interface area of the plates.

DESIGNS

MAY 20, 1969

214,154
LADY'S SHOE
Aiko Miyashita Hormann, 16550 Chattanooga Place, Pacific Palisades, Calif. 90272
Filed June 13, 1968, Ser. No. 12,331
Term of patent 14 years
Int. Cl. D2—*04*
U.S. Cl. D2—302



214,155
SHOE ORNAMENT
Etienne Aigner, New York, N.Y., assignor to Villager Industries, Inc., a corporation of Delaware
Filed Sept. 18, 1968, Ser. No. 13,596
Term of patent 14 years
Int. Cl. D2—*04*
U.S. Cl. D2—315



214,156
PULL FOR A HANDBAG
Etienne Aigner, New York, N.Y., assignor to Villager Industries, Inc., a corporation of Delaware
Filed Sept. 18, 1968, Ser. No. 13,584
Term of patent 14 years
Int. Cl. D8—*03*
U.S. Cl. D8—159



214,157
JAR OR SIMILAR ARTICLE
Floyd E. Pettengill, Lancaster, Ohio, assignor to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware
Original design application Sept. 23, 1966, Ser. No. 3,990, now Patent No. 212,459, dated Oct. 22, 1968. Divided and this application Dec. 13, 1967, Ser. No. 9,756
Term of patent 14 years
Int. Cl. D9—*01*
U.S. Cl. D9—92



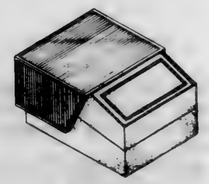
214,158
BOTTLE OR SIMILAR ARTICLE
Floyd E. Pettengill, Lancaster, Ohio, assignor to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware
Original design application Sept. 23, 1966, Ser. No. 4,006. Divided and this application Dec. 5, 1967, Ser. No. 9,647
Term of patent 14 years
Int. Cl. D9—*01*
U.S. Cl. D9—100



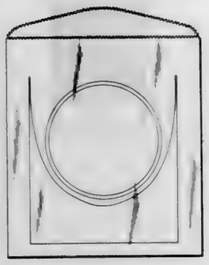
214,159
COMBINED JAR AND CLOSURE
Alexander W. Hart and Daniel D. Acton, Lancaster, Ohio, assignors to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware
Filed Jan. 23, 1968, Ser. No. 10,279
Term of patent 14 years
Int. Cl. D9—*01, 02*
U.S. Cl. D9—164



214,160
JEWELRY BOX
Philip Beck, New York, N.Y., assignor to Bulova Watch Company, Inc., Flushing, N.Y., a corporation of New York
Filed Sept. 12, 1968, Ser. No. 13,519
Term of patent 7 years
Int. Cl. D9—*04*
U.S. Cl. D9—231



214,161
BAG OR SIMILAR ARTICLE
John A. Anderson, Kansas City, Mo., assignor to Harlan S. Laner, Kansas City, Mo.
Filed Jan. 2, 1968, Ser. No. 10,021
Term of patent 14 years
Int. Cl. D9—*06*
U.S. Cl. D9—249



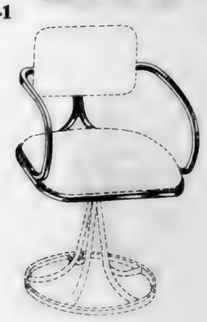
214,162
CLOSURE CAP FOR A JAR OR THE LIKE
Lincoln A. Warrell, Mount Holly Springs, Pa., assignor to Pennsylvania Dutch Co., Inc., a corporation of Delaware
Filed May 7, 1968, Ser. No. 11,814
Term of patent 14 years
Int. Cl. D9—*99*
U.S. Cl. D9—268



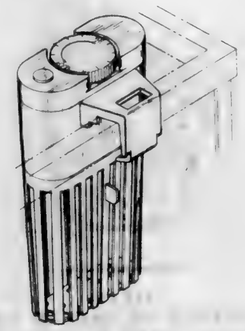
214,163
MOBILE STORAGE UNIT
Gordon Smith, Greenwich, Conn., and George H. Kress, East Orange, N.J., assignors to Business Supplies Corporation of America, New York, N.Y., a corporation of Massachusetts
Filed Apr. 30, 1968, Ser. No. 11,718
Term of patent 14 years
Int. Cl. D12—*02*
U.S. Cl. D14—3



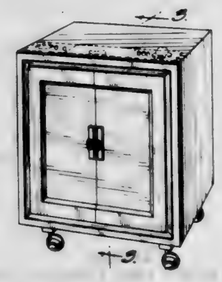
214,164
CHAIR OR SIMILAR ARTICLE
Donald Lee Sickler, Baltimore, Md., assignor to National Industries, Inc., Odenton, Md., a corporation of Maryland
Filed Nov. 6, 1967, Ser. No. 9,293
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D15—1



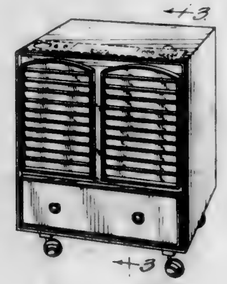
214,165
HEATER FOR AQUARIUM WATER
Walter Sesboltz, Park Ridge, N.J., assignor to Sternco Industries, Inc., Harrison, N.J., a corporation of New Jersey
Filed Sept. 27, 1968, Ser. No. 13,749
Term of patent 14 years
Int. Cl. D23—*03*
U.S. Cl. D23—87



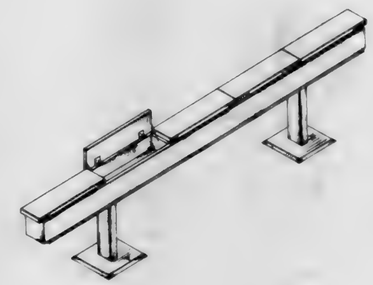
214,166
HUMIDIFIER
John E. Reed, Glen Ellyn, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Feb. 28, 1968, Ser. No. 10,754
Term of patent 14 years
Int. Cl. D23—*04*
U.S. Cl. D23—146



214,167
HUMIDIFIER
Dietmar Nagel, Chicago, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Feb. 28, 1968, Ser. No. 10,760
Term of patent 14 years
Int. Cl. D23—*04*
U.S. Cl. D23—146



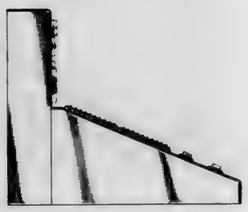
214,168
CABINET FOR HOUSING ELECTRONIC EQUIPMENT
Eli Rabineau, 78 Stoneleigh Road, Scarsdale, N.Y. 10583
Filed Apr. 14, 1967, Ser. No. 6,704
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D26—5



214,169
KEYBOARD FOR AN INFORMATION PROCESSING UNIT OR THE LIKE
Dean C. Bowman, Oklahoma City, Joe R. Waldrop, Bethany, and George B. Webb, Oklahoma City, Okla., assignors to General Electric Company, a corporation of New York
Filed Oct. 20, 1967, Ser. No. 9,085
Term of patent 14 years
Int. Cl. D14—*02*
U.S. Cl. D26—5

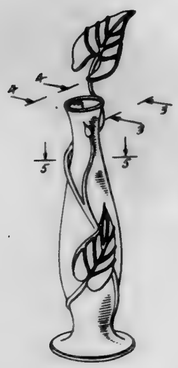


214,170
CONTROL CONSOLE FOR A SIMULATOR OF ELECTRIC SYSTEMS
Louie R. Tresino, Buffalo, and Thomas O. Curlee III, Depew, N.Y., assignors to Westinghouse Electric Corporation, a corporation of Pennsylvania
Filed Feb. 13, 1967, Ser. No. 5,787
Term of patent 14 years
Int. Cl. D13—*03*
U.S. Cl. D26—13





214,171
VASE OR SIMILAR ARTICLE
Lena L. Troutman, 418 W. Monroe, Salisbury, N.C. 28144
Filed July 5, 1968, Ser. No. 12,636
Term of patent 14 years
Int. Cl. D11—*02*
U.S. Cl. D29—28



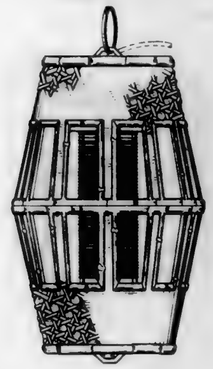
214,172
VASE OR SIMILAR ARTICLE
Lena L. Troutman, 418 W. Monroe, Salisbury, N.C. 28144
Filed July 10, 1968, Ser. No. 12,678
Term of patent 14 years
Int. Cl. D11—*02*
U.S. Cl. D29—28



214,173
BIRD FEEDER OR SIMILAR ARTICLE
Clarence E. Garten, Jackson St., Bolivar, W. Va. 25426
Filed Sept. 6, 1968, Ser. No. 13,417
Term of patent 14 years
Int. Cl. D30—*02*
U.S. Cl. D30—15



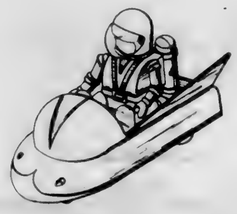
214,174
LANTERN-TYPE INSECT TRAP
Howard S. Howard, 17 Clover Place, New Rochelle, N.Y. 10805
Filed Feb. 12, 1968, Ser. No. 10,546
Term of patent 3½ years
Int. Cl. D22—*09*
U.S. Cl. D22—19



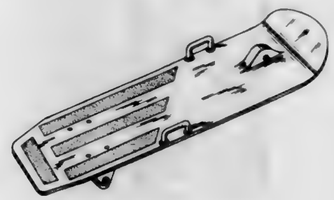
214,175
BATHROOM CABINET
Salvatore Roggio, Jr., Philadelphia, Pa., and Robert S. Roggio, Delran, N.J., assignors to Lehman Specialty Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Apr. 29, 1968, Ser. No. 11,694
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D33—16



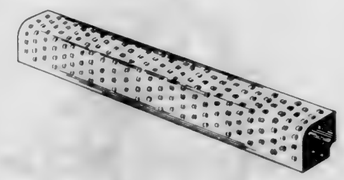
214,176
COMBINED FIGURE AND VEHICLE TOY
Kazuo Tazaki, % Tomy Kogyo Co. Ltd. No. 10, 9, 7 Chome Tateishi, Katsushika-ku, Tokyo, Japan
Filed May 14, 1968, Ser. No. 11,925
Claims priority, application Japan Nov. 17, 1967
Term of patent 14 years
Int. Cl. D21—*02*
U.S. Cl. D34—15



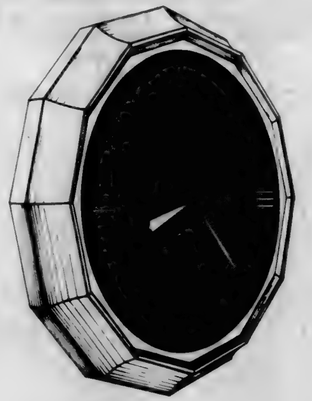
214,177
ROLLER BOARD
Larry J. Greer, 617 Oak, Emporia, Kans. 66801
Filed June 14, 1968, Ser. No. 12,368
Term of patent 14 years
Int. Cl. D12—*11*; D21—*02*
U.S. Cl. D34—15



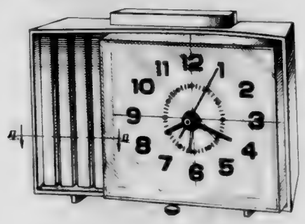
214,178
FOUR-SIDED FILE HAVING CONVEX AND CONCAVE CORNERS
James A. Coon, 929 Drever St., West Sacramento, Calif. 95691, and Elwin Theobald, 4631 Solano Way, Fair Oaks, Calif. 95628
Filed June 21, 1968, Ser. No. 12,463
Term of patent 14 years
Int. Cl. D8—*02*
U.S. Cl. D37—1



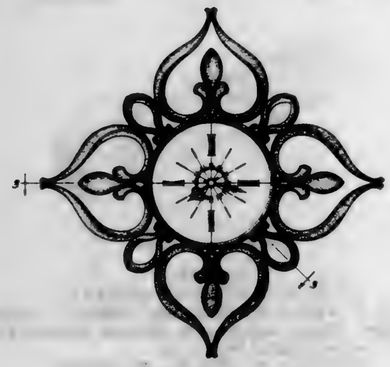
214,179
CLOCK OR SIMILAR ARTICLE
Theodore G. Daher, Stratford, and William V. Judson, Westport, Conn., assignors to General Electric Company, a corporation of New York
Filed Mar. 12, 1968, Ser. No. 10,938
Term of patent 7 years
Int. Cl. D10—*01*
U.S. Cl. D42—7



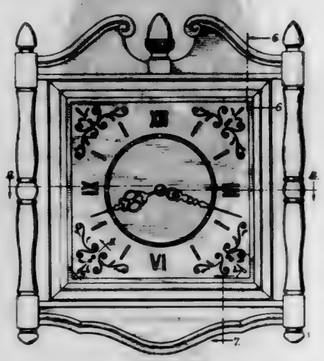
214,180
CLOCK
Robert O. Ernest, Oak Park, and Thomas C. Mills, Wheaton, Ill., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Aug. 19, 1968, Ser. No. 13,193
Term of patent 14 years
Int. Cl. D10—*01*
U.S. Cl. D42—7



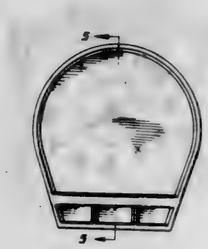
214,181
CLOCK
Shurley H. Harris, North Syracuse, N.Y., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Aug. 21, 1968, Ser. No. 13,215
Term of patent 14 years
Int. Cl. D10—*01*
U.S. Cl. D42—7



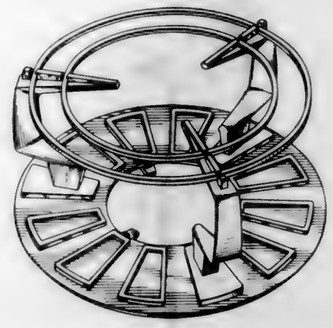
214,182
CLOCK
Harry L. Laylon, Syracuse, N.Y., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Apr. 3, 1968, Ser. No. 11,277
Term of patent 14 years
Int. Cl. D10—*01*
U.S. Cl. D42—7



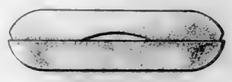
214,183
SERVING TRAY
Raymond Di Biase, 147 Trenton Ave., Mount Royal, Quebec, Canada
Filed Feb. 1, 1968, Ser. No. 10,406
Term of patent 7 years
Int. Cl. D7—*01*
U.S. Cl. D44—10



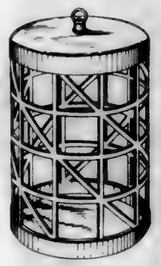
214,184
WARMING STAND
William J. Rackocy, Clifton, N.J., assignor to Ronson Corporation, Woodbridge, N.J., a corporation of New Jersey
Filed May 15, 1968, Ser. No. 11,950
Term of patent 14 years
Int. Cl. D7—*02, 04*
U.S. Cl. D44—10



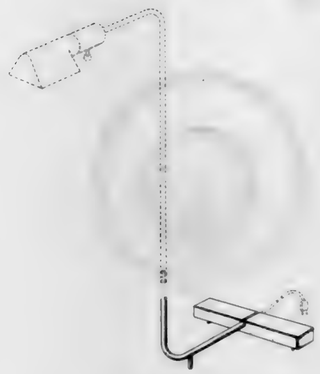
214,185
CASSEROLE
Willis A. Stageberg, Minneapolis, Minn., assignor, by mesne assignments, to Plastics, Inc., St. Paul, Minn., a corporation of Delaware
Filed Aug. 2, 1967, Ser. No. 8,096
Term of patent 14 years
Int. Cl. D7—*01*
U.S. Cl. D44—15



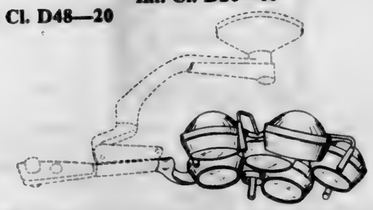
214,186
DECORATIVE PROTECTIVE HOUSING FOR ELECTRICAL FIXTURE
Jack A. Meltzer, 3398 Fairway Road, Oceanside, N.Y. 11572
Filed Apr. 12, 1968, Ser. No. 11,442
Term of patent 14 years
Int. Cl. D26—*02*
U.S. Cl. D48—16



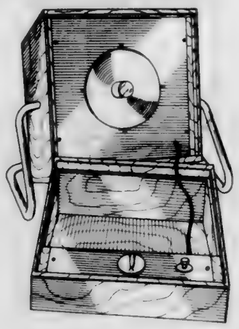
214,187
LAMP
Cedric James Hartman, 4013 Farnam St., Omaha, Nebr. 68131
Filed Jan. 31, 1968, Ser. No. 10,380
Term of patent 14 years
Int. Cl. D26—*02*
U.S. Cl. D48—20



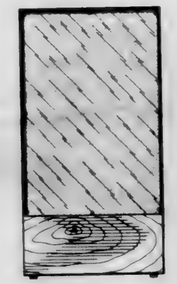
214,188
SURGICAL LAMP OR THE LIKE
Norman Edward Lauterbach, Pittsford, N.Y., assignor to Sybron Corporation, a corporation of New York
Filed May 28, 1968, Ser. No. 12,111
Term of patent 14 years
Int. Cl. D26—*03*
U.S. Cl. D48—20



214,189
COMBINED LIGHT FOR STAGE AND ADVERTISING USE AND CONTROL UNIT THEREFOR
Calvin G. Rudd, Seneca, Mo., assignor to Eagle-Picher Industries, Inc., Cincinnati, Ohio, a corporation of Ohio
Filed June 14, 1968, Ser. No. 12,363
Term of patent 14 years
Int. Cl. D26—*03*
U.S. Cl. D48—20

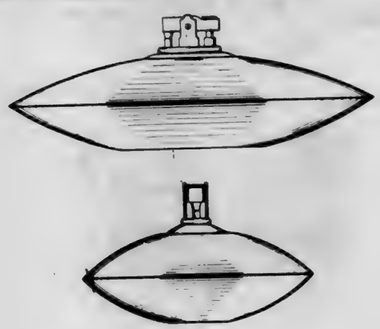


214,190
LIGHT FOR STAGE AND ADVERTISING USE
Larry W. Hillhouse, Tulsa, Okla., assignor to Eagle-Picher Industries, Inc., Cincinnati, Ohio, a corporation of Ohio
Filed June 14, 1968, Ser. No. 12,366
Term of patent 14 years
Int. Cl. D26—*03*
U.S. Cl. D48—20

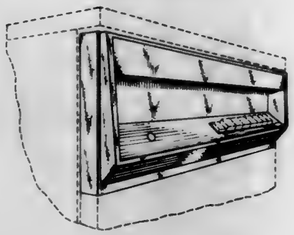


214,191
COMBINED LIGHT FOR STAGE AND ADVERTISING USE AND CONTROL THEREFOR
Calvin G. Rudd, Seneca, Mo., assignor to Eagle-Picher Industries, Inc., Cincinnati, Ohio, a corporation of Ohio
Filed June 14, 1968, Ser. No. 12,367
Term of patent 14 years
Int. Cl. D26—*03*
U.S. Cl. D48—20

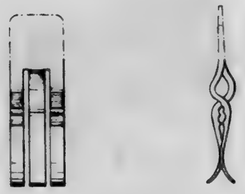
214,192
CIGARETTE LIGHTER
Donald J. Mock, 720 N. Bell, Fremont, Nebr. 68025
Filed Apr. 1, 1968, Ser. No. 11,228
Term of patent 14 years
Int. Cl. D27—*05*
U.S. Cl. D48—27



214,193
DISHWASHER CONTROL PANEL
William J. Swartz, Newton, Iowa, assignor to The Maytag Company, Newton, Iowa, a corporation of Delaware
Filed May 24, 1968, Ser. No. 12,078
Term of patent 14 years
Int. Cl. D15—*07*; D7—*06*
U.S. Cl. D49—1



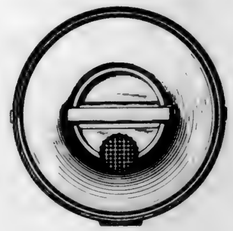
214,194
CLOTHESPIN OR THE LIKE
Heinz-Hermann Welck, 94 Rue de la Serrette, Geneva, Switzerland
Filed July 26, 1968, Ser. No. 12,910
Claims priority, application Switzerland Feb. 6, 1968
Term of patent 14 years
Int. Cl. D7—*06*
U.S. Cl. D49—1



214,195
CLOTHESPIN OR THE LIKE
Heinz-Hermann Welck, 94 Rue de la Serrette, Geneva, Switzerland
Filed July 26, 1968, Ser. No. 12,923
Claims priority, application Switzerland Feb. 15, 1968
Term of patent 14 years
Int. Cl. D7—*06*
U.S. Cl. D49—1

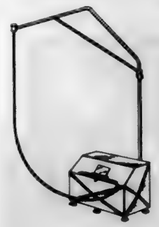


214,196
UTILITY VACUUM CLEANER OR SIMILAR ARTICLE
Clyde H. Williams, Coldwater, Mich., assignor to The Scott & Fetzer Company, Bronson, Mich., a corporation of Ohio
Filed Sept. 11, 1968, Ser. No. 13,490
Term of patent 14 years
Int. Cl. D15—*07*
U.S. Cl. D49—11

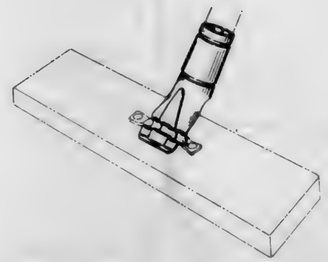




214,197
SEMIAUTOMATIC WASHER FOR VEHICLES OR THE LIKE
George W. Phillips and William C. Hitt, Los Angeles, and Stephen M. Slonneger, San Fernando, Calif., assignors to San Fernando Air Parts, Inc., San Fernando, Calif., a corporation of California
Filed May 1, 1968, Ser. No. 11,728
Term of patent 14 years
Int. Cl. D15—*07*
U.S. Cl. D49—12



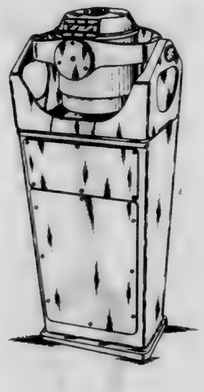
214,198
COMBINED MOP HANDLE SUPPORT AND STOP
Francis O. Gibbs, Greensboro, N.C., assignor to Southern Mechanical Products Company, Greensboro, N.C., a corporation of North Carolina
Filed Apr. 24, 1968, Ser. No. 11,590
Term of patent 14 years
Int. Cl. D7—*06*
U.S. Cl. D49—21



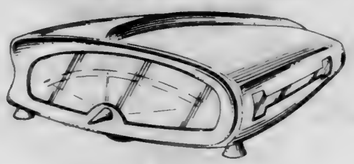
214,199
FRONT PANEL FOR A TOILET SEAT COVER DISPENSER
Jack L. Perrin, Los Angeles, and Council A. Tucker, Glendale, Calif., assignors to Towlsaver, Inc., Los Angeles, Calif., a corporation of California
Filed Apr. 5, 1968, Ser. No. 11,320
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D52—2



214,200
CONSOLE MARINE GYROCOMPASS
Richard J. Arthur, Charlottesville, Albert K. Aberle, Ednam Forest, and James G. Carswell, Keswick, Va., and Richard G. Brugger, Hempstead, N.Y., assignors to Sperry Rand Corporation, a corporation of Delaware
Filed Jan. 29, 1968, Ser. No. 10,339
Term of patent 14 years
Int. Cl. D10—*07*
U.S. Cl. D52—6



214,201
TACHOMETER
Donald Lane, Trevose, Pa., assignor to Hurst-Cambell, Inc., Warminster, Pa., a corporation of Pennsylvania
Filed July 31, 1968, Ser. No. 12,977
Term of patent 14 years
Int. Cl. D10—*08*; D12—*99*
U.S. Cl. D52—6



214,202
SPACE CONDITION RESPONSIVE INSTRUMENT
Alvin J. Stahel, St. Paul, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Feb. 7, 1968, Ser. No. 10,468
Term of patent 14 years
Int. Cl. D10—*07*
U.S. Cl. D52—7



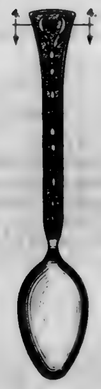
214,203
SPOON OR SIMILAR ARTICLE
Melvin A. Lee, Oneida, N.Y., assignor to Oneida Ltd., Oneida, N.Y., a corporation of New York
Filed Apr. 5, 1968, Ser. No. 11,324
Term of patent 14 years
Int. Cl. D7—*03*
U.S. Cl. D54—12



214,205
SPOON OR SIMILAR ARTICLE
Arnold Thaler, Highland Park, Ill., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware
Filed June 5, 1968, Ser. No. 12,218
Term of patent 14 years
Int. Cl. D7—*03*
U.S. Cl. D54—12



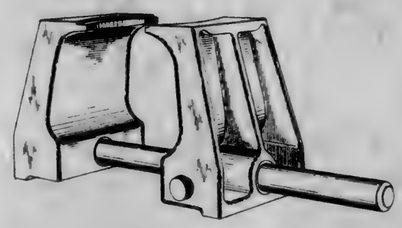
214,204
SPOON OR SIMILAR ARTICLE
Arnold Thaler, Highland Park, Ill., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware
Filed June 5, 1968, Ser. No. 12,217
Term of patent 14 years
Int. Cl. D7—*03*
U.S. Cl. D54—12



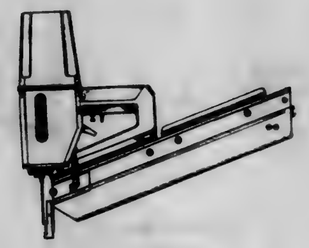
214,206
SPOON OR SIMILAR ARTICLE
Arnold Thaler, Highland Park, Ill., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware
Filed June 5, 1968, Ser. No. 12,221
Term of patent 14 years
Int. Cl. D7—*03*
U.S. Cl. D54—12



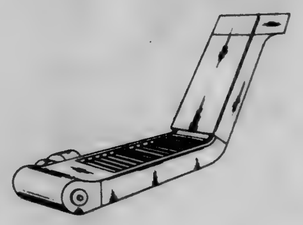
214,207
STAND FOR SUPPORTING ROTARY MACHINE TOOL CUTTERS WHILE BEING ATTACHED TO MACHINE SPINDLE
William J. Rogers, 6121 W. Mitchell St., West Allis, Wis. 53214
Filed July 3, 1968, Ser. No. 12,627
Term of patent 7 years
Int. Cl. D15—*05*
U.S. Cl. D54—13



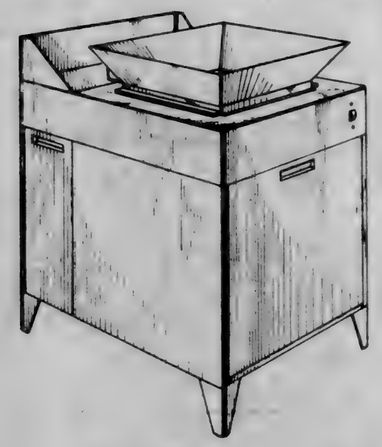
214,208
PNEUMATIC NAILING MACHINE
Heinz Schwarz, Baden, Wurttemberg, Germany, assignor to Karl M. Reich, Maschinenfabrik, Nuertingen, Baden-Wurttemberg, Germany, a firm
Filed Nov. 28, 1967, Ser. No. 9,563
Claims priority, application Germany June 21, 1967
Term of patent 14 years
Int. Cl. D8—*02*
U.S. Cl. D54—14

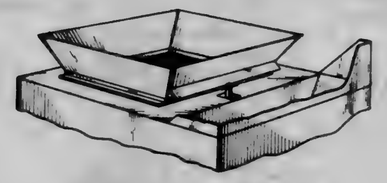


214,209
CONVEYOR
Harry E. Ziegler, Chardon, Ohio, assignor to May-Fran Manufacturing Co., Cleveland, Ohio, a corporation of Ohio
Filed Oct. 11, 1967, Ser. No. 8,953
Term of patent 14 years
Int. Cl. D12—*05*
U.S. Cl. D55—1



214,210
SHAKER FOR FLOUR BREADING RECOVERY
John E. Friedrichs, Jr., 922 Wycliffe, Houston, Tex. 77024
Filed Feb. 29, 1968, Ser. No. 10,793
Term of patent 14 years
Int. Cl. D15—*05*
U.S. Cl. D55—1

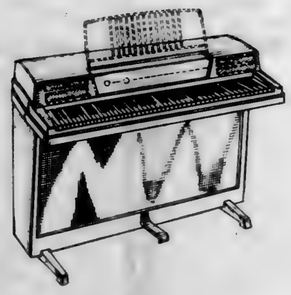




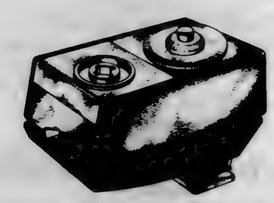
214,211
PORTABLE ELECTRONIC PIANO OR SIMILAR ARTICLE
Kenneth G. Benson, Sycamore, Ill., assignor to The Wurlitzer Company, Chicago, Ill., a corporation of Delaware
Filed Aug. 19, 1968, Ser. No. 13,189
Term of patent 14 years
Int. Cl. D17—*01*
U.S. Cl. D56—9



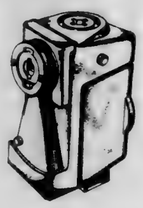
214,212
ELECTRONIC PIANO OR SIMILAR ARTICLE
Kenneth G. Benson, Sycamore, Ill., assignor to The Wurlitzer Company, Chicago, Ill., a corporation of Delaware
Filed Aug. 19, 1968, Ser. No. 13,190
Term of patent 14 years
Int. Cl. D17—*01*
U.S. Cl. D56—9



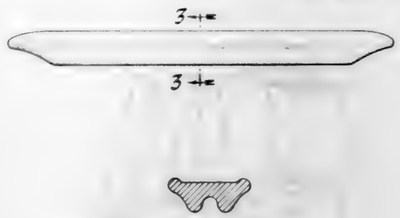
214,213
FLASHLAMP MOUNTING UNIT
Wallace A. Monson, Golden Valley, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Jan. 8, 1968, Ser. No. 10,082
Term of patent 14 years
Int. Cl. D26—*99*; D16—*07*
U.S. Cl. D61—1



214,214
FLASHGUN
Wallace A. Monson, Golden Valley, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Jan. 8, 1968, Ser. No. 10,083
Term of patent 14 years
Int. Cl. D16—*07, 99*; D26—*99*
U.S. Cl. D61—1



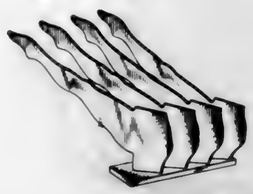
214,215
SURFBOARD
Edward W. Keneklis, Box 314, Brockton, Mass. 02403
Filed July 31, 1968, Ser. No. 12,973
Term of patent 14 years
Int. Cl. D21—*03*
U.S. Cl. D71—1



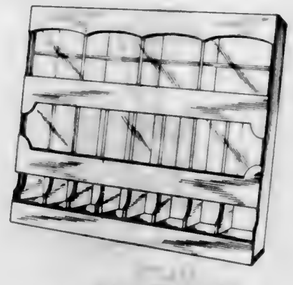
214,216
ILLUMINATED SIGNAL
Henry Dreyfuss, South Pasadena, Calif., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed Dec. 29, 1967, Ser. No. 9,997
Term of patent 14 years
Int. Cl. D29—*99*; D26—*99*
U.S. Cl. D72—1



214,217
DISPLAY FORM FOR PANTY HOSE AND THE LIKE
Arthur Goldstein, 11 Winchombe Way, Scarsdale, N.Y. 10583, and Theodore Sobel, 66 Glenview Road, South Orange, N.J. 07079
Filed Apr. 9, 1968, Ser. No. 11,371
Term of patent 7 years
Int. Cl. D20—*02*
U.S. Cl. D80—8

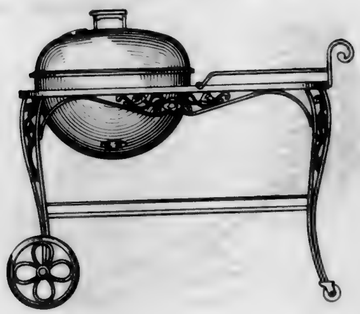


214,218
COMBINED DISPLAY AND DISPENSING STAND FOR MERCHANDISE
Charles Resnick, Freeport, N.Y., assignor to Fred Brenner Corporation, New York, N.Y.
Filed June 6, 1968, Ser. No. 12,243
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D80—9

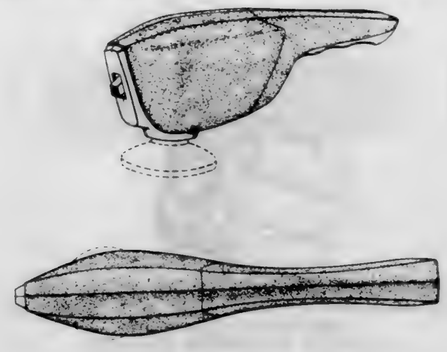


214,219
DISPLAY SHELF
Robert L. Swartz, Madison, Wis., assignor to Oscar Mayer & Co., Inc., Chicago, Ill., a corporation of Illinois
Filed July 1, 1968, Ser. No. 12,562
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D80—10

214,220
COMBINATION TABLE-CART AND BARBECUE GRILL
Richard T. ver Halen, River Forest, Ill., assignor to Weber-Stephen Products Co., Arlington Heights, Ill., a corporation of Illinois
Filed Apr. 29, 1968, Ser. No. 11,676
Term of patent 14 years
Int. Cl. D7—*04*
U.S. Cl. D81—10



214,221
MASSAGER
Julian R. Haynes, Hinsdale, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed June 7, 1968, Ser. No. 12,263
Term of patent 14 years
Int. Cl. D24—*02*
U.S. Cl. D83—1



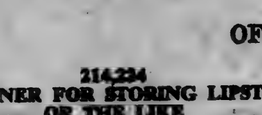
214,222
MASSAGER
Julian R. Haynes, Hinsdale, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed June 10, 1968, Ser. No. 12,291
Term of patent 14 years
Int. Cl. D24—*02*
U.S. Cl. D83—1

214,223
CAP FOR MULTIPLE INJECTION DEVICES
William L. Brickson, Indianapolis, Ind., assignor to Bio-Neering, Inc., Carmel, Ind., a corporation of Indiana
Filed June 14, 1968, Ser. No. 12,349
Term of patent 14 years
Int. Cl. D24—*03*
U.S. Cl. D83—12

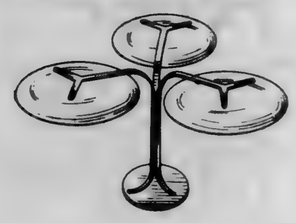
214,224
CONTAINER FOR STORING LIPSTICKS OR THE LIKE
Rosiyn C. Lovine, 47 Winslow Road, White Plains, N.Y. 10606
Filed June 28, 1967, Ser. No. 7,626
Term of patent 14 years
Int. Cl. D6—*01*; D28—*03*
U.S. Cl. D86—10



214,225
COMBINED TWEEZERS AND CLIPPER
Samuel A. Grande, 50 Ernest St., Nutley, N.J. 07110
Filed Apr. 12, 1968, Ser. No. 11,445
Term of patent 14 years
Int. Cl. D28—*03*
U.S. Cl. D86—10



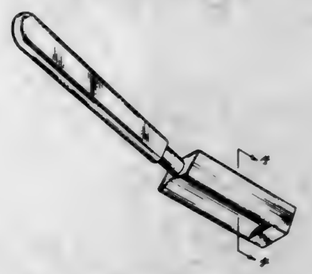
214,226
CANOPY
Lisa Sewell, 145 W. 87th St., and Lawrence E. Charity, 10 W. 90th St., both of New York, N.Y. 10024
Filed May 27, 1968, Ser. No. 12,087
Term of patent 14 years
Int. Cl. D25—*02*
U.S. Cl. D88—3



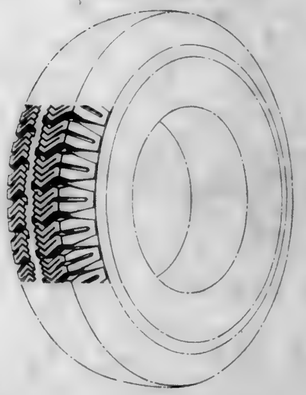
214,227
FOOD BLENDER
Alfred W. Madl, Glendale, Wis., assignor to John Oster Manufacturing Co., Milwaukee, Wis., a corporation of Wisconsin
Filed Mar. 25, 1968, Ser. No. 11,122
Term of patent 14 years
Int. Cl. D7—*05*
U.S. Cl. D89—1



214,228
FRUIT PEELER
Albert P. Ruggieri, 201 Spruce Road, Flourtown, Pa. 19031
Filed June 27, 1968, Ser. No. 12,526
Term of patent 7 years
Int. Cl. D7—*03*
U.S. Cl. D89—1



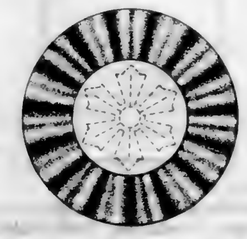
214,229
TIRE
Robert M. Allen, Sao Paulo, Sao Paulo, Brazil, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Jan. 2, 1968, Ser. No. 10,037
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D90—20



214,230
TIRE
Raymond P. Hawkinson, Minneapolis, Minn., assignor to Paul E. Hawkinson Company, Minneapolis, Minn., a corporation of Minnesota
Filed July 29, 1968, Ser. No. 12,949
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D90—20



214,231
RIBBON ORNAMENT FOR A PACKAGE
Roger M. Schmidt, Minneapolis, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Dec. 18, 1967, Ser. No. 9,828
Term of patent 14 years
Int. Cl. D5—*08*
U.S. Cl. D92—1



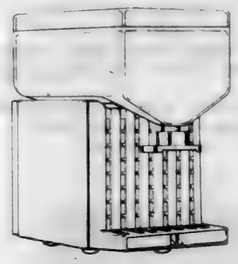
214,232
CHILD'S SLEEPING BAG
Donald J. Dale, 715 W. Minnehaha Parkway, Minneapolis, Minn. 55419
Filed Apr. 4, 1968, Ser. No. 11,304
Term of patent 14 years
Int. Cl. D6—*02*; D21—*99*
U.S. Cl. D92—2



214,233
PLASTIC RUNNER
Dana W. Mox, Glenview, Ill., assignor to Tenex Corporation, a corporation of Illinois
Filed Sept. 25, 1967, Ser. No. 8,722
Term of patent 14 years
Int. Cl. D5—*03*
U.S. Cl. D92—4



214,234
BEVERAGE REFRIGERATING DISPENSER
Tito Rimini, Milan, Italy, assignor to Bras S.p.A., Milan, Italy, a company of Italy
Filed Oct. 9, 1967, Ser. No. 8,930
Claims priority, application Italy Apr. 12, 1967
Term of patent 14 years
Int. Cl. D15—*12*
U.S. Cl. D94—3



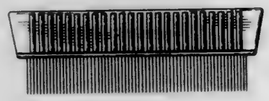
214,235
FILAMENT FOR ATTACHING A PRICE TAG TO AN ARTICLE OF MANUFACTURE
Francis G. Merser, Framingham, Mass., assignor to Dennison Manufacturing Company, Framingham, Mass., a corporation of Nevada
Filed Apr. 12, 1968, Ser. No. 11,434
Term of patent 14 years
Int. Cl. D20—*99*; D9—*08*
U.S. Cl. D96—1



214,236
SHEET LIFTER FOR A LOOSE LEAF RING BINDER
Henry W. Orth, Milwaukee, and John R. Byrne, Watertown, Wis., assignors to Stationers Loose Leaf Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Feb. 19, 1968, Ser. No. 10,630
Term of patent 14 years
Int. Cl. D19—*04*
U.S. Cl. D97—1



214,237
BRUSH
Gary K. Hylton, Prairie Village, Kans., assignor to Beatty Plastics Company, Kansas City, Mo., a corporation of Missouri
Filed Mar. 8, 1968, Ser. No. 10,895
Term of patent 14 years
Int. Cl. D4—*01*
U.S. Cl. D4—1



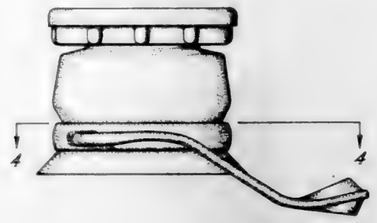


214,238
DENTAL CLEANING IMPLEMENT
Harry Bender, Overhill Road, Elmsford, N.Y. 10523
Filed May 17, 1968, Ser. No. 11,985
Term of patent 14 years
Int. Cl. D4—*02*; D24—*99*
U.S. Cl. D4—24

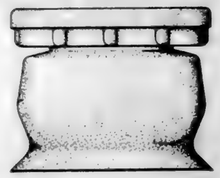




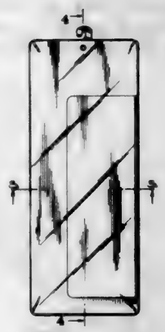
214,239
COMBINED MILK BOTTLE AND CARRYING HANDLE
Paul G. Kemp, London, Ontario, Canada, assignor, by mesne assignments, to Kemp Products Incorporated, Cleveland, Ohio
Filed Feb. 17, 1967, Ser. No. 5,853
Term of patent 14 years
Int. Cl. D9—*01*
U.S. Cl. D9—46



214,240
MILK BOTTLE
Paul G. Kemp, London, Ontario, Canada, assignor, by mesne assignments, to Kemp Products Incorporated, Cleveland, Ohio
Filed Feb. 17, 1967, Ser. No. 5,852
Term of patent 14 years
Int. Cl. D9—*01*
U.S. Cl. D9—99



214,241
HANGABLE TRANSPARENT DISPLAY PACKAGE
William K. Morgan, Coshocton, Ohio, assignor to Pretty Products, Inc., Coshocton, Ohio, a corporation of Ohio
Filed Jan. 11, 1968, Ser. No. 10,126
Term of patent 14 years
Int. Cl. D9—*04*
U.S. Cl. D9—191



214,242
COMBINED DISPLAY CARD AND HAIR PIECE PACKAGE
Julius Klugmann, 461 Fort Washington Ave., New York, N.Y. 10033
Filed Jan. 30, 1968, Ser. No. 10,368
Term of patent 14 years
Int. Cl. D28—*03*; D20—*02*
U.S. Cl. D9—191



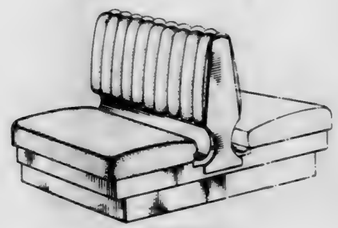
214,243
WHEEL
Donald J. Reid, Pleasant Ridge, Mich., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware
Filed Sept. 23, 1968, Ser. No. 13,655
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D14—30



214,244
VEHICLE SEAT
Chester J. Bareckl, Grand Rapids, Mich., assignor to American Seating Company, Grand Rapids, Mich., a corporation of Delaware
Filed Feb. 26, 1968, Ser. No. 10,721
Term of patent 14 years
Int. Cl. D6—*01*; D12—*14*
U.S. Cl. D15—8



214,245
RESTAURANT BOOTH SEAT
Robert H. Sand, Los Angeles, Calif., assignor to Elster's, Hollywood, Calif., a corporation of California
Filed Apr. 11, 1968, Ser. No. 11,421
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D15—11

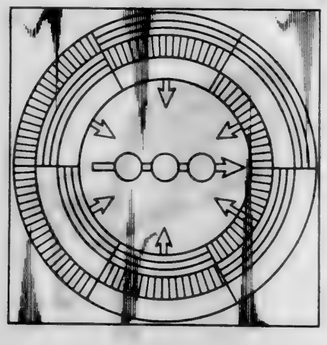


214,246
FISH LURE
Charles J. Bos, Oak Harbor, Wash., assignor to Howard A. Patrick, Oak Harbor, Wash.
Filed Aug. 1, 1967, Ser. No. 8,081
Term of patent 14 years
Int. Cl. D22—*07*
U.S. Cl. D22—27

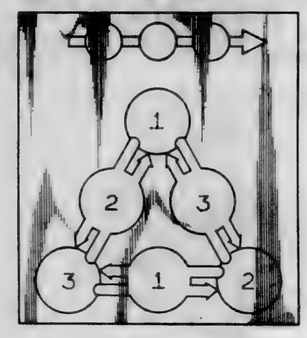




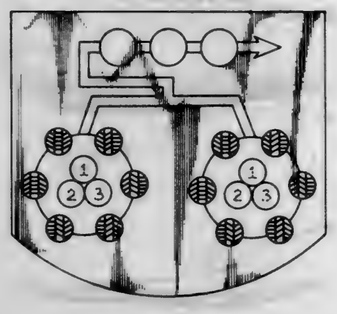
214,247
GAME BOARD
Charles J. Schultz, P.O. Box 5324, Reno, Nev. 89503
Filed May 6, 1968, Ser. No. 11,795
Term of patent 14 years
Int. Cl. D21—*01*
U.S. Cl. D34—5



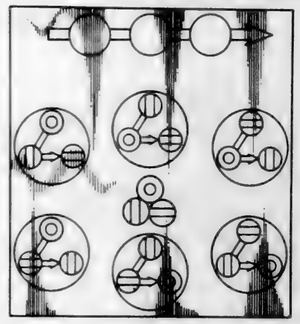
214,248
GAME BOARD
Charles J. Schultz, P.O. Box 5324, Reno, Nev. 89503
Filed May 31, 1968, Ser. No. 12,160
Term of patent 14 years
Int. Cl. D21—*01*
U.S. Cl. D34—5



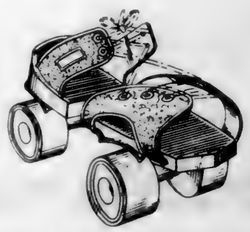
214,249
GAME BOARD
Charles J. Schultz, P.O. Box 5324, Reno, Nev. 89503
Filed June 7, 1968, Ser. No. 12,266
Term of patent 14 years
Int. Cl. D21—*01*
U.S. Cl. D34—5



214,250
GAME BOARD
Charles J. Schultz, P.O. Box 5324, Reno, Nev. 89503
Filed June 7, 1968, Ser. No. 12,268
Term of patent 14 years
Int. Cl. D21—*01*
U.S. Cl. D34—5



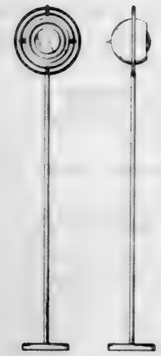
214,251
ROLLER SKATE
Thomas C. Mills, Wheaton, Ill., assignor to Samsonite Corporation, Denver, Colo., a corporation of Colorado
Filed May 6, 1968, Ser. No. 11,794
Term of patent 14 years
Int. Cl. D21—*03*
U.S. Cl. D34—14



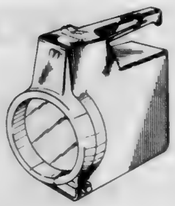
214,252
CHILD'S SKATE BOARD
Nicholas Andersen, 14917 Greymont Drive, Centreville, Va. 22020
Filed May 27, 1968, Ser. No. 12,086
Term of patent 14 years
Int. Cl. D12—*11*; D21—*03*
U.S. Cl. D34—15



214,353
LAMP
Robert Sonneman, 210 E. 68th St., New York, N.Y. 10021
Filed Sept. 6, 1968, Ser. No. 13,438
Term of patent 14 years
Int. Cl. D26—*02*
U.S. Cl. D48—20



214,254
PORTABLE LIGHT
Edward P. Cheslock, Chester, Pa., assignor to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware
Filed July 31, 1968, Ser. No. 12,982
Term of patent 14 years
Int. Cl. D26—*04*
U.S. Cl. D48—24



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PATENTS WERE ISSUED ON THE 20TH DAY OF MAY, 1969

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Julen, Axel G. J. Bluegrass plant. 2,887, 5–20–69, Cl. 88.

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LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 20TH DAY OF MAY, 1969

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

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Abbott, Albert F., Haskin, Bruce J., and Klopich, Marshall E., to Explosives Corporation of America. Tree felling technique and shaped explosive charge employed therein. 3,444,811, 05-20-69, Cl. 102-023.
Abe, Hidekazu, Shibata, Hiromichi, and Ito, Teruo, to Nihon Denchi Kabushiki Kaisha. Method of making silver chloride electrode having a metallic silver coating on at least part of each particle. 3,445,296, 05-20-69, Cl. 136-120.
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Belokin, Paul, Jr., to Schenley Industries Incorporated. Animated advertising device. 3,444,636, 05-20-69, Cl. 040-106.25

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Chadwick, Earl L. Saw chain. 3,444,907, 05-20-69, Cl. 143-135.
Chaffee, Roger G., to Dow Corning Corporation. Organosilicon epoxides. 3,445,483, 05-20-69, Cl. 260-348.
Chalfin, William L., and Garvey, Edward Christopher, said Garvey assor. to said Chalfin. Elastic construction. 3,444,562, 05-20-69, Cl. 002-338.
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Champlin, Charles L., to Packaging Corporation of America. Shipper carton. 3,445,054, 05-20-69, Cl. 229-040.
Chant, Leonard H., to General Motors Corporation. Front end loader having adjustable height control. 3,445,020, 05-20-69, Cl. 214-768.
Chapuis, Willy, and Kuhner, Willy, to Seewar, Gustave A. Dough forming device. 3,444,827, 05-20-69, Cl. 107-009.
Charlton, Arthur Thomas, to Magnatex Limited. Signal light lens having two portions joined with a molded joint. 3,445,842, 05-20-69, Cl. 340-383.
Chesse, Colette Marie, and Hery, Jean Francois. Bedding device provided with insulating and excrement collecting accessories. 3,444,567, 05-20-69, Cl. 005-090.
Chave, Charles T., to Stone & Webster Engineering Corporation. Leak detecting and locating system for nuclear reactor containment vessels. 3,444,725, 05-20-69, Cl. 073-040.7
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Childers, Thomas W., and Genois, Edmond R., to Esso Production Research Company. Servicing of wells. 3,444,927, 05-20-69, Cl. 166-000.5
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Chiusolo, Louis L.: *See—*
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Cholet, Jacques, Fail, Jean Pierre, Grau, Gerard, and Magneville, Pierre, to Institut Francais du Petrole des Carburants et Lubrifiants. Device to avoid the pulsation of the gas bubbles generated by underwater explosions. 3,444,953, 05-20-69, Cl. 181-000.5
Chow, Sui-Wu, Gulick, Rodwin E., and Orttung, Frederick W., Jr., to Union Carbide Corporation. Electrodeposited olefin interpolymers and methods for making same. 3,445,362, 05-20-69, Cl. 204-181.
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Cilluffo, Frank A. Childproof safety container and closure. 3,445,022, 05-20-69, Cl. 215-009.
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Clapham, Robert G., Lord, John B., IV, and Sullivan, Harold G., to Honeywell Inc. Automatic data channel equalization apparatus utilizing a transversal filter. 3,445,771, 05-20-69, Cl. 325-042.
Clark Equipment Company: *See—*
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Clark, Joe W., to United States of America, Agriculture. Laminated wood beam with improved preservative treatment. 3,445,325, 05-20-69, Cl. 161-166.
Clark, Robert H., and Myers, Philip E., to Warner Electric Brake & Clutch Company. Magnetic friction coupling with partly laminated flux circuit. 3,444,970, 05-20-69, Cl. 192-084.
Clarke, Dennis, and Fowler, Tony J., to Ford Motor Company. Door check assemblies. 3,445,132, 05-20-69, Cl. 292-338.
Clarke, John L., to Hydrasearch Co., Inc. Universal flange connector. 3,445,127, 05-20-69, Cl. 285-088.
Clarke, Peter John, to Hovercraft Development Limited. Skirt restoring means for gas-cushion vehicles. 3,444,952, 05-20-69, Cl. 180-127.
Clarke, Wallace Eugene, to Northern Electric Company Limited. Sequence control system and method. 3,445,812, 05-20-69, Cl. 340-147.
Clausen, Victor H., and Zweig, Arnold, to Simpson Timber Company. Wood veneer joining and handling apparatus. 3,445,313, 05-20-69, Cl. 156-433.
Claxton, Clarence W., and Esmay, Edward N., to Bausch & Lomb, Incorporated. Backlash control means for internal gearing. 3,444,760, 05-20-69, Cl. 074-640.
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Clegg, John Brian, and Elliott, Leonard Godfrey, to Glaxo Laboratories Limited. Process of preparing vitamin-containing gelled aqueous colloid beads. 3,445,563, 05-20-69, Cl. 424-035.
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Controni, Guido, Khan, Waheed N., Patrick, James R., and Ross, Sydney. Isolation of hemophilus bacteria. 3,445,339, 05-20-69, Cl. 195-103.5
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Cooper, Harry Christopher, to A.P.V. Company Limited, The. Flow diversion controls. 3,444,891, 05-20-69, Cl. 137-608.
Cooper, Jacob, and Corbett, Carl E., to Foster Wheeler Corporation. Vapor generator seal arrangement. 3,444,841, 05-20-69, Cl. 122-006.
Cooper, James C., and Wissick, William P., to International Business Machines Corporaton. Multi-system sharing of data processing units. 3,445,819, 05-20-69, Cl. 340-172.5
Cooper, Thomas S., and Norton, David E., to International Business Machines Corporation. Drive system for a magnetic core array. 3,445,831, 05-20-69, Cl. 340-174.
Coordes, John E., and Fuller, Samuel H., Jr., to United States of America, Army. Vehicle control. 3,444,945, 05-20-69, Cl. 180-019.
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Cote, Philip J. Air ejector type device. 3,444,584, 05-20-69, Cl. 015-344.
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Coulter, John S., to Iowa Paint Manufacturing Company, Incorporated. Storage stable coating composition comprising alkyd resin, esterified inorganic acid, and volatile buffer material. 3,445,410, 05-20-69, Cl. 260-021.
Coventry Gauge & Tool Company Limited: *See—*
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Covington, Charles H. Air circulating means for a patio table and umbrella therefor. 3,444,799, 05-20-69, Cl. 098-001.
Cox, Robert P., and Buetow, Ralph W., to Celanese Corporation. Bonding of plastic materials by polymerizable solvents. 3,445,311, 05-20-69, Cl. 156-307.
Cragg, William Donald, and Barnes, George J. P., to International Standard Electric Corporation. Electromechanical transducer coupled to low in- put impedance transistor amplifier and yielding a flat response over a given frequency range. 3,445,595, 05-20-69, Cl. 179-001.
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Crim, Elmo Parker. Strip material applicator. 3,445,314, 05-20-69, Cl. 156-521.
Criscimagna, Tony N., to International Business Machines Corporation. Meta-cyclic command generator. 3,445,817, 05-20-69, Cl. 340-172.5
Crook, Troy N., to Esso Production Research Company. Apparatus for determining the time phase relationship of electrical signals. 3,445,642, 05-20-69, Cl. 235-181.
Cross, James M., to Mobay Chemical Company. Reduction of tolylene diamines. 3,445,516, 05-20-69, Cl. 260-563.
Crowe, Kenneth R., and Leiter, Howard A., to International Telephone and Telegraph Corporation. Cylinder with internal photosensitive coating and prism on outer surface for admitting light at an angle to be totally internally reflected. 3,445,709, 05-20-69, Cl. 313-102.
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Cunningham, Thomas W., to Baldwin, D. H., Company. Chiff and tone generator. 3,445,578, 05-20-69, Cl. 084-001.04
Cupler, Melvin C. Friction wrench. 3,444,767, 05-20-69, Cl. 081-063.1
Curchack, Herbert D., to United States of America, Army. Artillery simulator. 3,444,733, 05-20-69, Cl. 073-167.
Curler, Howard J., and Lineburg, Glenn E., to Curwood, Inc. Flexible wrapping material. 3,445,324, 05-20-69, Cl. 161-165.
Curry, Leonard O. Apparatus for the support and movement of radiographic equipment on an elongated pipe. 3,445,655, 05-20-69, Cl. 250-065.
Curwood, Inc.: *See—*
Curler, Howard J., and Lineburg, Glenn E., 3,445,324.
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Cyba, Henryk A., to Universal Oil Products Company. Boric acid esters. 3,445,498, 05-20-69, Cl. 260-462.
Daane, Rose R. Ceramic tile scrubber. 3,444,576, 05-20-69, Cl. 015-028.
Daellenbach, Francis O. Selective thinner for row crops. 3,444,933, 05-20-69, Cl. 172-006.
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Daneman, Ben, to Central Engineering Company, Inc. Debris collector suction pipe. 3,444,581, 05-20-69, Cl. 015-314.
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Danner, Jefferson D., and Quatrochi, Lyle W., to International Rectifier Corporation. Non-polarized clamping selenium rectifier. 3,445,738, 05-20-69, Cl. 317-241.
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Davidson, John Bruce, to Coventry Gauge & Tool Company Limited. Clutch with non-rotatable fluid motor. 3,444,971, 05-20-69, Cl. 192-085.
Davidson, Lee E. Continuous surveillance photographic recorder. 3,445,158, 05-20-69, Cl. 352-068.
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Davis, Carl B. Wheel chock. 3,444,963, 05-20-69, Cl. 188-032.
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Dawbarn, Henry D., to Thiokol Chemical Corporation, mesne. Filament reinforced plastic film. 3,445,319, 05-20-69, Cl. 161-058.
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de Bock, Evert Jan, to North American Philips Company, Inc. Method for refining glass baths. 3,445,215, 05-20-69, Cl. 065-134.
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Degenhardt, Heinrich, and Quass, Werner, to Maschinenfabrik Augsburg Nuremberg Aktiengesellschaft. Apparatus for removing bulk material from a stockpile. 3,444,984, 05-20-69, Cl. 198-036.

De Graff, Richard R., to Universal Oil Products Company. Separation process. 3,445,378, 05-20-69, Cl. 208-104.

De Graff, Richard R., to Universal Oil Products Company. Conversion method. 3,445,536, 05-20-69, Cl. 260-672.

De Graff, Richard R., and Perga, Martin W., to Universal Oil Products Company. Method for control of solvent separation processes. 3,445,381, 05-20-69, Cl. 208-313.

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Derudder, Gerard, and Derudder, Rodolphe, to Societe Anonyme dite Societe Textile Saint-Antoine et Textile Halluinois S.A. Apparatus for yarn combining or doubling. 3,444,680, 05-20-69, Cl. 057-059.

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de Ruig, Jans R.: *See—*
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Des Champs, James W. Control for forward and reverse drive and for engine power, with special adjustments for engine idling and acceleration. 3,444,765, 05-20-69, Cl. 074-876.

Desmond, Timothy J., Greenburg, Leon S., and Weisberg, Harry, to Radio Corporation of America. High speed controlled rectifiers with deep level dopants. 3,445,735, 05-20-69, Cl. 317-235.

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Dillman, Norman G., to North American Rockwell Corporation. Photosensitive semiconductor device for obtaining light source position data. 3,445,667, 05-20-69, Cl. 250-211.

Di Meglio, Joseph E., to Leesona Corporation. Winding machine. 3,445,074, 05-20-69, Cl. 242-027.

Dingman, Edward H. Apparatus for passing flowing air about a bed occupant at selective temperatures. 3,444,922, 05-20-69, Cl. 165-026.

Dion, Paul A., and Thomson, Arthur James, to Texas Instruments, Incorporated. Manufacture of clad wire and the like. 3,444,603, 05-20-69, Cl. 029-033.

Dischert, Robert A., and Hobson, Norman L., to Radio Corporation of America. Coordinated sensitivity and amplification control system. 3,445,590, 05-20-69, Cl. 178-007.2

Distillers Company Limited, The: *See—*
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Dobbs, Ronald Merrill. Controlling and sensing device for plural trolling rods. 3,444,643, 05-20-69, Cl. 043-017.

Dobkins, Joe W., to Halliburton Company. Shock absorber and piston guide means. 3,444,965, 05-20-69, Cl. 188-096.

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Dombeck, Thomas W. Information storage apparatus. 3,445,715, 05-20-69, Cl. 315-018.

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Donohoo, Daniel J. Alerting apparatus. 3,445,810, 05-20-69, Cl. 340-056.

Doornbos, George H.: *See—*
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Lane, Norman, to BSR Limited. Cartridge holder for the pick-up arm of a record player. 3,445,118, 05-20-69, Cl. 274-024.

Lanes, Albert, Rachlis, Robert E., Roth, Irving, and Stark, Edward W., to Sperry Rand Corporation. Correlation identification apparatus. 3,445,634, 05-20-69, Cl. 235-061.11

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La Raus, Julius, to Ozonator Corporation. Water purifier. 3,445,001, 05-20-69, Cl. 210-098.

Larchar, Trescott B., Sr.: *See—*
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Larchar, Trescott B., Sr., to Olin Mathieson Chemical Corporation. Adhesive-forming compositions containing random poly-μ-carboranylenesiloxane copolymers and adhesives prepared therefrom. 3,445,427, 05-20-69, Cl. 260-046.5

La Soudure Electrique Autogene: *See—*
Sunnen, Jean Albert Francois, 3,445,624.

Lauber, Ernst, to Maschinenfabrik Habegger AG. Sectional tunnel boring machine. 3,445,137, 05-20-69, Cl. 299-031.

Laudenslager, Harry B., Jr., and Hale, Everett W., to Blackstone Corporation. Cast ferrous material of high magnetic permeability. 3,445,299, 05-20-69, Cl. 148-031.55

Laughlin, Robert G., and Berry, Jim S., to Procter & Gamble Company, The. Sulfonediimine compounds. 3,445,515, 05-20-69, Cl. 260-551.

Laughman, George J., to Bausch & Lomb, Incorporated. Control system for automatically locating the optical center and/or optical axis of an optical system or lens. 3,445,665, 05-20-69, Cl. 250-208.

Laurel, Ralph V., to Melroe Manufacturing Company, mesne. Vehicle with lift-off means for ease of steering. 3,444,583, 05-20-69, Cl. 015-340.

Laurent, Pierre Gabriel, to Electricite de France (Service National). High-voltage power conversion assembly composed of a polyphase transformer combined with a plurality of sets of controlled rectifiers. 3,445,747, 05-20-69, Cl. 321-005.

Lautin, Leon. Reinforced luggage handle and mounting member. 3,444,967, 05-20-69, Cl. 190-058.

Lavacchia, Joseph E. Tray accessory for bathtubs. 3,444,564, 05-20-69, Cl. 004-185.

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Lawrence, Geoffrey L., to Zenith Carburetter Company Limited, The. Fuel-air mixture intake systems for internal combustion engines. 3,444,848, 05-20-69, Cl. 123-122.

Layne, Douglas K., to Dow Corning Corporation. Treatment of glass with silsesquioxanes to improve durability of subsequent silicone treatments to washing. 3,445,267, 05-20-69, Cl. 117-072.

Layne, Douglas K., Northrup, Hal J., and Weber, Carl D., to Dow Corning Corporation. Controlled release agents. 3,445,417, 05-20-69, Cl. 260-033.6

Leadbeter, Willard S.: *See—*
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Leclear, Robert L., to T & S Equipment Co. Dock board construction. 3,444,574, 05-20-69, Cl. 014-071.

Lecomte, Paul. Process for the production of energy by controlled fusion. 3,445,333, 05-20-69, Cl. 176-001.

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Lee, Charles Allen, and Murphy, James A., to Canadian International Paper Company, mesne. Fiber suspension distribution system. 3,445,331, 05-20-69, Cl. 162-338.

Lee, Chi-Long, to Dow Corning Corporation. Pentavalent silane and tetravalent boron catecholates as polymerization catalysts. 3,445,426, 05-20-69, Cl. 260-046.5

Lee, John M., to Dow Chemical Company, The. Perlite composition, porous low density perlite structure and method of making same. 3,445,253, 05-20-69, Cl. 106-040.

Leebrick, John R., to Pfizer, Chas., & Co. Compositions containing organotin metal car- boxylate antimicrobials. 3,445,249, 05-20-69, Cl. 106-015.

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Leeke, Paul D., and Bixler, David A., to Minnesota Mining and Manufacturing Company. Magnetic tape control system for multiple tape, uninterrupted recording and reproducing. 3,445,832, 05-20-69, Cl. 340-174.1

Leesona Corporation: *See—*
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Leftwich, James R., to Mallory, P. R., & Co., Inc. Temperature controlling and indicating device. 3,445,677, 05-20-69, Cl. 307-117.

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Leidich, Arthur J., to Radio Corporation of America. Phase splitting circuit for a direct coupled push-pull amplifier. 3,445,776, 05-20-69, Cl. 330-015.

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Lepiane, Donald C., to Western Electric Company, Incorporated. Method for fabricating double-diffused semi- conductive devices. 3,445,302, 05-20-69, Cl. 148-186.

Lester, George R., to Universal Oil Products Company. Selective hydrogenation of conjugated dienic compounds. 3,445,539, 05-20-69, Cl. 260-677.

Lewallen, John V., to Phillips Petroleum Company. Hinged laminate. 3,445,052, 05-20-69, Cl. 229-016.

Lewis, Dwight, Charles, to Penn Controls, Inc. Thermostat. 3,445,632, 05-20-69, Cl. 219-511.

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Liebl, Helmut J., to Applied Research Laboratories, Inc. Double focussing mass spectrometer including a wedge-shaped magnetic sector field. 3,445,650, 05-20-69, Cl. 250-041.9

Liedel, Douglas D., to Hall, C. M., Lamp Company. Remote controlled motion transmitting device. 3,444,754, 05-20-69, Cl. 074-501.

Ligne, Marie-Joseph F. L., to Sud-Aviation Societe Nationale de Constructions Aeronautiques. Releasable connecting device. 3,444,773, 05-20-69, Cl. 085-009.

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Lindberg, Allan W. Gyroscopic apparatus. 3,444,744, 05-20-69, Cl. 074-005.

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Lindh, Torsten L., and Lindblad, Lars O. I., to AB Tetra Pak. Method of eliminating damage in heat treating a packaging material. 3,445,180, 05-20-69, Cl. 021-056.

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Lineker, Robert L. Rear seals for journal boxes. 3,445,121, 05-20-69, Cl. 277-178.

Link, Herbert W. Brake lining testing device. 3,444,720, 05-20-69, Cl. 073-009.

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Liobis, Vytautas A.: *See—*
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Bach, Ricardo O., Kamienski, Conrad W., Dellinger, Matthew Henry, Mitchem, Luther C., and Morrison, Robert C., 3,445,534.

Litt, Peter S., 12% each to Hobbs, Walter B. Ball, Ralph K., and Harbaugh, Watson D. Water purification. 3,445,000, 05-20-69, Cl. 210-094.

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Littlejohn, Duane P., and Llewellyn, Peter M., to Varian Associates. Ion cyclotron resonance spectrometer having the analyzer means pivotally mounted on the magnet yoke. 3,445,649, 05-20-69, Cl. 250-041.9

Litton Industries, Inc.: *See—*
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Litton Systems, Inc.: *See—*
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Littwin, Arthur K., and Littwin, Robert L., to Littwin, Arhtur K. Littwin, Robert L. Littwin, Donald F., and Young, Horace A., as trustees under trust known as Littwin Family Trust No. 1. Apparatus for and method of demagnetizing. 3,445,620, 05-20-69, Cl. 219-108.

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Loddenkemper, Franz Josef, and Tenthoff, Aloys, to Westfalia Separator Aktiengesellschaft. Centrifugal separator apparatus. 3,445,062, 05-20-69, Cl. 233-029.

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Lodige, Wilhelm, Lodige, Fritz, and Lucke, Josef. Screw mixer. 3,445,090, 05-20-69, Cl. 259-002.

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Lorck, Flemming L., to Oxford Paper Company. Air Knife metering apparatus and method. 3,445,270, 05-20-69, Cl. 117-102.

Lord, John B., IV: *See—*
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Lotz, William B., to Container Corporation of America. Display carton having a film overlap. 3,445,053, 05-20-69, Cl. 229-037.

Loughead, Aaron G., to United States of America, Army. Magnetic field intensity meter. 3,445,761, 05-20-69, Cl. 324-047.

Louzil, Friedrich, Appel, Arne, and Habelt, Gerhard, to U. S. Philips Corporation, mesne. Switching arrangement in dictating machines. 3,445,613, 05-20-69, Cl. 200-052.

Lovegreen, Alan Trevor. Classification of granular materials. 3,444,998, 05-20-69, Cl. 209-159.

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Ludwig, Herbert P. Apparatus for the manufacture of shoes. 3,444,590, 05-20-9, Cl. 018-030.

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Lueck, Irving B., to Bausch & Lomb, Incorporated. Neutralizer lens for lens testing instrument. 3,445,169, 05-20-69, Cl. 356-124.

Luke, Robert R., Robinson, Marshall M., and Thomson, Kenneth, to Shell Oil Company. Electrostatic monitoring camera. 3,445,856, 05-20-69, Cl. 346-001.

Lunsford, Thomas J. Component package with dust cover. 3,444,993, 05-20-69, Cl. 206-056.

Lusk, George E., to G & W Electric Specialty Company. Power cable termination with improved entrance system. 3,445,580, 05-20-69, Cl. 174-012.

Lustenader, Edward L., to General Electric Company. Heat exchanger. 3,444,924, 05-20-69, Cl. 165-164.

Luther, Gunter, Ludwig, Jurgen, and Schulze, Martin, to Heinrich Koppers Gesellschaft Mit Beschrankter Haftung. Plurality of extractive-distillation zones and stripping zones. 3,445,537, 05-20-69, Cl. 260-674.

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Lutzker, Robert S., 33 1/3 to Lutzer, Lawrence D. Can closure plug. 3,445,030, 05-20-69, Cl. 220-060.

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Maat, Hendrik J., and Ebregt, Johannes, to Koninklijke Zwavelzuurfabrieken v/h Ketjen N.V. Process for the production of a finely divided, non- gelatinous silicic acid especially suitable as a filler for natural and synthetic rubber and other elastomers. 3,445,189, 05-20-69, Cl. 023-182.

Maatschappij voor Electrische Bedrijfsautomatisering Electrofact N.V.: *See—*
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MacDowell, John F., to Corning Glass Works. Alpha-and betacristobalite glass-ceramic articles and methods. 3,445,252, 05-20-69, Cl. 106-039.

Mac Engineering and Equipment Company: *See—*
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Madden, Andrew Sidney, to Seetru Limited. Relief valves. 3,444,888, 05-20-69, Cl. 137-542.

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Mansfield, Donald L., and Tappan, Peter C., to U.S.M. Corporation. Lubrication pumping system. 3,444,959, 05-20-69, Cl. 184-006.

Maple, Telford Grant, to Raytheon Company. Semiconductor contact and interconnection structure. 3,445,727, 05-20-69, Cl. 317-107.

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Marcher, Jorgen, to Nielsen, H., & Son, Maskinfabrik A/S. Method of lifting objects of magnetizable material and a system for carrying the method into effect. 3,445,105, 05-20-69, Cl. 271-018.

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Markowitz, Jerome, Griffith, Errol Robert, and Wetherhold, James Richard. Electronic musical apparatus. 3,445,579, 05-20-69, Cl. 084-001.24

Marks, Alvin M., and Marks, Mortimer M. Photopic and scotopic 3-dimensional viewing system. 3,445,153, 05-20-69, Cl. 350-144.

Marks, Bruce G., to Philco-Ford Corporation. Flaw detection and marking system. 3,445,672, 05-20-69, Cl. 250-219.

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Marshall, Theodore W., Rankin, Frederick W., and Willett, Norman E., to Robertson, H. H., Company. Air conditioning apparatus. 3,445,317, 05-20-69, Cl. 165-039.

Martel, Jacques, Huynh, Chanh, Toromanoff, Edmond, and Nomine, Gerard, to Roussel-Uclaf. Novel process for the preparation of transchrysanthemumic acid. 3,445,499, 05-20-69, Cl. 260-464.

Martens, Alexander E., to Bausch & Lomb, Incorporated. Electrical control system for repetitive operation. 3,445,639, 05-20-69, Cl. 235-151.1

Martens, Alexander E., to Bausch & Lomb, Incorporated. Temperature compensating circuit for photomultiplier tubes. 3,445,664, 05-20-69, Cl. 250-207.

Martin, Harry C., to Dore, Louis A., Jr. Pool cleaner. 3,444,575, 05-20-69, Cl. 015-001.7

Martin, John R., to Calumet & Hecla, Inc. Device for bending, coiling, or straightening tubing. 3,444,716, 05-20-69, Cl. 072-135.

Martin, Keith F., and Mercer, Frank Brian, to Plastic Textile Accessories Limited. Apparatus for manufacturing plastic nets. 3,444,588, 05-20-69, Cl. 018-012.

Martin, Robert T. Potato storage method. 3,445,246, 05-20-69, Cl. 099-154.

Martin, Stephen P. Musical instrument. 3,444,772, 05-20-69, Cl. 084-402.

Martinovich, Robert J., to Phillips Petroleum Company. Stabilization of polymers with UV stabilizers and antioxidants. 3,445,424, 05-20-69, Cl. 260-045.85

Martz, Lyle F., to Westinghouse Electric Corporation, mesne. Variable speed control for position regulator motors. 3,445,739, 05-20-69, Cl. 318-018.

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Masuda, Seaichi, to Onoda Cemest Company, Limited. Apparatus for electrostatic precipitation of dust. 3,444,668, 05-20-69, Cl. 055-118.

Matisa Materiel Industriel S.A.: *See—*
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Matsuzaki, Hiroyuki, Shimizu, Shokichi, and Mizuo, Masahiko, to Fujitsu Limited. Adhesive material and method of using same to adhere ceramic material to metal. 3,445,210, 05-20-69, Cl. 065-043.

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Matthews, Robert E.: *See—*
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Matthews, Russel B., to Penn Controls, Inc. Fuel burner control utilizing thermocouple triggered silicon controlled rectifier. 3,445,174, 05-20-69, Cl. 431-059.

Maxwell, Emanuel, to Massachusetts Institute of Technology. Variable standard mutual inductance circuit with air core transformer and tap changing cascaded autotransformers. 3,445,753, 05-20-69, Cl. 323-043.5

Mayer, Endre A., to Bendix Corporation, The. Fluid control device. 3,444,878, 05-20-69, Cl. 137-081.5

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McAlpine, Charles H., and McGowan, Kenneth G., to Mac Engineering and Equipment Company. Method of casting intercell connections for batteries. 3,444,920, 05-20-69, Cl. 164-108.

McAndrew, Francis B., to Celanese Corporation. Copolymerization of trioxane with an epoxy- containing comonomer in the presence of an aldehyde. 3,445,433, 05-20-69, Cl. 260-067.

McBrien, James H., to Helmrick & Payne, Inc. Pipe protector. 3,445,144, 05-20-69, Cl. 308-004.

McCall, Andrew A. Collapsible fire escape ladder assembly. 3,444,958, 05-20-69, Cl. 182-093.

McCann, Joseph P., to Theobald Industries, The. Methods for producing glues and/or gelatins and protein and phosphate rich residues. 3,445,448, 05-20-69, Cl. 260-118.

McClure, Harold E., to Thermo King Corporation. Diesel fuel system. 3,444,871, 05-20-69, Cl. 137-015.

McCollough, John K., to Milliken Industrials Corporation. Wrapped coin package. 3,445,056, 05-20-69, Cl. 229-087.2

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McDowell, Hunter L., to S-F-D Laboratories, Inc. Mixed line magnetron circuits having strapped sections and tubes using same. 3,445,718, 05-20-69, Cl. 315-039.3

McGara, Homer J., and Spang, Edward B., to Sheller-Globe Corporation. Strip stock feed mechanism. 3,444,768, 05-20-69, Cl. 083-238.

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McKesson, James H., to Deering Milliken Research Corporation. Discharge printing a direct dye dyed haloalkanol crosslinked cellulose fabric and creaseproofing with an aminoplast. 3,445,177, 05-20-69, Cl. 008-017.

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McLoad, Kenneth W., to Schlumberger Technology Corporation. Electrical connector. 3,445,805, 05-20-69, Cl. 339-089.

McLoad, Kenneth W., to Schlumberger Technology Corporation. Geophone housing and take-out. 3,445,809, 05-20-69, Cl. 340-017.

McManus, Lee C., to Clyde Iron Works, Inc. Compound wound direct current generator having a split shunt field winding. 3,445,749, 05-20-69, Cl. 322-063.

McNulty, John F., to International Telephone and Telegraph Corporation. Electrically polarized reed relay. 3,445,729, 05-20-69, Cl. 317-123.

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Mehalso, Paul J., to Standard Oil Company (Indiana). Stabilized terephthalate compositions. 3,445,504, 05-20-69, Cl. 260-475.

Meininger, Fritz, Signon, Anni, and Berner, Klaus, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Metal-containing disazo-dyestuffs. 3,445,450, 05-20-69, Cl. 260-148.

Meininger, Fritz, and Springer, Hartmut, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Azophthalocyanine dyestuffs. 3,445,449, 05-20-69, Cl. 260-147.

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Nelson, John D., to General Electric Company. Reaction of a spaced polyphenol, phenol and an aldehyde. 3,445,432, 05-20-69, Cl. 260-051.
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Rudo, Edward, Gerstein, Sidney, and Smith, Robert G. Device for automatically diverting telephone calls. 3,445,604, 05-20-69, Cl. 179-018.

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Smith, Gus T., to Marvel Specialty Company, mesne. Throat plate. 3,444,704, 05-20-69, Cl. 066-125.

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Yamane, Seiji. Machine usable as a rotary pump or a heat engine. 3,444,820, 05-20-69, Cl. 103-140.

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Young, Reginald S., and Pitcher, David Edward, to British Aluminium Company Limited, The. Methods of and apparatus for testing molten metal. 3,444,726, 05-20-69, Cl. 073-061.

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Yu, John: *See—*
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Zak, Theodore J.: *See—*
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Dietrich, Rolf, Ulffers, Dirk, and Warstat, Hans, 3,445,170.

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Crumly, Charles B., 3,445,748.

Zepp, Donald J.: *See—*
Trickett, Terrance, Zepp, Donald J., Horne, Benjamin, and Brill, Thomas 3,445,635.

Zettler, Toby T.: *See—*
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Quinn, Frederic R.

CLASSIFICATION OF PATENTS

ISSUED MAY 20, 1969

NOTE.—First number, class; second number, subclass; third number, patent number

2— 8	3,444,560	32— 56	3,444,622	65— 65	3,445,213	89— 1.811	3,444,779	112—218	3,444,833	137—392	3,444,882
	3,444,561	33— 27	3,444,623	99	3,445,214	34	3,444,780	114—102	3,444,834	504	3,444,885
338	3,444,562	34— 3	3,444,624	134	3,445,215	90— 11	3,444,781	112	3,444,835	541	3,444,886
4—142	3,444,563	9	3,444,625	145	3,445,216	.64:	3,444,782	126	3,444,836		3,444,887
185	3,444,564	15	3,444,626	172	3,445,217	91— 41	3,444,783	115— 1	3,444,837	542	3,444,888
187	3,444,565	23	3,444,627	235	3,445,218	413	3,444,784	116— 63	3,444,838	547	3,444,889
228	3,444,566	57	3,444,628	267	3,445,219	434	3,444,785	117— 23	3,445,260	562	3,444,890
5— 90	3,444,567	35— 10.4	3,445,577	66— 86	3,444,702		3,444,786	36.9	3,445,261	608	3,444,891
8— 3	3,445,176	50	3,444,629	87	3,444,703	462	3,444,787	37	3,445,262	624.15:	3,444,892
17	3,445,177	36— 2.5	3,444,630	125	3,444,704	92—120	3,444,788	47	3,445,263	.2	3,444,896
94.16:	3,445,178	7.8	3,444,631	148	3,444,705	121	3,444,789		3,445,264	625.28:	3,444,894
9— 6	3,444,568	32	3,444,632	154	3,444,706	125	3,444,790	49	3,445,265	.4	3,444,893
14	3,444,569	37—142	3,444,633	190	3,444,707	93— 1	3,444,791	70	3,445,266	.65:	3,444,895
331	3,444,570	38— 66	3,444,634	68— 12	3,444,708	35	3,444,792	72	3,445,267	138— 45	3,444,897
12— 12.5	3,444,571	40— 2	3,444,635	23	3,444,709	94— 38	3,444,793	76	3,445,268	89	3,444,898
142	3,444,572	106.25:	3,444,636	184	3,444,710	95— 10	3,444,794	88	3,445,269	139—122	3,444,899
	3,444,573	.53:	3,444,637	70—276	3,444,711	31	3,444,795	102	3,445,270		3,444,900
14— 71	3,444,574	158	3,444,638	423	3,444,712		3,444,796	106	3,445,271	125	3,444,901
15— 1.7	3,444,575	42— 1	3,444,639	71— 9	3,445,220	61	3,444,797	119	3,445,272		3,444,902
28	3,444,576	42	3,444,640	72	3,445,221	64	3,444,798		3,445,273	273	3,444,903
50	3,444,577	75	3,444,641	106	3,445,222	96— 1	3,445,224	121	3,445,274	376	3,444,904
104.3	3,444,578	43— 6	3,444,642	72— 8	3,444,713		3,445,225	124	3,445,275	140— 75	3,444,905
118	3,444,579	17	3,444,643	76	3,444,714	.1	3,445,226	138.8	3,445,276	141— 20	3,444,906
302	3,444,580	44— 36	3,445,204	84	3,444,715	.5	3,445,227	139.4	3,445,277	143—135	3,444,907
314	3,444,581	62	3,445,205	135	3,444,716	3	3,445,228	141	3,445,278	145— 36	3,444,908
324	3,444,582	69	3,445,206	177	3,444,717	28	3,445,229	143	3,445,279	146— 2	3,444,909
340	3,444,583	46— 61	3,444,644	419	3,444,718	48	3,445,230	215	3,445,280	16	3,444,910
344	3,444,584	135	3,444,645	462	3,444,719	84	3,445,231	217	3,445,281	28	3,444,911
18— 1	3,444,585	244	3,444,646	73— 9	3,444,720	90	3,445,232	232	3,445,282	34	3,444,912
5.1	3,444,586	47— 1.4	3,444,647	23	3,444,721		3,445,233	118— 2	3,444,839	98	3,444,913
8	3,444,587	49—248	3,444,648	.1	3,444,722		3,445,234	236	3,444,840	148— 6.16:	3,445,298
12	3,444,588	352	3,444,649	32	3,444,723	95	3,445,235	122— 6	3,444,841	31.55:	3,445,299
19	3,444,589	360	3,444,650	40.5	3,444,724	98— 1	3,444,799	123— 8	3,444,842	175	3,445,300
30	3,444,590	51— 9	3,444,651	.7	3,444,725	40	3,444,800		3,444,843	177	3,445,301
42	3,444,591	89	3,444,652	61	3,444,726		3,444,801	41.36:	3,444,844	186	3,445,302
19— 66	3,444,592	165	3,444,653	78	3,444,727	115	3,444,802	.82:	3,444,845	187	3,445,303
107	3,444,593	267	3,444,654	97	3,444,728	99— 76	3,445,236	119	3,444,846	149— 19	3,445,304
239	3,444,594	287	3,444,655	100	3,444,729	77.1	3,445,237	122	3,444,847	39	3,445,305
21— 2.7	3,445,179	312	3,444,656	115	3,444,730	91	3,445,238		3,444,848	96	3,445,306
56	3,445,180	52— 94	3,444,658	144	3,444,731	93	3,445,239	140	3,444,849	150— 39	3,444,914
23— 2	3,445,181	149	3,444,659	150	3,444,732	107	3,445,240	148	3,444,850	151— 14	3,444,915
	3,445,182	288	3,444,657	167	3,444,733	116	3,445,241	164	3,444,851	22	3,444,916
87	3,445,183	309	3,444,660	170	3,444,734	130	3,445,242	188	3,444,852	41.76:	3,444,917
112	3,445,184	376	3,444,661	182	3,444,735	131	3,445,243	124— 30	3,444,853	152—347	3,444,918
121	3,445,185	623	3,444,662	205	3,444,736	147	3,445,244	126—110	3,444,854	156— 73	3,445,307
141	3,445,186	650	3,444,663	290	3,444,737		3,445,245	116	3,444,855	86	3,445,308
143	3,445,187	732	3,444,664	304	3,444,738	154	3,445,246	127— 58	3,445,283	89	3,445,309
154	3,445,188	53—112	3,444,665	355	3,444,739	199	3,445,247	128— 2.05:	3,444,856	230	3,445,310
182	3,445,189	167	3,444,666	359	3,444,740	229	3,445,248	142	3,444,857	307	3,445,311
209.4	3,445,190	55—113	3,444,667	379	3,444,741	285	3,444,803	260	3,444,858	332	3,445,312
277	3,445,191	118	3,444,668	425.6	3,444,742	302	3,444,804	284	3,444,859	433	3,445,313
	3,445,192	230	3,444,669	517	3,444,743	340	3,444,805	349	3,444,860	521	3,445,314
281	3,445,193	257	3,444,670	74— 5	3,444,744	100—229	3,444,806	350	3,444,861	575	3,445,315
	3,445,194	267	3,444,671	.6	3,444,745	101— 53	3,444,807	528	3,444,862	160—184	3,444,919
288	3,445,195	306	3,444,672	82	3,444,746	125	3,444,808	131—267	3,444,863	161— 1	3,445,316
	3,445,196	56— 1	3,444,673	88	3,444,747	470	3,444,809	132— 38	3,444,864	46	3,445,318
312	3,445,197	25.4	3,444,674	217	3,444,748	102— 20	3,444,810	53	3,444,865	58	3,445,319
315	3,445,198	295	3,444,675	230.17:	3,444,749	23	3,444,811	126	3,444,866	83	3,445,320
	3,445,199	296	3,444,676	242.14:	3,444,750	39	3,444,812	134— 3	3,445,284	92	3,445,321
338	3,445,201	57— 12	3,444,677	409	3,444,751	42	3,444,813	9	3,445,285	113	3,445,322
357	3,445,202	53	3,444,678	477	3,444,752	81	3,444,814	32	3,445,286	162	3,445,323
366	3,445,200	59	3,444,679	493	3,444,753	83	3,444,815	123	3,444,867	165	3,445,324
24— 73	3,444,595		3,444,680	501	3,444,754	103— 1	3,444,816	143	3,444,868	166	3,445,325
	3,444,596	140	3,444,681		3,444,755	88	3,444,817	167	3,444,869	207	3,445,326
150	3,444,597		3,444,682	505	3,444,756	111	3,444,818	179	3,444,870	264	3,445,327
205.16:	3,444,598	157	3,444,683	523	3,444,757	125	3,444,819	136— 6	3,445,287	162— 19	3,445,328
236	3,444,599	161	3,444,684	559	3,444,758	140	3,444,820		3,445,288		3,445,329
28— 1	3,444,600	58— 95	3,444,685	567	3,444,759	263	3,444,821	83	3,445,289	164	3,445,330
45	3,444,601	60— 11	3,444,686	640	3,444,760	104— 8	3,444,822		3,445,290	338	3,445,331
29— 25.42:	3,444,602	30	3,444,687	740	3,444,761	105— 64	3,444,823		3,445,291	357	3,445,332
33	3,444,603	39.28:	3,444,688	754	3,444,762	366	3,444,824	86	3,445,292	164—108	3,444,920
	3,444,604	52	3,444,689	763	3,444,763	368	3,444,825		3,445,293	165— 21	3,444,921
157.1	3,444,605	53	3,444,690	822	3,444,764	106— 15	3,445,249		3,445,294	26	3,444,922
182.8	3,445,203	54.6	3,444,691	876	3,444,765	38.22:	3,445,250	90	3,445,295	29	3,444,923
200	3,444,606	64	3,444,692	75—123	3,445,223	.3	3,445,251	120	3,445,296	39	3,445,317
203	3,444,607	61— 5	3,444,693	77— 73.5	3,444,766	39	3,445,252	173	3,445,297	164	3,444,924
423	3,444,608	35	3,444,694	81— 63.1	3,444,767	40	3,445,253	137— 14	3,444,941	166	3,444,925
451	3,444,609	62— 3	3,444,695	83—238	3,444,768	50	3,445,254	15	3,444,871		3,444,926
470.1	3,444,610	28	3,444,696	420	3,444,769	52	3,445,255	.1	3,444,872	166— .5	3,444,927
.3	3,444,611	42	3,444,697	84— 1.04:	3,445,578	53	3,445,256	26	3,444,873	70	3,444,928
471.1	3,444,612	128	3,444,698	.24:	3,445,579	84	3,445,257	36	3,444,874	173	3,444,929
473.1	3,444,613	225	3,444,699	139	3,444,770	277	3,445,258	37	3,444,875	273	3,444,930
588	3,444,614	244	3,444,700	194	3,444,771	306	3,445,259	81.5	3,444,876	305	3,444,931
600	3,444,615	64— 3	3,444,701	402	3,444,772	107— 4	3,444,826		3,444,877	170—160.54:	3,444,932
621	3,444,616	65— 10	3,445,207	85— 9	3,444,773	9	3,444,827		3,444,878	172— 6	3,444,933
626	3,444,617	30	3,445,208	36	3,444,774	19	3,444,828		3,444,879	25	3,444,934
629	3,444,618	33	3,445,209	51	3,444,776	108— 53	3,444,829	106	3,444,880	780	3,444,935
630	3,444,619	43	3,445,210	61	3,444,775	136	3,444,830	112	3,444,881	795	3,444,936
30—231	3,444,620	56	3,445,211	86— 23	3,444,777	110— 33	3,444,831	207	3,444,883	174— 12	3,445,580
32— 14	3,444,621	59	3,445,212	89— 1.804	3,444,778	112—158	3,444,832	316	3,444,884	43	3,445,582

174– 47 : 3,445,583	204–141 : 3,445,355	226–199 : 3,445,048
50.52: 3,445,584	157.1 : 3,445,356	229– 14 : 3,445,049
59 : 3,445,585	158 : 3,445,357	3,445,050
130 : 3,445,586	159.21: 3,445,358	3,445,051
138 : 3,445,581	163 : 3,445,359	16 : 3,445,052
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394 : 3,444,940	195 : 3,445,363	87.2 : 3,445,056
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36 : 3,445,334	3,445,365	145 : 3,445,058
61 : 3,445,335	3,445,366	235 : 3,445,059
177–126 : 3,444,942	3,445,368	233– 15 : 3,445,060
180 : 3,444,943	3,445,369	20 : 3,445,061
210 : 3,444,944	197 : 3,445,370	29 : 3,445,062
178– 6.6 : 3,445,587	206 : 3,445,371	235– 61.11: 3,445,634
.8 : 3,445,588	212 : 3,445,372	3,445,635
7.1 : 3,445,589	219 : 3,445,373	.7 : 3,445,633
.2 : 3,445,590	270 : 3,445,374	92 : 3,445,636
22 : 3,445,591	278 : 3,445,375	150.2 : 3,445,637
33 : 3,445,592	302 : 3,445,376	151.1 : 3,445,638
67 : 3,445,593	206– 1 : 3,444,988	3,445,639
179– 1 : 3,445,594	3,444,989	.32: 3,445,640
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5 : 3,445,599	63.3 : 3,444,994	239–132.3 : 3,445,064
6 : 3,445,600	66 : 3,444,995	159 : 3,445,065
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18 : 3,445,602	104 : 3,445,378	318 : 3,445,067
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3,445,605	313 : 3,445,381	240– 7.1 : 3,445,644
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65 : 3,444,946	210– 24 : 3,445,382	242– 7.03: 3,445,071
71 : 3,444,947	62 : 3,445,383	.21: 3,445,072
79.2 : 3,444,948	94 : 3,445,000	26.3 : 3,445,073
82 : 3,444,949	98 : 3,445,001	27 : 3,445,074
105 : 3,444,950	108 : 3,445,002	55.12: 3,445,075
121 : 3,444,951	401 : 3,445,003	68.2 : 3,445,076
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33 : 3,444,956	14 : 3,445,008	248– 20 : 3,445,080
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93 : 3,444,958	3,445,010	186 : 3,445,082
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3,444,960	18 : 3,445,012	249–192 : 3,445,084
187– 1 : 3,444,961	38 : 3,445,013	250– 41.9 : 3,445,649
188– 1 : 3,444,962	77 : 3,445,014	3,445,650
32 : 3,444,963	138 : 3,445,015	43.5 : 3,445,651
39 : 3,444,964	3,445,016	49.5 : 3,445,652
96 : 3,444,965	309 : 3,445,017	51.5 : 3,445,653
264 : 3,444,966	450 : 3,445,018	65 : 3,445,654
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192– 4 : 3,444,968	768 : 3,445,020	71 : 3,445,656
61 : 3,444,969	215– 9 : 3,445,021	3,445,657
84 : 3,444,970	3,445,022	.5 : 3,445,658
85 : 3,444,971	40 : 3,445,023	83 : 3,445,659
3,444,972	3,445,024	.3 : 3,445,660
193– 35 : 3,444,973	219– 10.51: 3,445,616	3,445,661
194– 9 : 3,444,974	69 : 3,445,617	88 : 3,445,662
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214,245	214,251	214,230	36 : 214,155	214,238	214,201
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214,179	19 : 214,193	214,232	214,160	214,253	214,254
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17 : 214,166	214,237	214,189	214,170	214,172	51 : 214,200
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214,204	214,235	214,192	214,182	214,158	54 : 214,173
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214,211	214,244	214,249	214,203	214,241	214,236
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Plant Patents

12 : 2,888					

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

May 20, 1969 Volume 862 Number 3

TRADEMARKS

NOTICES

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 49,996 (CARROM), Shampaine Industries, Inc., Game boards; **Reg. No. 374,800** (KIKIT), Carrom Industries, Inc., Board game played with movable pieces; **Reg. No. 776,546** (KIK-IT), Shampaine Industries, Inc., Equipment (or apparatus), sold as units for playing various-type board games, **filed** Mar. 12, 1969, D.C., S.D.N.Y., Doc. 69–1016, *Affiliated Hospital Products Inc.* v. *Merdel Game Manufacturing Company.*

Reg. No. 374,800. (See Reg. No. 49,996.)

Reg. No. 383,960 (FORD), Ford Motor Company, Tractors, plows, and cultivators, and parts thereof; **Reg. No. 665,771,** same, Tractor-drawn, mounted and/or powered implements, accessories and parts thereof—namely, plows, tillers, cultivators, sub-soilers, middlebusters, harrows, planters, rakes, mowers, balkers, corn pickers, corn harvesters, picker-shellers, forage havesters, crop blowers, combines, loaders, dozers, snow plows, scoops, tractor mounted frames, tractor mounted blades, manure spreaders, rotary cutters, and post hole diggers, **filed** Mar. 13, 1969, D.C. N.H. (Concord), Doc. 2979, *Ford Motor Company* v. *Seacoast Tractor & Equipment Corporation.*

Reg. No. 389,704 (GOLDEN DIPT), Meletio Company, Food preparation, for ready mixed breading for pan frying; **Reg. No. 681,500,** same, Batter mix for coating foods preparatory to cooking; seasoned milled grain mixture for combining with ground meats, in preparing loafs, patties and the like; tartar sauce; and cocktail sauce; **Reg. No. 843,317** (GOLDEN DIPT AND DESIGN), Golden Dipt Corporation, Breading mix, batter mix, garlic dressing, vinegar and oil dressing, and combined sweet food sauce and glaze; **Reg. No. 781,430** (GOLDEN LOCK), Golden Dipt-Meletio Corporation, Breading mix, **filed** Feb. 7, 1969, D.C. M.D. Ala. (Montgomery), Doc. 2840–N, *DCA Food Industries, Inc.* v. *Giles Enterprises, Inc. and Hot-N-One Donut Co. of Alabama, Inc.*

Reg. No. 390,390 (HELI-COIL), Heli-Coil Corporation, Spark plug bushings; **Reg. No. 419,109,** same, Tool apparatus and machines for use in connection with screw connections and their parts—namely, screw-thread-tapping tools, coiling machines for wire thread inserts, tools for inserting and extracting wire thread bushings, staking tools for securing thread bushings in boss members; **Reg. No. 419,476,** same, Screw connections and parts of screw connections—namely, screws, bolts, studs, nuts, thread inserts and thread bushings, for use in drilled or threaded holes; **Reg. No. 514,560,** same, Gages for use in screw connections with or without wire thread—namely, screw thread gages and flush gages; **Reg. No. 516,681,** same, Tools, apparatus and machines for use in connection with screw connections and their parts—namely, screw-thread-tapping tools, coiling machines for wire thread inserts, tools for inserting and extracting wire thread bushings, staking tools for securing thread bushings in boss mem-

CONDITION OF TRADEMARK APPLICATIONS AS OF MARCH 31, 1969

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]	14,617
Date of oldest new application	February 20, 1968
Date of oldest amended application (filing date)	June 4, 1963

C. M. WENDT, Director, Trademark Examining Operation TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application	
	New	Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	6–21–68	6–4 –63
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	6–12–68	5–24–66
(III) P. S. BALL, Classes 19, 21, 23, 26, 31, 34, 35, 36	9–3 –68	1–21–66
(IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	2–20–68	6–1 –65
Renewals (All Classes)	1–21–69	----------
Sec. 12(c) Publications (All Classes)	2–5 –69	----------

Applications filed during the month of March 1969—2,850

Registrations Issued ---------- 296—No. 869,558 to No. 869,853
Renewals Issued ---------- 150

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $20.50 per annum, foreign mailing $5.75 additional; single copies, 40 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C. 20231.

bers; **Reg. No. 707,397,** same, Self-locking wire fasteners, screw locks, and self locking nuts; **Reg No. 759,898,** same, Screw thread inserts loaded in plastic strips for magazine feeding, **filed** Jan. 2, 1969, D.C., S.D.N.Y., Doc. 69–C–1, *Heli-Coil Corp.* v. *Columbia Nut & Bolt Corp.* Judgment of permanent injunction, Feb. 26, 1969.

Reg. No. 419,109. (See Reg. No. 399,390.)

Reg. No. 419,476. (See Reg. No. 399,390.)

Reg. No. 514,560. (See Reg. No. 399,390.)

Reg. No. 516,681. (See Reg. No. 399,390.)

Reg. No. 582,150 (DUTCH PANTRY LOTTIE KEMBERLING), Lottie Kemberling Dutch Pantry, Potato salad, macaroni salad, vegetable salad, beet salad, rice pudding, baked beans, pickled cabbage, macaroni and cheese; **Reg. No. 659,925** (DUTCH PANTRY AND DESIGN), Dutch Pantry Inc., Restaurant services; **Reg. No. 688,808** (DUTCH PANTRY), same, Bacon salad dressing, potato salad, macaroni salad, fruit salad, Dutch vegetable salad, pickled cabbage, baked lima beans, pineapple orange carrots, and orange rice revel (composed of gelatin, rice, milk, sugar, vanilla, and salt), sold in plastic, paper and glass containers, **filed** Mar. 18, 1969, D.C., S.D. Fla (Miami), Doc, 69–333–C–JE, *Dutch Pantry, Inc.* v. *Dutch Inns of America, Inc.*

Reg. No. 659,925. (See Reg. No. 582,150.)

Reg. No. 663,771. (See Reg. No. 383,960.)

Reg. No. 680,362 (NYTHRONICS), New York Transformer Co., Inc., Electrical coils, chokes, and transformers, **filed** Mar. 6, 1969, D.C., S.D.N.Y., Doc. 69–912, *Nytronics Inc.* v. *Monsanto Co.*

Reg. No. 681,500. (See Reg. No. 389,794.)

Reg. No. 684,132 (RICE-A-RONI), Golden Grain Macaroni Co., Prepared packaged rice and vermicelli dinner, **filed** Feb. 7, 1969, D.C., N.D. Ill. (Chicago), Doc. 69c275, *Golden Grain Macaroni Company* v. *I. J. Grass Noodle Company, Inc.*

Reg. No. 688,808. (See Reg. No. 582,150.)

Reg. No. 707,397. (See Reg. No. 399,390.)

Reg. No. 759,898. (See Reg. No. 399,390.)

Reg. No. 761,430. (See Reg. No. 389,794.)

Reg. No. 773,372 (PSI AND DESIGN), Programming and Systems, Inc., Instruction in the operation of data processing, including the operation of computer systems, and professional guidance in such operation, and advising in the applications of data processing systems, **filed** Feb. 5, 1969, D.C., S.D.N.Y., Doc. 69–477, *Programming & Systems Inc.* v. *Harold M. Francis, Camille Francis, Programming & Systems Institute of Minnesota.*

Reg. No. 776,546. (See Reg. No. 49,096.)

Reg. No. 814,295. (See Reg. No. 819,776.)

Reg. No. 814,296. (See Reg. No. 819,776.)

Reg. No. 814,297. (See Reg. No. 819,776.)

Reg. No. 819,776 (DESIGN LINED FOR COLORS RED AND BLUE), The Atlantic Refining Company, Motor fuels and lubricating oils and greases; **Reg. No. 814,296** (ATLANTIC AND DESIGN), same; **Reg. No. 814,295,** same; **Reg. No. 814,297,** same, **filed** Dec. 24, 1968, D.C. Conn. (New Haven), Doc. 12895, *Atlantic Richfield Company* v. *The Callahan Oil Co., Inc., Lehigh, Inc.*

Reg. No. 843,817. (See Reg. No. 389,794.)

Reg. No. 851,089. (See 3,401,944.)

3,401,944, J. S. De Metrick, TAPE CARTRIDGE INSERT; **Reg. No. 851,039** (GIDGET), Automatic Radio Mfg. Co., Inc., Adaptor for tape cartridges, **filed Feb. 5, 1969,** D.C., N.D. Ill. (Chicago), Doc. 69c237, *Automatic Radio Mfg. Co., Inc.* v. *Leonard Fish, Kinematrix, Inc., and Educational Dynamics, Inc.*

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 265,969. Autohaus International, Inc., Clearwater, Fla. Filed Mar. 6, 1967.

AUTOHAUS
INTERNATIONAL INCORPORATED

Class 101—Advertising and Business

For Technical Assistance and Planning Services Rendered to Automobile Repair Stations (Int. Cl. 35).

Class 103—Construction and Repair

For Installation and Repair Services Performed on Automobiles (Int. Cl. 37).

First use at least Feb. 20, 1967.

SN 270,311. The Cincinnati Time Recorder Company, Cincinnati, Ohio. Filed **May 1, 1967.**

CINCINNATI

Class 21—Electrical Apparatus, Machines, and Supplies

For Electrically Operated Bells—Namely, Electrically Operated Program Bells and Fire Alarm Bells, and Electrically Actuated Fire Alarms (Int. Cl. 9).

First use 1926.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Automatic Parking Equipment—Namely, Vehicle Gates and Token and Money Receiving Devices for Operating Vehicle Gates, Ticket Printers and Ticket Issuing Devices for Providing Tickets, Including Tickets With Time Imprints, for Use in Conjunction With Parking Lots and Rapid Transit Systems (Int. Cl. 7).

First use Jan. 25, 1963.

Class 26—Measuring and Scientific Appliances

For Horological Devices and Related Equipment—Namely, Time Recorders, Such as Job Clocks, In and Out Time Recorder Clocks, Cost Recorder Clocks, Master Clocks, Slave Clocks, and Program Clocks (Int. Cls. 9 and 14).

First use 1896.

Class 27—Horological Instruments

For Clocks (Int. Cl. 14).

First use 1896.

SN 274,680. Western Gold and Platinum Company, Belmont, Calif. Filed June 23, 1967.

WEAROX

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Flow Control Nozzle, Rotary Face Valves and Slide Valves (Int. Cl. 6).

First use Aug. 10, 1964.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Ball Bearings, Scraper Blades for Cleaning Filters, Plungers and Pistons and Cylinder Liners for Pumps, Wire Drawing Machine Capstans, Dies, and Separator Chamber Liners for Centrifugal Separators (Int. Cl. 7).

First use June 1, 1963.

Class 34—Heating, Lighting, and Ventilating Apparatus

For High Temperature Furnace Parts—Namely, Rollers, Spacers, and Blocks (Int. Cl. 11).

First use Sept. 21, 1965.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

For Mechanical Shaft Seal Rings and Pump Packing Sleeves (Int. Cl. 17).

First use Mar. 15, 1965.

SN 275,008. Jean Jacques Poliquin, d.b.a. Pharmacie Poliquin Enrg., Trois-Rivieres, Quebec, Canada. Filed June 29, 1967.

PROTECTO

Owner of Canadian Reg. No. 147,904, dated Nov. 4, 1966.

Class 38—Prints and Publications

For Cards (Perforated To Be Used in Rotative Files) for a Pharmacist's Use and Specifically Squared and Lined, in Order to Facilitate His Checking; and Control Cards Specifically Indicated for Patient's Use (Int. Cl. 16).

Class 101—Advertising and Business

For The Checking of Incompatibilities Among the Medicinals for One or Several Specified Persons; the Checking of Medicinal Abuses for One or Several Specified Persons; and To Locate Systematically One or Several Lost Prescriptions of Unknown Number, for Any Object or Reference (Int. Cl. 35).

SN 282,393. Pure Carbon Company, Inc., St. Marys, Pa. Filed Oct. 12, 1967.

PUREBON

Class 1—Raw or Partly Prepared Materials

For Carbon-Graphite Material (Int. Cl. 1).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Machinery Bearings (Int. Cl. 7).

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

For Seal Rings (Int. Cl. 17).

First use at least as early as 1952.

SN 283,054. A. L. Engelhardt Company, Los Angeles, Calif. Filed Oct. 28, 1967.

ALECO

Owner of Reg. Nos. 430,832 and 435,658.

Class 14—Metals and Metal Castings and Forgings

For Gold and Gold Alloys (Int. Cl. 14).

Class 44—Dental, Medical, and Surgical Appliances

For Equipment and Material Used in Fabricating Dental Prosthetic Appliances—Namely, Valve Assemblies, Vacuum Mixers, Water Bath Units, Furnaces, Casting Machines, Gold Stripping Units, Drill Presses, Lubricants, Polishing Compounds, Sprue Tubes, and the Like (Int. Cls. 5 and 10).

First use Sept. 26, 1945.

SN 285,286. Toyo Rayon Co., Ltd., Chuo-ku, Tokyo, Japan. Filed Nov. 21, 1967.

ELASFIT

Owner of Japanese Reg. Nos. 618,678, dated June 26, 1963, and 618,400, dated June 24, 1963.

Class 39—Clothing

For Articles of Clothing—Namely, Men's, Women's, and Children's Ski Pants, Short Pants, Trousers, Slacks, Anoraks, Jackets, Jumpers, Sweaters, Suits, Skirts, Dresses, and Swimming Suits, Excluding Special Athletic Use Apparel (Int. Cl. 25).

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Piece Goods To Be Used in Making Trousers, Slacks, Ski Pants, Anoraks, Jackets, and Swimming Suits (Int. Cl. 24).

SN 286,592. Ajax Plastic Products, Inc., Des Plaines, Ill. Filed Dec. 11, 1967.



Applicant disclaims the slogan "Plastics of Quality" and the illustration of a tumbler and bowl apart from the mark as shown.

Class 2—Receptacles

For Pails, Baskets, Decanters, Clothes Baskets, Stackable Bins, Food Containers, Dish Pans, Cereal Bowls, Basins, Utility Bins, Tumblers, Food Storage Dishes Used Particularly in Refrigerators and Freezers, and Crispers, All Made of Plastic (Int. Cl. 21).

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Plastic Drainboards (Int. Cl. 21).

Class 31—Filters and Refrigerators

For Plastic Ice Cube Trays (Int. Cl. 21).

First use 1955.

SN 293,878. Virgil L. Clinebell, Loveland, Colo. Filed Mar. 22, 1968.



Applicant disclaims, apart from the mark as shown on the drawing, the term "Ice."

Class 2—Receptacles

For Ice Containers—Namely, Plastic Bags for Ice (Int. Cl. 20).

Class 31—Filters and Refrigerators

For Insulated Cabinets for Storing Plastic Containers of Ice, and Ice Making Machines (Int. Cl. 11).

First use Sept. 16, 1966.

SN 294,547. Store Services, Inc., Atlanta, Ga. Filed Apr. 1, 1968.



Class 101—Advertising and Business

For Retail Grocery Store Services (Int. Cl. 35).

Class 103—Construction and Repair

For Gasoline Station Services (Int. Cl. 37).

First use Nov. 1, 1967.

SN 299,121. W. R. Grace & Co., New York, N.Y. Filed May 27, 1968.

Fabri-Cel

Class 39—Clothing

For Disposable Examination Gowns and Isolation Gowns (Int. Cl. 25).

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Disposable Pillow Cases, Sheets, and Examination Rolls (Int. Cl. 24).

First use May 3, 1968.

SN 306,000. Tyco Automotive Corp., Huntington Station, N.Y. Filed Aug. 26, 1968.

TYCO

Owner of Reg. No. 819,067.

Class 19—Vehicles

For Front Suspension Ball Joints and Hydraulic Brake Cylinder Cups and Boots for Motor Vehicles (Int. Cl. 12).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Automotive Oil Pump Assemblies and Parts Thereof and Hydraulic and Mechanical Valve Tappets or Lifters (Int. Cl. 12).

First use Feb. 1, 1967.

SN 306,705. Gax Corporation, Houston, Tex. Filed Sept. 6, 1968.

GAX

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Seals With Spacer Rings (Int. Cl. 6).

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

For Fluid Seals (Int. Cl. 17).

First use on or before July 10, 1968.

SN 306,726. The Different Drummer, Ltd., New York, N.Y. Filed Sept. 6, 1968.

THE DIFFERENT DRUMMER

Class 28—Jewelry and Precious-Metal Ware

For Jewelry, Including Rings, Beads, Pins, and Medallions (Int. Cl. 14).

Class 39—Clothing

For Men's and Women's Wearing Apparel—Namely, Men's and Women's Shoes, Pants, Shirts, Belts, Neckwear, Scarves, Hats, Gloves, Sweaters, Jackets, Coats and Capes and Men's underwear (Int. Cl. 25).

First use May 1967.

SN 310,424. Southwest Factories, Inc., Oklahoma City, Okla. Filed Oct. 24, 1968.

IMAGINEERING

Class 19—Vehicles

For Automotive Air Conditioners; Special Design Motor Truck Trailers (Int. Cls. 11 and 12).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Pumps and Compressors, and Valving Associated Therewith, Used in Handling Volatile Liquids and Gases; Car Crushing Machines (Int. Cl. 7).

Class 24—Laundry Appliances and Machines

For Portable Laundry Units Consisting of Washer and Drier (Int. Cl. 7).

First use on or about Aug. 20, 1968.

SN 315,712. John Wood Company, Muskegon, Mich. Filed Dec. 5, 1968.

ECO

Owner of Reg. No. 243,589.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Air Compressors; Reels for Hose Pipes Which Automatically Give Off the Hose Pipes Under Pull and Take Up the Slack on the Pipes Automatically When the Hose Pipes Are Released (Int. Cl. 7).

Class 26—Measuring and Scientific Appliances

For Pressure Gauges (Int. Cl. 9).

First use January 1927.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 283,637. Copolymer Rubber & Chemical Corporation, Baton Rouge, La. Filed Oct. 30, 1967.

NYSYN

For Nitrile Rubber (Int. Cl. 17).
First use Oct. 2, 1967.

SN 297,100. Stepan Chemical Company, Northfield, Ill. Filed May 1, 1968.

STEPANTHANE

Owner of Reg. Nos. 553,048, 785,420, and others.
For Organic and Synthetically Derived Resins for Use in Foams, Molding Materials, Paints, Adhesives, Polymers and Elastomers (Int. Cl. 1).
First use Feb. 16, 1968.

SN 297,101. Stepan Chemical Company, Northfield, Ill. Filed May 1, 1968.

STEPANPOL

Owner of Reg. Nos. 553,048, 785,420, and others.
For Organic and Synthetically Derived Resins for Use in Foams, Molding Materials, Paints, Adhesives, Polymers and Elastomers (Int. Cl. 1).
First use Jan. 18, 1968.

SN 302,129. Rexall Drug and Chemical Company, d.b.a. Action Plastics Company, Los Angeles, Calif. Filed July 5, 1968.



For Extruded Plastic Tubing (Int. Cl. 17).
First use June 6, 1968.

SN 302,966. Polyplastex United, Inc., Union, N.J. Filed July 17, 1968.

PANFLOR

For Laminated Rigid Vinyl Sheet Material With an Abrasive Non-Skid Surface Sold for Flooring and Other Uses in Industrial Arts (Int. Cl. 17).
First use May 7, 1962.

Class 2 — Receptades

SN 260,490. Bellaplast, Heller & Co., Wiesbaden-Schierstein, Germany. Filed Sept. 7, 1966.

BELLAPLAST

Owner of German Reg. No. 769,520, dated Oct. 25, 1962.
For Molded Plastic Receptacles for Packaging, Containing, and Serving Food and Miscellaneous Products—Namely, Tableware, Dishes, Trays, Storage Containers, Cups, Cupholders, and Covers for Some of the Foregoing (Int. Cl. 21).

SN 271,246. Ford Products Corporation, Valley Cottage, N.Y. Filed May 11, 1967.

AQUA BOOSTER

For Hot Water Storage Tanks (Int. Cl. 11).
First use in or about July 1966.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 279,721. Dura-Vent Corporation of California, Redwood City, Calif. Filed Sept. 6, 1967.

Demcor

For Plastic Cleanout Tray for Dog Kennel (Int. Cl. 20).
First use Aug. 24, 1967.

SN 290,810. A.M.S. Distributing Co., d.b.a. American Sport Company, Oakland, Calif. Filed Feb. 12, 1968.

GRIZZLY

For Hunting and Camping Equipment—Namely, Canteens and Covers, and Canteens and Belts (Int. Cl. 18).
First use Aug. 30, 1967.

Class 4 — Abrasives and Polishing Materials

SN 244,651. Angelus Shoe Polish Company, Culver City, Calif. Filed May 2, 1966.

For Wax and Paste Shoe Polishes, Leather Cream, Sole and Heel Dressing and Leather Shine and Dye Compositions (Int. Cl. 3).
First use in about February 1918.

SN 301,024. Artifex Chemische Fabrik Dr. Lohmann & Co., Hamburg, Germany. Filed June 21, 1968.

ARTIFEX

For Polishing and Grinding Bodies in the Form of Wheels, Slabs, Discs, Rings, Plates, Mounted Points, Cylinders, Blocks, Files, Sticks, Bells and Cones (Int. Cls. 7 and 8).
First use Mar. 24, 1924; in commerce April 1960.

SN 309,251. General Motors Corporation, Detroit, Mich. Filed Oct. 9, 1968.

ABRATRIX

For Grinding Wheels (Int. Cl. 7).
First use Aug. 27, 1968.

Class 6 — Chemicals and Chemical Compositions

SN 265,125. Textron Inc., Providence, R.I. Filed Feb. 20, 1967.

DRISOY

For Modified Soybean Oil for Use in the Manufacture of Coating Compositions (Int. Cl. 4).
First use March 1945.

SN 283,508. Burton, Parsons Chemicals, Inc., Washington, D.C. Filed Oct. 27, 1967.

ONE STEP

For Blood Stain for Preparing Blood and Bone Marrow Smears for Laboratory Use (Int. Cl. 1).
First use May 5, 1967.

SN 285,138. King-Kratz Corporation, St. Louis County, Mo. Filed Nov. 17, 1967.

E-Z CLOR PAC

No registration rights are claimed herein for the word "Pac" apart from the mark as shown in the drawing; but the applicant waives none of its common law rights in said mark or any feature thereof.
For Shipping and Dispensing Containers Holding Chlorine Tablets (Int. Cl. 1).
First use August 1965.

SN 285,507. Abbott Laboratories, North Chicago, Ill. Filed Nov. 24, 1967.

POLYCAT

For Organic Amine Catalyst for Polyurethanes (Int. Cl. 1).
First use Sept. 21, 1967.

SN 299,976. Geigy Chemical Corporation, Ardsley, N.Y. Filed June 7, 1968.

GEIGY

Owner of Reg. Nos. 307,766, 777,637, and others.
For Dyestuffs; Dyestuff Auxiliary Products; Chemical Preparations for Treating Textiles, Leather and Paper; Ultraviolet Absorbers; Antioxidants; Chelating Agents; Metal Chelates; Fluorescent Brighteners; Bacteriostats; Pigments; Emulsifiers; Surfactants; Wetting Agents; Additives for Tin-Plating; and Photographic Developers (Int. Cls. 1 and 2).
First use 1859.

SN 301,085. Narvon Products, Inc., d.b.a. Narvon Mines Ltd., Lancaster, Pa. Filed June 21, 1968.

ZETA FLOC

For Water Purification Compounds, Flocculating and Coagulating Agents (Int. Cl. 1).
First use Feb. 7, 1968.

SN 306,624. American Cyanamid Company, Wayne, N.J. Filed Sept. 5, 1968.

CALCOSET

Owner of Reg. Nos. 674,802, 773,049, and others.
For Dyes (Int. Cl. 2).
First use Apr. 25, 1968.

SN 306,692. Regis Chemical Company, Chicago, Ill. Filed Sept. 5, 1968.

REGISIL

For Chemical Reagent for Use in Gas Liquid Chromatography Analysis (Int. Cl. 1).
First use Oct. 31, 1967.

SN 306,794. Monsanto Company, St. Louis, Mo. Filed Sept. 6, 1968.

VOCOL

For Chemicals Used in the Acceleration of Rubber (Int. Cl. 1).
First use Aug. 8, 1967.

SN 314,585. Matthey Bishop, Inc., Malvern, Pa. Filed Dec. 16, 1968.

THT

For Platinum Catalysts for Industrial Use (Int. Cl. 1).
First use June 5, 1967.

Class 7 — Cordage

SN 309,395. Roy Norton, d.b.a. Safe-D Products Co., Milwaukee, Wis. Filed Oct. 10, 1968.

SAFE - D

For Load Lifting and Securing Straps and Fittings Therefor (Int. Cl. 22).
First use Aug. 30, 1968.

Class 8 — Smokers' Artides, Not Including Tobacco Products

SN 313,484. Sta-Rite Ginnie Lou, Inc., Shelbyville, Ill. Filed Dec. 3, 1968.

Bplite

For Ash Trays (Int. Cl. 34).
First use Nov. 12, 1968.

SN 314,108. A. Oppenheimer & Company, Inc., Maywood, N.J. Filed Dec. 10, 1968.

For Pipes (Int. Cl. 34).
First use Feb. 19, 1968.

Class 10 — Fertilizers

SN 300,753. Terra Chemicals International, Inc. Sioux City, Iowa. Filed June 18, 1968.

TEAM

For Chemical Fertilizer (Int. Cl. 1).
First use on or about Dec. 15, 1967.

SN 305,771. Wasatch Chemical Company, Salt Lake City, Utah. Filed Aug. 22, 1968.

No claim is made to the term "Chemical" apart from the mark in its entirety.
For Chemical Fertilizer (Int. Cl. 1).
First use at least as early as Jan. 1, 1937.

SN 311,293. Organic Compost Corporation, Germantown, Wis. Filed Nov. 4, 1968.

FERTILIFE

Owner of Reg. No. 623,711.
For Packaged Fertilizers and Soil Conditioners, Such as Composted Sheep Manure, Composted Cattle Manure and Peat Humus (Int. Cl. 1).
First use 1960.

SN 311,294. Organic Compost Corporation, Germantown, Wis. Filed Nov. 4, 1968.

Fertilife

Owner of Reg. No. 623,711.
For Packaged Fertilizers and Soil Conditioners, Such as Composted Sheep Manure, Composted Cattle Manure and Peat Humus (Int. Cl. 1).
First use Sept. 1, 1968.

Class 12 — Construction Materials

SN 272,815. Didier-Werke AG, Wiesbaden, Germany. Filed June 1, 1967.

NERACID

Owner of German Reg. No. 513,821, dated June 13, 1938.
For Refractory and Acid-Resisting Standard Bricks; Special Shaped Bricks and Shaped Pieces; Refractory and Acid-Resisting Mortars, Ramming and Patching Materials (Int. Cl. 19).

SN 286,649. The Joseph Dixon Crucible Company, Jersey City, N.J. Filed Dec. 11, 1967.

CORUNDITE

For Refractory Materials—Namely, Insulating and Fire Brick, Furnace Linings, High Temperature Cements, Refractory Castables, i.e. Refractory Material Which Can Be Poured Into Forms and Moulded on the Job To Meet Requirements of the User, and Special Shapes of Refractory Material, i.e. Any Odd Size or Shape of Fired Refractory Material (Int. Cls. 11 and 19).
First use 1924.

SN 287,797. Caldwell Manufacturing Company, Rochester, N.Y. Filed Dec. 29, 1967.

TRIM TILT

For Window Sash Balances (Int. Cl. 6).
First use May 16, 1967.

SN 288,779. Centerprise Building Systems Limited, London, England. Filed Jan. 15, 1968.

CEBUS

Owner of British Reg. Nos. 875,670 and 875,671, dated Feb. 16, 1965.
For Buildings Made of Cast Units, Cast Units for Incorporating Into Buildings, and Forms, Moulds, Shuttering and Moulding Tables Comprising Steel Formers for the Manufacturing of Concrete Forms for Use in Casting Building Units (Int. Cl. 6).

SN 290,036. Vertecs Corporation, Kirkland, Wash. Filed Jan. 31, 1968.

VERTAFOAM

For Thermally Insulated Pipe Conduits and Preformed Plastic Construction Materials Made to Order, as for Example, Roofs, Walls, Floors, and Ship and Dock Flotation Structures (Int. Cls. 17 and 19).
First use Dec. 15, 1967.

SN 296,244. Standard Oil Company, Flemington, N.J. Filed Apr. 23, 1968.

EDCO

For Plastic Laminated Sheets and Panels for General Use in the Industrial Arts (Int. Cl. 19).
First use Oct. 4, 1967.

SN 311,475. Fiberdome, Incorporated, Lake Mills, Wis. Filed Nov. 6, 1968.

fiberdome

For Silo Roofs (Int. Cl. 19).
First use May 7, 1968.

SN 312,012. Boise Cascade Corporation, Boise, Idaho. Filed Nov. 13, 1968.

RELESFORM

For Wooden Forms for Poured Concrete (Int. Cl. 19).
First use Aug. 10, 1967.

SN 314,099. Masonite Corporation, Chicago, Ill. Filed Dec. 10, 1968.

X-90

Owner of Reg. No. 751,133.
For Construction Board—Namely, Fiber Board, Composite Board, Hardboard, and Synthetic Lumber or Artificial Lumber for Various Construction Purposes (Int. Cl. 19).
First use Dec. 28, 1967.

SN 314,100. Masonite Corporation, Chicago, Ill. Filed Dec. 10, 1968.

RUF X-90

Owner of Reg. Nos. 751,133 and 807,144.
For Construction Board—Namely, Fiber Board, Composite Board, Hardboard, and Synthetic Lumber or Artificial Lumber for Various Construction Purposes (Int. Cl. 19).
First use Nov. 30, 1967.

SN 314,101. Masonite Corporation, Chicago, Ill. Filed Dec. 10, 1968.

COLORLOK X-90

Owner of Reg. Nos. 751,133 and 760,494.
For Construction Board—Namely, Fiber Board, Composite Board, Hardboard, and Synthetic Lumber or Artificial Lumber for Various Construction Purposes (Int. Cl. 19).
First use Dec. 28, 1967.

SN 314,102. Masonite Corporation, Chicago, Ill. Filed Dec. 10, 1968.

Provincial X-90

Owner of Reg. No. 751,133.
For Construction Board—Namely, Fiber Board, Composite Board, Hardboard, and Synthetic Lumber or Artificial Lumber for Various Construction Purposes (Int. Cl. 19).
First use June 24, 1968.

SN 314,103. Masonite Corporation, Chicago, Ill. Filed Dec. 10, 1968.

WEATHR X-90

Owner of Reg. Nos. 751,133 and 826,703.
For Construction Board—Namely, Fiber Board, Composite Board, Hardboard, and Synthetic Lumber or Artificial Lumber for Various Construction Purposes (Int. Cl. 19).
First use Feb. 12, 1968.

SN 314,581. Masonite Corporation, Chicago, Ill. Filed Dec. 16, 1968.

MOONSPOT

For Construction Board—Namely, Fiber Board, Composite Board, Hardboard, and Synthetic Lumber or Artificial Lumber for Various Construction Purposes (Int. Cl. 19).
First use Nov. 1, 1968.

SN 314,835. United Cement Company, West Point, Miss. Filed Dec. 18, 1968.

UCC

For Portland Cement and Masonry Cement (Int. Cl. 19).
First use Sept. 6, 1967.

SN 315,093. Noda Plywood Manufacturing Co., Ltd., Shimizu-shi, Shizuoka Prefecture, Japan. Filed Dec. 23, 1968.

NODACO

For Plywood (Int. Cl. 19).
First use Apr. 29, 1954; in commerce Apr. 29, 1954.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 267,449. Sphinxworks Muller & Co. Ltd., Soleure, Switzerland. Filed Mar. 23, 1967.

SPIREC

For Precision Screw Machine Parts—Namely, Precision Screws, Precision Nuts, and Precision Collars (Int. Cl. 6).
First use January 1931; in commerce January 1931.

SN 268,999. Swiss-Tech, Inc., Delavan, Wis. Filed Apr. 12, 1967.

STI

For Screw Machine Products—Namely, Bobbins, Leadscrews, Pinions, Knobs, Plungers, Firing Pins, Core Pins, Needle Valves, Studs, Rivets, Connectors, Eyelets, and Terminal Screws (Int. Cl. 6).
First use May 6, 1966.

SN 280,661. Whitaker Construction Company, Tucson, Ariz. Filed Sept. 18, 1967.

POOLMAID

For Automatic Swimming Pool Cleaning System, Comprised of Valves and Flexible Tubes (Int. Cl. 11).
First use Dec. 15, 1965.

SN 289,833. Ridgewood Instrument Company, Grandview, Mo. Filed Jan. 29, 1968.

R-1

For Steel Pipe Sleeve Clips (Int. Cl. 6).
First use Dec. 1, 1967.

SN 294,760. Vance Industries, Inc., Chicago, Ill. Filed Apr. 2, 1968.

PUNCH-TABS

For Sink Frames (Int. Cl. 6).
First use Jan. 15, 1968.

SN 299,861. Pulsation Controls Corporation, Santa Paula, Calif. Filed June 6, 1968.

PULSE-KIT

For Flow Tube Bundle Assemblies (Int. Cl. 6).
First use Jan. 4, 1968.

SN 305,904. The Allen Manufacturing Company, Hartford, Conn. Filed Aug. 26, 1968.

ALLEN HEAD

For Socket Screws (Int. Cl. 6).
First use Jan. 1, 1946.

SN 307,522. Universal Metal Hose Company, Chicago, Ill. Filed Sept. 16, 1968.

FLEXLINE

For Flexible Hose and Tubing, Fittings for Flexible Hose and Tubing, and Assemblies of Fittings and Flexible Hose or Tubing (Int. Cl. 17).
First use Sept. 6, 1968.

SN 310,778. Hillside Metal Ware Co., Hillside, N.J. Filed Oct. 29, 1968.

HILLWARE

Owner of Reg. No. 552,366.
For Baking Pans (Int. Cl. 21).
First use Jan. 10, 1948.

SN 317,421. Clayton Corporation, St. Louis, Mo. Filed Jan. 24, 1969.

CLAY-TWIN

Owner of Reg. No. 693,700.
For Dispensing Valves for Pressure Dispensers (Int. Cl. 6).
First use Jan. 17, 1969.

Class 14—Metals and Metal Castings and Forgings

SN 304,421. Yawata Iron & Steel Co., Ltd., Chiyoda-ku, Tokyo, Japan. Filed Aug. 5, 1968.

SUPERCOAT

Owner of Japanese Reg. No. 764,399, dated Dec. 14, 1967.
For Chemical Treated Steel Sheet (Int. Cl. 6).

Class 15—Oils and Greases

SN 301,463. Strohmeyer & Arpe Company, New York, N.Y. Filed June 26, 1968.

A—A 3723

For Mineral, Petroleum, and Montan Waxes (Int. Cl. 4).
First use August 1967.

SN 301,464. Strohmeyer & Arpe Company, New York, N.Y. Filed June 26, 1968.



For Mineral, Petroleum, and Montan Waxes (Int. Cl. 4).
First use August 1967.

SN 301,647. Standard Oil Company, Flemington, N.J. Filed June 28, 1968.

ENMIST

For Industrial Oils and Greases (Int. Cl. 4).
First use May 3, 1968.

SN 302,436. Monsanto Company, St. Louis, Mo. Filed July 10, 1968.

SANTOQUENCH

For Functional Fluid, Sold for Use as a Quenching Oil (Int. Cl. 4).
First use June 13, 1968.

SN 302,486. Bluegate Candle Company, Montara, Calif. Filed July 11, 1968.

ESSENCE OF CHRISTMAS

For Scented Wax Candle (Int. Cl. 4).
First use July 29, 1960.

SN 303,713. The Standard Oil Company, Cleveland, Ohio. Filed July 26, 1968.

QVO

For Motor Oil (Int. Cl. 4).
First use July 23, 1968.

SN 304,020. Shell Oil Company, New York, N.Y. Filed July 31, 1968.

MELINA

For Lubricating Oil, Especially Useful for Diesel Engines, Primarily Those Engaged in Marine Service (Int. Cl. 4).
First use at least as early as Feb. 19, 1968.

SN 304,499. The Perolin Company, Inc., New York, N.Y. Filed Aug. 6, 1968.

PETROSENE

For Fuel Oil Additive (Int. Cl. 1).
First use Apr. 22, 1958.

SN 305,035. Cook's Industrial Lubricants, Inc., Linden, N.J. Filed Aug. 13, 1968.

SUPER-TAP

For Tapping Compound Used in Metal Working Operations for Lubricating Purposes (Int. Cl. 4).
First use July 29, 1968.

SN 305,036. Cook's Industrial Lubricants, Inc., Linden, N.J. Filed Aug. 13, 1968.

TAP-MATE

For Tapping Compound Used in Metal Working Operations for Lubricating Purposes (Int. Cl. 4).
First use July 30, 1968.

SN 305,321. Farmland Industries, Inc., Kansas City, Mo. Filed Aug. 16, 1968.



For Diesel Fuel (Int. Cl. 4).
First use Dec. 19, 1967.

SN 305,760. Sno-Trik Company, Solon, Ohio. Filed Aug. 22, 1968.

CL 60

For Cutting Lubricant (Int. Cl. 4).
First use July 12, 1968.

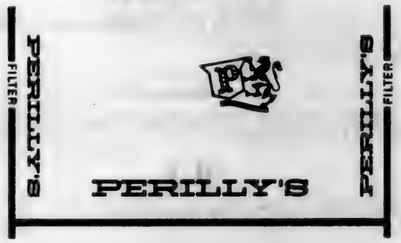
SN 313,782. Husky Oil Company of Delaware, Denver, Colo. Filed Dec. 6, 1968.

FASTEST GAS IN THE WEST

For Gasoline (Int. Cl. 4).
First use on or about May 1, 1959.

Class 17—Tobacco Products

SN 296,343. Perilly's Tobacco Manufacturers (Proprietary) Limited, Industria, Johannesburg, Republic of South Africa. Filed Apr. 23, 1968.



The words "Filter" and "Non Plus Ultra" are disclaimed apart from the mark as shown. The English translation of "Non Plus Ultra" is "nothing better." Owner of South African Reg. No. 63/1873, dated June 4, 1963, and U.S. Reg. No. 824,767.
For Cigarettes (Int. Cl. 34).

SN 299,226. Carlos A. Fuente, d.b.a. Arturo Fuente Cigar Factory, Tampa, Fla. Filed May 28, 1968.



The drawing is lined for the colors red and blue. The word "Moya" is Spanish for "a small, unglazed jar for boiling salt."
For Cigars (Int. Cl. 34).
First use Mar. 20, 1968.

SN 310,418. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed Oct. 24, 1968.

MR. M

For Cigarettes (Int. Cl. 34).
First use Sept. 17, 1968.

Class 18—Medicines and Pharmaceutical Preparations

SN 286,899. Bowman, Inc., Canton, Ohio. Filed Dec. 14, 1967.

PRE-PAK

For Cartons Containing Pharmaceutical Preparations (Int. Cl. 5).
First use Sept. 15, 1967.

SN 303,824. Reed & Carnrick, Kenilworth, N.J. Filed July 29, 1968.

LAXSIL

For Medicinal Preparation—Namely, a Laxative (Int. Cl. 5).
First use on or about Apr. 8, 1968.

SN 303,837. E. R. Squibb & Sons, Inc., New York, N.Y. Filed July 29, 1968.

TESULOID

For Sulfur Colloid Kit for Use in the Preparation of Radioactive Technetium Sulfur Colloid (Int. Cl. 5).
First use July 3, 1968.

Class 19—Vehides

SN 277,734. Unit Rig & Equipment Co., Tulsa, Okla. Filed Aug. 7, 1967.



The words "& Equipment Co." and the representation of the ore truck are disclaimed apart from the mark as a whole.
For Motorized Ore Trucks (Int. Cl. 12).
First use July 1963.

SN 277,735. Unit Rig & Equipment Co., Tulsa, Okla. Filed Aug. 7, 1967.



For Motorized Ore Trucks (Int. Cl. 12).
First use July 1963.

SN 286,253. Ferrari Soc. p. Az. Esercizio Fabbriche Automobili e Corse, Modena, Italy. Filed Dec. 5, 1965.

Ferrari

For Automobiles and Parts Therefor (Int. Cl. 12).
First use Nov. 14, 1965; in commerce Nov. 25, 1965.

SN 292,190. Docutel Corporation, Dallas, Tex. Filed Feb. 29, 1968.

TELETRANS

For Baggage Handling Vehicle Designed To Operate on Tracks or Rails in Airplane, Bus, and Railroad Terminals (Int. Cl. 12).
First use Jan. 27, 1964.

SN 295,743. S. S. Kresge Company, Detroit, Mich. Filed Apr. 16, 1968.

K-Craft

Owner of Reg. Nos. 743,912, 851,370, and others.
For Boats (Int. Cl. 12).
First use on or before Feb. 18, 1967.

SN 311,332. Inventive Industries, Inc., Chicago, Ill. Filed Nov. 5, 1968.

BUCKLE BUTLER

Applicant disclaims the word "Buckle" apart from the mark as shown and without waiver of any common law rights in the word.
For Seat Belt Buckle Holders Used in Automobiles and Similar Vehicles (Int. Cl. 12).
First use at least as early as Oct. 3, 1968.

SN 313,376. McCoy Manufacturing and Sales Co., Indianola, Iowa. Filed Dec. 2, 1968.

COMMANDER

For Pickup Camper Coaches (Int. Cl. 12).
First use August 1968.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 243,221. Central Dynamics Ltd., Pointe Claire, Quebec, Canada. Filed Apr. 12, 1966.



Priority claimed under Sec. 44(d) on Canadian application dated Mar. 21, 1966; Reg. No. 149,282, dated Feb. 10, 1967. The mark comprises the stylized letters "CD." The abbreviation "Ltd." is disclaimed apart from the mark as shown.
For Audio and Video Broadcasting Equipment Designed for Use in Radio and Television Stations—Namely, Transmitters, Amplifiers, Mixers, Switches, Tape Recorders, Signal Processing Devices for Standardizing Waveform Output, Generators, and Automatic Program Control Apparatus (Int. Cl. 9).
First use April 1965; in commerce April 1965.

SN 261,892. Technical Appliance Corporation, Sherburne, N.Y. Filed Jan. 3, 1967.

COLOR CAPTAIN

Applicant disclaims the term "Color" appearing as part of the mark.
For Television Antennas (Int. Cl. 9).
First use Nov. 9, 1966.

SN 291,664. The Ditchburn Organisation, Inc., Chicago, Ill. Filed Feb. 23, 1968.



Applicant disclaims the phrase "Music Maker" separate and apart from the mark as shown.
For Magnetic Tape Sound Recorder With Public Address System and Radio and Phonograph Inputs (Int. Cl. 9).
First use Nov. 30, 1967.

SN 293,713. General Electric Company, Schenectady, N.Y. Filed Mar. 20, 1968.

FUSA-FLEX

For Sealable Armor Tape Used for Electrical Insulating and Various Other Applications in the Industrial Arts (Int. Cl. 17).
First use Mar. 1, 1968.

SN 297,168. C. P. Clare & Company, Chicago, Ill. Filed May 2, 1968.

PICOREED

Owner of Reg. No. 859,994.
For Electromagnetically and Magnetically Operated Relays and Switching Assemblies (Int. Cl. 9).
First use April 1968.

SN 299,820. American Telecommunications Corporation, Los Angeles, Calif. Filed June 6, 1968.

DECO-TEL

For Telephones (Int. Cl. 9).
First use July 28, 1967.

SN 300,668. Aluminum Company of Canada, Limited, Montreal, Quebec, Canada. Filed June 18, 1968.

AL-FLEX

Priority claimed under Sec. 44(d) on Canadian application filed Dec. 18, 1967; Reg. No. 157,916, dated Aug. 9, 1968.
For Electrical Residential Building Wire (Int. Cl. 9).

SN 302,340. The Pyle-National Company, d.b.a. Petelco, Inc., Chicago, Ill. Filed July 9, 1968.

CONCORD

For Electrical Outdoor Lighting Fixtures and Parts Thereof (Int. Cl. 11).
First use June 21, 1968.

SN 303,877. T.N.E. Incorporated, Jefferson County, Mo. Filed July 30, 1968.

TNETEK

For Electrical and Electronic Equipment—Namely, Electric Motors, Vibration Detectors, Automatic Cut Off Units, Electronic Controllers, Specialty Circuits; and Electronic Sensors for Monitoring the Operation of Electrically Operable Equipment and Parts Therefor (Int. Cl. 9).
First use July 11 1968.

SN 304,006. Charles Messenger, North Hollywood, Calif. Filed July 31, 1968.

H.S.F.M.

For Wireless Intercom Systems (Int. Cl. 9).
First use Aug. 29, 1967.

SN 304,396. Rolecor of America, Inc., White Plains, N.Y. Filed Aug. 5, 1968.

FORTUNE

For Radio Receivers (Int. Cl. 9).
First use Feb. 2, 1968.

SN 304,506. Sprague Electric Company, North Adams, Mass. Filed Aug. 6, 1968.

SPAT

For Silicon Precision Alloy Transistors (Int. Cl. 9).
First use January 1962.

SN 304,944. Methode Electronics, Inc., Chicago, Ill. Filed Aug. 12, 1968.

OMNY-PAC

For Integrated Circuit Panels (Int. Cl. 9).
First use on or about May 3, 1968.

SN 305,251. Saki Magnetics, Inc., Santa Monica, Calif. Filed Aug. 15, 1968.



For Magnetic Heads for Electronic Equipment (Int. Cl. 9).
First use Mar. 8, 1968.

SN 306,471. The Ferrograph Company Limited, London, England. Filed Sept. 3, 1968.

FERROGRAPH

For Apparatus for Recording, Reproducing and Amplifying Electric Oscillations and Parts Thereof; Magnetizable Wire and Tape for Use as Sound-Recording Media (Int. Cl. 9).
First use 1949; in commerce 1953.

SN 308,179. Appalachian Electronic Instruments, Inc., Ronceverte, W. Va. Filed Sept. 25, 1968.

SCANNAIR

For Photoelectric Detectors for Monitoring Yarn in Weaving Process (Int. Cl. 9).
First use Feb. 1, 1968.

SN 308,774. Elco Elevator Corporation, Washington, D.C. Filed Oct. 8, 1968.

ELCOMATIC

For Automatic Computerized System for Controlling and Regulating Elevator Operations in Multiple Elevator Installations (Int. Cl. 9).
First use June 8, 1967.

SN 308,830. Union Carbide Corporation, New York, N.Y. Filed Oct. 3, 1968.

Lil Capt'n

For Flashlights (Int. Cl. 11).
First use on or about Feb. 2, 1968.

SN 308,919. Radiant Lamp Corporation, Hightstown, N.J. Filed Oct. 4, 1968.



For Mercury Vapor, Incandescent, and Quartz Halogen Lamps (Int. Cl. 11).
First use June 1963.

SN 316,871. Sola Basic Industries, Inc., Milwaukee, Wis. Filed Jan. 17, 1969.

CORRTHERM

For Electric Heating Elements for Industrial Furnaces (Int. Cl. 11).
First use May 15, 1967.

Class 22—Games, Toys, and Sporting Goods

SN 291,023. Colt's Inc., Hartford, Conn. Filed Feb. 14, 1968.
Owner of Reg. No. 628,517.

AGENT

For Toy Guns, Pistols, Rifles, and Holster Sets (Int. Cl. 28).
First use January 1968.

SN 296,840. Kohner Bros., Inc., East Paterson, N.J. Filed Apr. 29, 1968.

HEADACHE

For Equipment Sold as a Unit for Playing a Board-Type Parlor Game (Int. Cl. 28).
First use March 1968.

SN 296,842. Kohner Bros., Inc., East Paterson, N.J. Filed Apr. 29, 1968.

Woodies wood tile craft

The phrase "Wood Tile Craft" is disclaimed apart from the mark as shown. Owner of Reg. No. 840,810.
For Children's Wood Tile Craft Kit (Int. Cl. 28).
First use March 1968.

SN 298,287. Mattel, Inc., Hawthorne, Calif. Filed May 16, 1968.



For Sight and Sound Toy for Teaching the Sound and Meaning of Verbal Expressions and Pictures on Cards Inserted Into the Toy, the Sound Being Reproduced in a Plurality of Selected Languages To Teach What Is Shown on the Cards (Int. Cl. 28).
First use Mar. 6, 1967.

SN 307,169. Mattel, Inc., Hawthorne, Calif. Filed Sept. 12, 1968.

FRANCIE

Owner of Reg. No. 827,113.
For Children's Toy Electric Drawing Set (Int. Cl. 28).
First use March 1966.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 274,138. Univis Inc., Fort Lauderdale, Fla. Filed June 19, 1967.

GEO-CENTRIC

For Machinery and Parts Therefor for Blocking and Prescription Surfacing and Finishing of Ophthalmic Lenses (Int. Cl. 7).
First use Dec. 30, 1966.

SN 275,161. North and Judd Manufacturing Company, New Britain, Conn. Filed June 30, 1967.



Applicant disclaims the words "Division of North & Judd" and "Middletown, Conn." Owner of Reg. No. 822,682.
For Contractors' Pumps; and Pumps for Marine Use—Namely, Bilge Pumps, Galley Pumps, and Lavatory Pumps (Int. Cl. 7).
First use on or before Apr. 5, 1955.

SN 278,261. T. D. Williamson, Inc., Tulsa, Okla. Filed Aug. 14, 1967.

STOPPLE

Owner of Reg. Nos. 622,645 and 732,451.
For Machines for Preventing Flow in a Conduit by Inserting a Plugging Element Through a Laterial Opening in the Conduit (Int. Cl. 7).
First use on or about Sept. 5, 1956.

SN 280,717. C. M. McClung & Co., Inc., Knoxville, Tenn. Filed Sept. 19, 1967.

SUPER CHIEF

Owner of Reg. No. 861,931.
For Garden Tillers (Int. Cl. 7).
First use Oct. 10, 1961.

SN 286,140. The Hartford Special Machinery Company, Simsbury, Conn. Filed Dec. 4, 1967.

HARTFORD

Owner of Reg. No. 596,682 and others.
For Heading Machinery (Int. Cl. 7).
First use on or before Nov. 2, 1967.

SN 286,147. P. Kenneth Hunton, Plainfield, Conn. Filed Dec. 4, 1967.

MTE

For Molds for Plastic Injection for Producing Precision Plastic Parts (Int. Cl. 7).
First use Aug. 1, 1964.

SN 288,326. Joh. Kleinewefers Söhne, Krefeld, Germany. Filed Jan. 8, 1968.

Aeroflex

For Squeezing Rollers and Squeezing Mechanisms for the Processing of Textiles, and Textile Processing Machines Containing Such Squeezing Rollers and Squeezing Mechanisms, and Parts Thereof (Int. Cl. 7).
First use Sept. 5, 1958; in commerce Feb. 29, 1964.

SN 291,474. Alimak-Verken Aktiebolag, Skelleftea, Sweden. Filed Feb. 20, 1968.

SCANDO

Owner of Swedish Reg. No. 121,334, dated Oct. 13, 1967.
For Hoists for Passengers, Freight, and the Like (Int. Cl. 7).

SN 291,627. Nippon Kikai Keiso Kaisha, Ltd., Shibuya-ku, Tokyo, Japan. Filed Feb. 21, 1968.

NIKKISO

For Precision Pumps for the Chemical and Process Industries, and Parts Therefor (Int. Cl. 7).
First use Jan. 1, 1960; in commerce Apr. 1, 1966.

SN 293,065. Textron Inc., Cheshire, Conn. Filed Mar. 12, 1968.

Z-MILL

For Rolling Mills for Rolling, Reducing, Finishing Metal and/or Alloys in Either the Solid or Plastic State (Int. Cl. 7).
First use Mar. 1, 1968.

SN 295,862. William Van Lederman, d.b.a. Beevel Products, Burbank, Calif. Filed Apr. 17, 1968.

BEEVEL

For Hand Tools for Woodworking—Namely, Knives, Chisels, Gouges, Veiners, Drills, Rifflers, Rasps, Veneer Cutting Tools; Carving Tools for Wood, Leather, Plaster and Plastics Carving; and Hand Tools for Metal Working—Namely, Drills, Files, Saws, Wrenches, and Routing Tools (Int. Cl. 8).
First use about Sept. 25, 1957.

SN 296,937. Ateliers Roannais de Constructions Textiles, S.A., Roanne, France. Filed Apr. 30, 1968.

ARCT

Owner of U.S. Reg. No. 863,084.
For Textile Machinery Such as Precision Cone Winders, Uptwisters, and Ring Twisters (Int. Cl. 7).
First use at least as early as December 1963; in commerce December 1963.

SN 299,131. Hoover Ball and Bearing Company, Saline, Mich. Filed May 27, 1968.

hoover

Owner of Reg. Nos. 714,120 and 725,322.
For Blow Molding Machines and Related Accessory Equipment Therefor—Namely, Extrusion Manifolds, Extrusion Head Tooling, Molds, Trimmers, Resin Handling Equipment, Resin Blenders, Blown Article Handling and Loading Equipment, and Conveyors (Int. Cl. 7).
First use June 1960.

SN 299,938. Baughman Manufacturing Company, Inc., Jerseyville, Ill. Filed June 7, 1968.

SOL-TAC

For Mechanical Spreaders for Spreading Sand, Salt, and Other Materials on Highways (Int. Cl. 7).
First use May 1, 1968.

SN 300,465. Maremont Corporation, d.b.a. Saco-Lowell Maremont, Chicago, Ill. Filed June 14, 1968.

SNORKEL

For Sliver Condensers and Guide Tubes for Textile Machines (Int. Cl. 7).
First use May 1, 1968.

SN 300,657. Littlcomputers, Inc., Denver, Colo. Filed June 18, 1968.

LITTLCOMPUTER

For Mechanical Punch Card Sorting Machine (Int. Cl. 7).
First use Aug. 16, 1967.

SN 301,985. Washington Forge, Incorporated, Englishtown, N.J. Filed July 3, 1968.

HF HANFORD FORGE

For Stainless Steel Flatware (Int. Cl. 8).
First use on or about Apr. 1, 1968.

SN 302,441. Oneida Ltd., Oneida, N.Y. Filed July 10, 1968.

CAPISTRANO

For Stainless Steel Flatware (Int. Cl. 8).
First use June 18, 1968.

SN 306,777. The Huffman Manufacturing Company, Miamisburg, Ohio. Filed Sept. 6, 1968.

ELECTROMATIC

For Power-Operated Lawn Mowers (Int. Cl. 7).
First use at least as early as Jan. 26, 1961.

SN 306,782. Hermann Kronseder, d.b.a. Hermann Kronseder Maschinenfabrik, Bavaria, Germany. Filed Sept. 6, 1968.

STARMATIC

For Labeling Machines (Int. Cl. 7).
First use Mar. 12, 1968; in commerce Mar. 12, 1968.

SN 306,783. Hermann Kronseder, d.b.a. Hermann Kronseder Maschinenfabrik, Bavaria, Germany. Filed Sept. 6, 1968.

PASSANTA

For Labeling Machines (Int. Cl. 7).
First use Nov. 2, 1967; in commerce Nov. 2, 1967.

SN 306,800. Orange Roller Bearing Co., Inc., Orange, N.J. Filed Sept. 6, 1968.

FARMALON

For Cam Followers and Sleeve Bearing Inserts Therefor (Int. Cl. 7).
First use Apr. 12, 1968.

SN 307,006. The Cleveland Trencher Company, Cleveland, Ohio. Filed Sept. 10, 1968.

PRESTO

For Cutting Tooth for Trenching Machines (Int. Cl. 7).
First use about 1946.

SN 307,153. Trim-Master Corporation, Temple, Pa. Filed Sept. 11, 1968.

STEIN

For Machines for Cutting Textile Strips Into Preselected Lengths (Int. Cl. 7).
First use at least as early as April 1957.

SN 307,599. Washington Forge, Incorporated, Englishtown, N.J. Filed Sept. 17, 1968.

LYNCROFT

For Stainless Steel Flatware (Int. Cl. 8).
First use on or about July 1, 1968.

SN 307,600. Washington Forge, Incorporated, Englishtown, N.J. Filed Sept. 17, 1968.

AUTUMN ROSE

For Stainless Steel Flatware (Int. Cl. 8).
First use on or about July 1, 1968.

SN 309,004. Air Techniques Incorporated, New Hyde Park, N.Y. Filed Oct. 7, 1968.

COMPRESSO-DRI

For Air Compressors With Dehydrators in Unitary Relation (Int. Cl. 7).
First use Mar. 27, 1968.

SN 309,150. George H. Alexander Machinery Limited, Birmingham, England. Filed Oct. 8, 1968.

EFAMATIC

Owner of British Reg. No. 918,948, dated Dec. 27, 1967.
For Metal Cutting Machines and Cutting Tools for Use Therewith (Int. Cl. 7).

SN 316,372. Eversharp, Inc., Milford, Conn. Filed Jan. 13, 1969.

THE BLAZOR

For Safety Razors, Safety Razor Blades, and Dispensers Therefor (Int. Cl. 8).
First use Dec. 12, 1968.

SN 316,373. Eversharp, Inc., Milford, Conn. Filed Jan. 13, 1969.

THE INCREDIBLE

For Safety Razors, Safety Razor Blades, and Dispensers Therefor (Int. Cl. 8).
First use Dec. 12, 1968.

SN 316,374. Eversharp, Inc., Milford, Conn. Filed Jan. 13, 1969.

CHEESE-CAKE

For Safety Razors, Safety Razor Blades, and Dispensers Therefor (Int. Cl. 8).
First use Dec. 12, 1968.

SN 316,376. Eversharp, Inc. Milford, Conn. Filed Jan. 13, 1969.

THE GIRL THING

For Safety Razors, Safety Razor Blades, and Dispensers Therefor (Int. Cl. 8).
First use Dec. 12, 1968.

SN 316,683. SFM Corporation, Union, N.J. Filed Jan. 15, 1969.

MIL-PAC

For Machines and Parts Thereof, Used for Processing, for Pulverizing and for Compacting Waste Material and Garbage (Int. Cl. 7).
First use at least as early as Oct. 15, 1968.

Class 25—Locks and Safes

SN 299,333. Eagle Lock Corporation, Terryville, Conn. Filed May 29, 1968.

3 STAR * * * SECURITY

For Locks (Int. Cl. 6).
First use May 15, 1967.

Class 26—Measuring and Scientific Appliances

SN 271,149. International Salt Company, Clarks Summit, Pa. Filed May 10, 1967.

STERLING LIQUID SALTER

The exclusive right to the use of the term "Liquid Salter" is disclaimed apart from the entire mark as shown. Owner of Reg. Nos. 539,172, 561,769, and 679,450.
For Machines for Dispensing Brine in Measured Amounts, and Parts Thereof (Int. Cl. 9).
First use on or about Apr. 17, 1967.

SN 273,953. Fox Valley Instrument Company, Cheboygan, Mich. Filed June 15, 1967.

Fox Valley

For Internal Combustion Engine Testing Apparatus—Namely, Ammeters; Voltmeters; Ohmmeters; Tachometers; Cam Dwell Angle Meters; Spark Coil Testers; Capacitor Testers; Diode Testers; Remote Starter Switches; Timing Lights; Spark Analyzers; and Combinations and Parts Thereof; Vacuum Gauges; and Compression Gauges (Int. Cl. 9).
First use at least as early as 1951.

SN 277,349. Dero Research and Development Corporation, Huntington, N.Y. Filed Aug. 2, 1967.

SAGE 1

For Electronic Calculators (Int. Cl. 9).
First use Oct. 21, 1965.

SN 288,657. Conforma Laboratories, Inc., Norfolk, Va. Filed Oct. 23, 1967.

PARA-BLENDIC

For Contact Lenses (Int. Cl. 9).
First use Feb. 1, 1964.

SN 292,002. Nippon Kogaku Kabushiki Kaisha, Chuo-ku, Tokyo, Japan. Filed Feb. 27, 1968.

MICROFLEX

For Optical and Photographic Instruments and Parts Thereof—Namely, Still and Motion Picture and Photographic Instruments for Microscopes (Int. Cl. 9).
First use Mar. 1, 1966; in commerce Apr. 20, 1966.

SN 292,645. Visual Graphics Corporation, New York, N.Y. Filed Mar. 6, 1968.

VGC

For Photography Equipment—Namely, Photographic Lettering Compositor (Int. Cl. 9).
First use Aug. 15, 1966.

SN 296,459. Science Kit, Inc., Tonawanda, N.Y. Filed Apr. 24, 1968.

SK

Owner of Reg. No. 727,473.
For Portable Laboratory Equipment and Apparatus for Science Instruction (Int. Cl. 9).
First use on or about Mar. 31, 1967.

SN 299,193. Allied Impex Corp., New York, N.Y. Filed May 28, 1968.

SENSOMAT

For Photographic Cameras, and Accessories Therefor—Namely, Lens, Cases, Finders, Filters, Lighting Equipment, and Focusing Devices (Int. Cls. 9 and 11).
First use May 16, 1968.

SN 299,456. Ernest Grundlehner, Spring Lake, N.J. Filed May 31, 1968.

ELEMOTO

For Sliding Scale Guide Card for Relative Size Selection of Screw, Woodruff Key, Pipe Thread, and Rivet (Int. Cl. 9).
First use Mar. 10, 1942.

SN 306,283. Time Systems Corporation, Mountain View, Calif. Filed Aug. 29, 1968.

TSC

For Computing Counters (Int. Cl. 9).
First use June 13, 1968.

SN 306,973. Leedal, Incorporated, Chicago, Ill. Filed Sept. 3, 1968.

LEEDAL

For Photographic Equipment, Comprising Tanks, Trays and Sinks for Photographic and X-Ray Developing (Int. Cl. 9).
First use May 1946.

SN 309,436. Burleigh Brooks Inc., Englewood, N.J. Filed Oct. 11, 1968.

VERIWIDE 100

For Photographic Cameras (Int. Cl. 9).
First use on or about Apr. 19, 1959.

SN 309,550. Donnelly Mirrors, Inc., Holland, Mich. Filed Oct. 14, 1968.

DMI

For Scientific Lenses (Int. Cl. 9).
First use on or about Dec. 1, 1967.

SN 310,678. James S. Luster, San Diego, Calif. Filed Oct. 28, 1968.

JIFFY CHECKER

For Price Comparator or Unit Price-Weight Ratio Comparator (Int. Cl. 9).
First use Oct. 9, 1968.

Class 27—Horological Instruments

SN 307,692. Tucker-Lowenthal Co., Chicago, Ill. Filed Sept. 18, 1968.

PAUL SAISON

The mark is a fanciful name, and not the name of any living person to the knowledge of applicant.
For Wrist Watches (Int. Cl. 14).
First use July 19, 1968.

Class 28—Jewelry and Precious-Metal Ware

SN 287,693. Phillip Silverstein, d.b.a. Phil Jewelers, Inc., Anderson, S.C. Filed Dec. 8, 1967.

GEM-SAKE

For Diamond Rings (Int. Cl. 14).
First use Jan. 1, 1966.

SN 293,877. Abraham Zacroisky & Sons, Inc., Miami, Fla. Filed Mar. 21, 1968.

Skyline

For Jewelry (Int. Cl. 14).
First use Jan. 2, 1963.

SN 301,856. Mida Mfg. Inc., Philadelphia, Pa. Filed July 2, 1968.

DOTS

For Jewelry for Personal Use (Int. Cl. 14).
First use June 1967.

SN 309,402. The Arthur M. Ross Company, Inc., Los Angeles, Calif. Filed Oct. 10, 1968.

AR

The mark consists of a fanciful representation of the letters "AMR."
For Costume Jewelry—Namely, Rings, Earrings, Pins, Necklaces, Jeweled Hair Ornaments, Anklets, Jeweled Key Rings, and Bracelets (Int. Cl. 14).
First use Sept. 1, 1968.

SN 309,541. Beatrix Jewelry Company, Pawtucket, R.I. Filed Oct. 14, 1968.

B.J.

For Jewelry (Int. Cl. 14).
First use on or about June 12, 1962.

SN 311,236. Coro, Inc., Providence, R.I. Filed Nov. 4, 1968.

MINI-CLIP FOR MAXI-COMFORT

For Earrings (Int. Cl. 14).
First use on or about Oct. 21, 1968.

SN 312,532. The Woodlin Shirt Corp., Carteret, N.J. Filed Nov. 18, 1968.

DAGGER

Owner of Reg. No. 830,638.
For Costume Jewelry (Int. Cl. 14).
First use Oct. 25, 1968.

SN 316,732. Buccellati Silver, Ltd., New York, N.Y. Filed Jan. 16, 1969.

GRANDE IMPERIALE

For Sterling Silver Flatware (Int. Cl. 8).
First use Jan. 7, 1969.

Class 29—Brooms, Brushes, and Dusters

SN 307,958. American Uniform Company, Cleveland, Tenn. Filed Sept. 28, 1968.

DUST-TEX

Owner of Reg. Nos. 337,545 and 772,503.
For Dust Cloths, Dust Mops and Mop Holders (Int. Cl. 21).
First use in or about 1956.

Class 32—Furniture and Upholstery

SN 301,607. Thayer Coggin, Inc., High Point, N.C. Filed June 28, 1968.

ENVIRONMENT 70

For Furniture—Namely, Chairs (Int. Cl. 20).
First use at least as early as June 3, 1968.

SN 306,003. Waldron Furniture Manufacturing Corp., Waldron, Ark. Filed Aug. 26, 1968.

ZAMARA

For Upholstered Furniture Classified as Spanish Type Design or Mediterranean Design Sofas, Chairs, Sofa Sleepers and Sofa Beds (Int. Cl. 20).
First use May 1, 1968.

SN 308,272. Butler-Johnson Corporation, San Jose, Calif. Filed Sept. 26, 1968.

CAMEO-CRAFT

For Laminated Plastic Counter Tops (Int. Cl. 20).
First use July 18, 1968.

Class 33 — Glassware

SN 289,876. Compagnie de Saint-Gobain, Neuilly-sur-Seine (Hauts-de-Seine), France. Filed Jan. 30, 1968.

PARSOL

Owner of French Reg. No. 739,483, dated Sept. 15, 1967.
For Glass for Vehicles—Namely, Windshield Glass and Porthole Glass; Mirror Glass, and Colored Glass (Int. Cl. 21).

SN 293,480. Corning Glass Works, Corning, N.Y. Filed Mar. 18, 1968.

CHEMCOR

For Flat Glass, Safety Glass, and Glass for Windshields (Int. Cls. 19 and 21).
First use Aug. 1, 1963.

SN 307,236. Prismo Safety Corporation, Huntingdon, Pa. Filed Sept. 12, 1968.

CHROMOSPHERES

The representation of the glass sphere in the drawing is disclaimed apart from the mark as shown.
For Glass Spheres Useful in Traffic Markings on the Highway and on Other Bases Where Safety Indicators Are Essential or Required (Int. Cl. 21).
First use July 22, 1968.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 288,277. Brulé Incinerator Corporation, Blue Island, Ill. Filed Jan. 8, 1968.

BRULE

Owner of Reg. No. 619,062.
For Incinerators and Waste Disposal Furnaces and Parts Thereof for Replacement and Repair (Int. Cl. 11).
First use on or before July 1, 1946.

SN 302,064. Federal Pacific Electric Company, Newark, N.J. Filed July 5, 1968.

THERMO-SILL

For Electric Space Heaters (Int. Cl. 11).
First use on or before Sept. 1, 1967.

SN 303,452. Wm. Steinen Mfg. Co., Parsippany, N.J. Filed July 23, 1968.

STEINEN DYNA-COIN

Owner of Reg. Nos. 606,719 and 859,946.
For Oil Burner Nozzles and Oil Burner Nozzle Assemblies (Int. Cl. 11).
First use Oct. 15, 1966; January 1925 as to the mark "Steinen."

SN 309,538. Anderson Products, Inc., Newtonville, Mass. Filed Oct. 14, 1968.

ZONE-A-VENT

For Heating Apparatus—Namely, Valve Assembly and Controls for a Zoned Heating System (Int. Cl. 11).
First use Sept. 19, 1968.

SN 310,256. Standard Oil Company of California, San Francisco, Calif. Filed Oct. 22, 1968.

CHEVRON

Owner of Reg. Nos. 807,520, 815,483, and 853,225.
For Water Heaters (Int. Cl. 11).
First use Dec. 20, 1957.

SN 310,257. Standard Oil Company of California, San Francisco, Calif. Filed Oct. 22, 1968.



Owner of Reg. Nos. 807,521 and 853,226.
For Water Heaters (Int. Cl. 11).
First use Aug. 14, 1968.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 301,258. Royal Industries, Pasadena, Calif. Filed June 24, 1968.

HI-MATIC

For Brake Shoe Linings for Use on Motor Vehicles (Int. Cl. 12).
First use at least as early as 1953.

SN 314,110. Pioneer Oilsealing & Moulding Company Limited, Marfleet, Hull, England. Filed Dec. 10, 1968.

NULOX

Owner of British Reg. No. 919,770, dated Jan. 16, 1968.
For Fluid Seals (Int. Cl. 17).

Class 36 — Musical Instruments and Supplies

SN 279,527. Belle Wood Inc., Chicago, Ill., assignee, by mesne assignment, of Borg-Warner Corporation, Chicago, Ill. Filed Sept. 1, 1967.

CART/ABLE

For Tape Cartridge Players and Parts Thereof (Int. Cl. 9).
First use on or prior to Aug. 1, 1967.

SN 308,132. The Petersen Company, Los Angeles, Calif. Filed Sept. 25, 1968.



The words "Records By" are disclaimed apart from the mark as shown.
For Phonograph Records (Int. Cl. 9).
First use Mar. 28, 1968.

Class 37 — Paper and Stationery

SN 283,243. Federated Department Stores, Inc., New York, N.Y. Filed Oct. 24, 1967.

HARRY'S BAR

For Paper Napkins (Int. Cl. 16).
First use July 26, 1967.

SN 289,128. S-K Forms Company, Philadelphia, Pa. Filed Jan. 18, 1968.



The word "Forms" and the configuration of the goods are disclaimed apart from the mark as shown.
For Professional and Business Stationery—Namely, Bond, Onion Skin and Glassine Paper and Sheets, Letterheads, Bill Heads, Envelopes, Exhibit Sheets, and Report Covers, and Forms for Accounting, Payroll, Record Keeping, Filing, Tax Reporting, and General Office Use (Int. Cl. 16).
First use on or about Aug. 21, 1967.

SN 291,293. Sperry Rand Corporation, New York, N.Y. Filed Feb. 16, 1968.

REMKLIP

For Paper Fasteners Incorporated in File Folders (Int. Cl. 16).
First use June 9, 1965.

SN 293,510. Gibson Greeting Cards, Inc., Cincinnati, Ohio. Filed Mar. 18, 1968.

Smart Nouveau

For Stationery and Envelopes (Int. Cl. 16).
First use Jan. 15, 1968.

SN 300,433. Consolidated Papers, Inc., Wisconsin Rapids, Wis. Filed June 14, 1968.

CONSOBOOKSHELL

For Paperboard (Int. Cl. 16).
First use February 1965.

SN 300,526. Laminating & Coating Corporation, Schaumburg, Ill. Filed June 17, 1968.

CARLAM

For Flexible Material in Roll or Sheet Form for Wrapping or Packaging Purposes (Int. Cl. 16).
First use Apr. 11, 1968.

SN 301,069. Hudson Pulp & Paper Corp., New York, N.Y. Filed June 21, 1968.



Owner of Reg. Nos. 518,686, 760,467, and others.
For Paper and Tissue Products—Namely, Kraft Paper, Paper Towels, Paper Napkins, Toilet Tissue, Paper Handkerchiefs, and Facial Tissues (Int. Cl. 16).
First use about June 1966.

SN 301,623. Hoerner Waldorf Corporation, St. Paul, Minn. Filed June 28, 1968.

Ultra-Board

For Paperboard (Int. Cl. 16).
First use June 18, 1968.

SN 301,718. Cory Corporation, Chicago, Ill. Filed July 1, 1968.

NIBLET

For Writing Instruments—Namely, Marking Pens (Int. Cl. 16).
First use June 11, 1968.

SN 304,737. Keith Clark, Inc., New York, N.Y. Filed Aug. 9, 1968.

Patrician
The Leather Craft Line

For Address Books, Weekly Calendar Memos, Address and Engagement Books, Diaries, and Scrap Books (Int. Cl. 16).
First use in 1951.

SN 305,608. Eversharp, Inc., Milford, Conn. Filed Aug. 21, 1968.

MINI-TAXI

Owner of Reg. No. 837,154.
For Ball Point Pens (Int. Cl. 16).
First use Aug. 16, 1968.

SN 306,065. Malanco, Incorporated, Blue Island, Ill. Filed Aug. 27, 1968.

KORO-PAK

For Paper Dispensers Sold Containing Corrugated Wrapping Paper (Int. Cl. 16).
First use May 15, 1968.

SN 308,639. Star Office Supply Co. Inc., New York, N.Y. Filed Oct. 1, 1968.

ALL START

For Pens (Int. Cl. 16).
First use August 1967.

SN 310,249. Roll-O-Sheets, Inc., St. Louis, Mo. Filed Oct. 22, 1968.

SHOWRAP

For Rolls of Perforated Plastic Sheeting Used as a Wrap (Int. Cl. 16).
First use Sept. 3, 1968.

SN 310,736. Security Pacific National Bank, Los Angeles, Calif. Filed Oct. 29, 1968.

CheXclusive Checks

No claim is made to the word "Checks" apart from the mark shown.
For Checks (Int. Cl. 16).
First use July 1, 1968.

SN 310,832. Ashuelot Paper Company, Hinsdale, N.H. Filed Oct. 30, 1968.

SOUP TI SANDWICH

For Paper Place Mats (Int. Cl. 27).
First use Oct. 10, 1968.

SN 311,691. Milprint, Inc., Milwaukee, Wis. Filed Nov. 8, 1968.

MILWHEEL

For Flexible Film Packaging Material Sold in Tubular Form (Int. Cl. 16).
First use Oct. 31, 1968.

SN 311,832. Colonial Board Company, Manchester, Conn. Filed Nov. 12, 1968.

THERM-O-LITE

For Paperboard Impregnated With Thermally Responsive Resin Additives (Int. Cl. 16).
First use on or about January 1968.

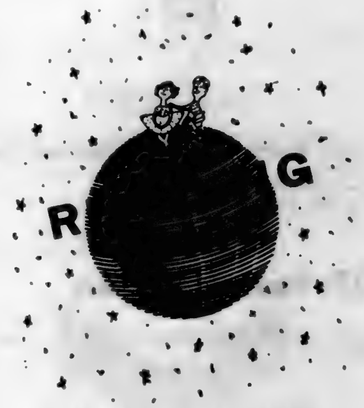
SN 312,442. Eagle Pencil Company, Danbury, Conn. Filed Nov. 18, 1968.

"PLUS-NINETEEN"

For Ball Point Pens (Int. Cl. 16).
First use Nov. 1, 1968.

Class 38 — Prints and Publications

SN 283,273. Professors & Teachers Aids, Inc., Phoenix, Ariz. Filed Oct. 24, 1967.



For Charts for Developing Visual Memory for Use in Teaching Reading Courses (Int. Cl. 16).
First use May 29, 1967.

SN 285,432. Kaumagraph Company, Wilmington, Del. Filed Nov. 22, 1967.

KAUMARK

Owner of Reg. Nos. 54,575, 635,621, and others.
For Printed Transfer Comprising a Carrier Sheet and Applied Printed Matter and More Particularly a Printed Transfer for Application to Smooth Non-Porous Surfaces Such as Vinyl Plastic (Int. Cl. 16).
First use Nov. 7, 1967.

SN 295,010. John E. Bonnett, d.b.a. John Bonnett Associates, Chicago, Ill. Filed Apr. 5, 1968.

BASIS FOR PROFIT

For Workbook and Manual for Use in Management of Storage and Inventory Commodities, Which Workbook and Manual and Insert Pages Therefor Are Published From Time to Time (Int. Cl. 16).
First use on or about July 25, 1966.

SN 298,354. The Regents of the University of Colorado, Boulder, Colo. Filed May 16, 1968.

BSCS

For Educational Materials—Namely, Textbooks, Films, Pamphlets, Small Test Booklets, and Newsletter, Primarily Concerned With the Biological Sciences (Int. Cls. 9 and 16).
First use Sept. 17, 1958.

SN 298,864. Rolls Offset Printing Company, Inc., New York, N.Y. Filed May 22, 1968.

ROLLS

For Advertising Materials Such as Subscription Bind in Cards and Envelopes, Direct Mail Folders, Return Envelopes and Cards, Brochures and Catalogs; Education and Recreational Printed Materials and Paperback Books (Int. Cl. 16).
First use January 1956.

SN 298,865. Rolls Offset Printing Company, Inc., New York, N.Y. Filed May 22, 1968.

ROLLS

For Advertising Materials Such as Subscription Bind in Cards and Envelopes, Direct Mail Folders, Return Envelopes and Cards, Brochures and Catalogs; Educational and Recreational Printed Materials and Paperback Books (Int. Cl. 16).
First use January 1956.

SN 299,377. Penn Central Company, Philadelphia, Pa. Filed May 29, 1968.

PENN CENTRAL POST

For Magazine in Tabloid Form for Distribution to Applicant's Employees (Int. Cl. 16).
First use Mar. 1, 1968.

SN 299,611. Xerox Corporation, Rochester, N.Y. Filed June 3, 1968.

URBAN WORLD

For Printed Newspaper-Type Periodical for Children of School Age Published During the Regular School Year (Int. Cl. 16).
First use Apr. 16, 1968.

SN 300,496. Tower Press, Inc., Danvers, Mass. Filed June 14, 1968.

Stitch 'n Sew

For Monthly Magazine (Int. Cl. 16).
First use in or about March 1968.

SN 307,428. Commercial Reproducing Company, Detroit, Mich. Filed Sept. 16, 1968.

COPYAD

For Photocopies and Loose-Leaf Advertising Units or Data Sheets (Int. Cl. 16).
First use Apr. 27, 1925.

SN 308,346. Lee Gebhard and Walter Wagner, South Miami, Fla. Filed Sept. 27, 1968.

IT'S STILL A MYSTERY!

For Entertaining Feature for Newspapers (Int. Cl. 16).
First use November 1967.

SN 309,183. Pivot Point International, Inc., Chicago, Ill. Filed Oct. 8, 1968.



Owner of Reg. No. 849,177.
For Books, Filmstrips and Transparencies (Int. Cls. 9 and 16).
First use Feb. 2, 1965.

SN 309,799. United Feature Syndicate, Inc., New York, N.Y. Filed Oct. 16, 1968.

THE DROPOUTS

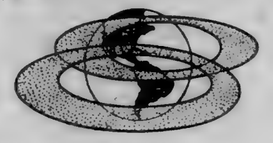
For Comic Strip Published Periodically (Int. Cl. 16).
First use at least as early as Sept. 9, 1968.

SN 311,806. All Phase Color Corporation, Los Angeles, Calif. Filed Nov. 12, 1968.

WHISPER TONES

For Color Cards and Brochures Displaying a Variety of Colors (Int. Cl. 16).
First use September 1968.

SN 313,455. Universal City Studios, Inc., New York, N.Y. Filed Dec. 2, 1968.



Owner of Reg. Nos. 105,030, 703,566, and others.
For Developed Motion Picture Films (Int. Cl. 16).
First use Dec. 15, 1963.

SN 313,456. Universal City Studios, Inc., New York, N.Y. Filed Dec. 2, 1968.



Owner of Reg. Nos. 105,030, 588,277, and others.
For Developed Motion Picture Films (Int. Cl. 16).
First use Dec. 15, 1963.

SN 316,497. Columbia Broadcasting System, Inc., New York, N.Y. Filed Jan. 14, 1969.

MIND ALIVE

For Educational Magazines, the Collected Issues of Which May Be Bound as an Encyclopedia (Int. Cl. 16).
First use at least as early as Nov. 27, 1968.

SN 317,917. National Periodical Publications, Inc., New York, N.Y. Filed Jan. 30, 1969.

BINKYS BUDDIES

For Comic Magazines (Int. Cl. 16).
First use Nov. 14, 1968.

Class 39—Clothing

SN 232,273. Barletta Shoe Company, Chicago, Ill. Filed Nov. 8, 1965.



The drawing is lined for brown and the cross hatching is for shading purposes only. The exclusive rights to the words "Hand Made" and "Italy" are disclaimed apart from the mark as shown. Owner of Reg. No. 670,968.
For Shoes (Int. Cl. 25).
First use on or about July 14, 1959.

SN 273,320. Springfoot, Inc., Charleston, W. Va. Filed June 7, 1967.

TRUCK 'N TRACTOR

For Men's and Boys' Socks (Int. Cl. 25).
First use June 1, 1967.

SN 278,524. Orbit Manufacturing, Inc., Helen, Ga. Filed Aug. 17, 1967.

ORBIT

For Ladies', Misses' and Girls' Outer Garments—Namely, Pants, Shorts and Blouses (Int. Cl. 25).
First use Aug. 1, 1964.

SN 279,636. Anne Fogarty, Inc., New York, N.Y. Filed Sept. 5, 1967.

COLLECTOR'S ITEMS

Applicant disclaims the word "Items" apart from the mark as shown.
For Women's Dresses, Lounging Coats and Lounging Pajamas (Int. Cl. 25).
First use at least by February 1966.

SN 279,954. Marco Polo Imports Ltd., New York, N.Y. Filed Sept. 8, 1967.

IMPORT CORNER

The word "Import" is disclaimed apart from the mark as shown.
For Knitted Dresses and Suits for Women (Int. Cl. 25).
First use June 2, 1967.

SN 286,332. Essley Shirt Co., Inc., New York, N.Y. Filed Dec. 6, 1967.

Piper Club

For Men's and Boys' Sport Shirts, Dress Shirts, Sweaters, Swim Wear, Coordinates of the Aforementioned Goods and Vests (Int. Cl. 25).
First use Aug. 14, 1967.

SN 288,901. Wellco Enterprises, Inc., Waynesville, N.C. Filed Jan. 15, 1968.

MOUNTAINEERS

For Shoes and Boots (Int. Cl. 25).
First use Apr. 1, 1965.

SN 289,019. Max Gruber, Montreal, Quebec, Canada. Filed Jan. 17, 1968.

CAPUCINE DE PARIS

Applicant disclaims the right to the exclusive use of the words "De Paris" apart from the mark as shown.
For Brassieres and Girdles (Int. Cl. 25).
First use in or about August 1967; in commerce in or about August 1967.
Subj. to Intf. with SN 301,029.

SN 289,103. La Industrial de Punto C.A., Caracas, Venezuela. Filed Jan. 18, 1968.

CABRITO

For Children's Wear—Namely, Pants, Pantalets, Undershirts, T-Shirts, Socks, Swaddling Bands, Suits, Overalls, Trousers, Ensembles, Swimwear and Beachwear (Int. Cl. 25).
First use at least as early as Mar. 25, 1950; in commerce at least as early as July 1967.

SN 289,697. Samuel Kassow Co., Inc., Jenkintown, Pa. Filed Jan. 26, 1968.

VICKI LYNN

"Vicki Lynn" is a living individual and consent is of record.
For Hosiery (Int. Cl. 25).
First use May 9, 1967.

SN 291,513. Jet-Abouts, Inc., New York, N.Y. Filed Feb. 20, 1968.

JET ABOUTS

For Women's Clothing and Sportswear—Namely, Slacks, Pantsuits, Skirts, Jumpers, Shorts, Blouses, Shifts, Sweaters, Jackets and Shirts (Int. Cl. 25).
First use on or about Jan. 23, 1968.

SN 294,552. George Cohen Clothing Co., Inc., New York, N.Y. Filed Apr. 1, 1968.

Casa de Sevilla

The English translation of the words "Casa de Sevilla" is "house of Seville." The expression "De Sevilla" is disclaimed apart from the mark as shown.
For Raincoats (Int. Cl. 25).
First use March 1968.

SN 294,615. Gentex Corporation, New York, N.Y. Filed Apr. 1, 1968.

PARADER

For Protective Helmets (Int. Cl. 9).
First use Dec. 11, 1962.

SN 295,058. Shutzer Industries Inc., Lawrence, Mass. Filed Apr. 5, 1968.

STEVEN SCOTT

The name "Steven Scott" is fanciful.
For Men's and Boys' Sports Jackets (Int. Cl. 25).
First use Jan. 2, 1968.

SN 295,662. The Murrell Corporation, New York, N.Y. Filed Apr. 15, 1968.

MURRELL

For Ladies' and Misses' Suits and Dresses (Int. Cl. 25).
First use August 1960.

SN 297,474. Westland Gummiwerke GmbH & Co., Westerhausen, Germany. Filed May 6, 1968.

THUNIT

For Shoe Soles and Shoe Heels (Int. Cl. 25).
First use Oct. 31, 1953; in commerce Dec. 31, 1960.

SN 298,045. A. Rivetz Co., Inc., Boston, Mass. Filed May 13, 1968.

PHINEAS CREED

The mark does not identify a particular living individual.
For Clothing—Namely, Neckties, Bow Ties, Cravats, Mufflers and Handkerchiefs (Int. Cl. 25).
First use Mar. 29, 1968.

SN 299,001. Carolina Bloomer Company, Incorporated, Elkin, N.C. Filed May 24, 1968.

BLOOMER GIRL

For Ladies' Panties (Int. Cl. 25).
First use Mar. 29, 1968.

SN 299,232. Robert Hall Clothes, Inc., d.b.a. Robert Hall Clothes, New York, N.Y. Filed May 28, 1968.

EXPAND-O-BAND

For Waistbands for Clothing and Clothing Such as Slacks and Skirts Having Such Waistbands Incorporated Therein (Int. Cl. 25).
First use on or about May 15, 1968.

SN 299,629. Ingenue of California, Inc., d.b.a. Rage of California, Los Angeles, Calif. Filed June 4, 1968.

Rage of California

Without waiver of its common law rights, applicant disclaims the wording "of California" apart from the mark as shown.
For Women's, Juniors', and Children's Dresses and Women's Two Piece Skirt Suits, Women's Pants Suits, Women's Pants, Women's Shirt Tops, Women's Jumpers, Women's Pant Dresses, and Women's Skirts (Int. Cl. 25).
First use May 27, 1968.

SN 300,867. Broadway-Hale Stores, Inc., Los Angeles, Calif. Filed June 20, 1968.

BEL-AIR

Owner of Reg. Nos. 274,044 and 690,579.
For Hosiery (Int. Cl. 25).
First use July 1948.

SN 301,029. Bally Schuhfabriken AG, Schoenenwerd, Switzerland. Filed June 21, 1968.

CAPUCINE

For Ladies' Shoes and Sandals (Int. Cl. 25).
First use July 31, 1962; in commerce July 31, 1962.
Subj. to Intf. with SN 289,019.

SN 302,406. H. Freeman & Son, Inc., Philadelphia, Pa. Filed July 10, 1968.

MONGELLI

"Mongelli" is the surname of a living individual whose consent is of record.
For Men's Clothing—Namely, Suits and Coats (Int. Cl. 25).
First use Sept. 18, 1958.

SN 302,448. A. Rivetz Co., Inc., Boston, Mass. Filed July 10, 1968.

Phineas Creed

The mark does not identify a particular living individual.
For Clothing—Namely, Neckties, Bow Ties, Cravats, Mufflers and Handkerchiefs (Int. Cl. 25).
First use June 13, 1968.

SN 303,401. H. Paul Dee, d.b.a. Paul Dee Company, Marshalltown, Iowa. Filed July 23, 1968.

ORIGINAL CAMPANILE by DEE

The word "Original" is disclaimed apart from the mark as shown.
For Men's Shirts, Sweaters and Jackets (Int. Cl. 25).
First use Jan. 5, 1968.

SN 303,608. Foster Industries, Inc., New York, N.Y. Filed July 25, 1968.



Applicant disclaims the word "Clothes" apart from the mark as shown.
For Men's and Women's Apparel and Accessories—Namely, Jackets, Swimwear, Robes, Shirts, Beach Pants and Shorts (Int. Cl. 25).
First use January 1968.

SN 303,912. Grieco Bros., Inc., Lawrence, Mass. Filed July 30, 1968.



For Men's and Boys' Clothing—Namely, Suits and Sports Coats (Int. Cl. 25).
First use May 23, 1958.

SN 304,322. Diana Stores Corporation, North Bergen, N.J. Filed Aug. 5, 1968.

TUFF-MATE

For Ladies' and Children's Vinyl and Suede Jackets (Int. Cl. 25).
First use February 1968.

SN 304,323. Diana Stores Corporation, North Bergen, N.J. Filed Aug. 5, 1968.

BRUCE MACINTYRE

The name "Bruce MacIntyre" is fanciful.
For Men's Clothing—Namely, Sweaters, Bermuda Shorts, Dress and Sport Shirts, Trousers, Raincoats, Sport Coats, Socks, Hats, Robes, and Pajamas (Int. Cl. 25).
First use Feb. 21, 1968.

SN 305,712. Burlington Industries, Inc., New York, N.Y. Filed Aug. 22, 1968.

ADÉER
72

Owner of Reg. Nos. 443,210 and 831,864.
For Men's, Women's and Children's Socks (Int. Cl. 25).
First use July 16, 1968.

SN 308,210. Jack Kreiss Hosiery, Inc., New York, N.Y. Filed Sept. 25, 1968.

Artplus

For Ladies' Hosiery (Int. Cl. 25).
First use 1955.

SN 308,482. J. Freeser & Son, Inc., New York, N.Y. Filed Sept. 30, 1968.

Frijere

For Men's, Ladies', Boys', and Girls' Shirts (Int. Cl. 25).
First use Feb. 14, 1968.

SN 310,527. The Villager, Inc., Philadelphia, Pa. Filed Oct. 25, 1968.

GALAPAGO

For Wearing Apparel—Namely, Hats, Coats, Capes, Boots and Ponchos (Int. Cl. 25).
First use Oct. 10, 1968.

SN 315,624. The Villager, Inc., Philadelphia, Pa. Filed Dec. 31, 1968.

GUY SPRITES

For Children's Shirts, Jackets and Pants (Int. Cl. 25).
First use at least as early as Feb. 14, 1961.

Class 40—Fancy Goods, Furnishings, and Notions

SN 314,158. Hilborn-Hamburger Co., Inc., New York, N.Y. Filed Dec. 11, 1968.

TRX

For Trimmings, More Specifically Braiding and Embroidered Insignia (Int. Cl. 26).
First use Sept. 5, 1968.

Class 41—Canes, Parasols, and Umbrellas

SN 292,977. Telesco Brophey Limited, Montreal, Quebec, Canada. Filed Mar. 11, 1968.



The drawing is lined for the color red. Priority claimed under Sec. 44(d) on Canadian application filed Sept. 12, 1967; Reg. No. 158,783, dated Oct. 18, 1968. Owner of U.S. Reg. No. 763,588.
For Umbrellas, Umbrella Frames, Umbrella Runners, Umbrella Notches, Umbrella Cases, Umbrella Case Zipper Pulls and Umbrella Handles (Int. Cl. 18).
First use September 1961; in commerce September 1961.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 288,764. American Carpet Mills, Inc., Cartersville, Ga. Filed Jan. 15, 1968.

KELDEL

The drawing is lined for the color green.
For Rugs and the Like (Int. Cl. 27).
First use Nov. 17, 1967.

SN 291,994. Mister Fabric, Inc., New York, N.Y. Filed Feb. 27, 1968.

MISTER FABRIC

Applicant disclaims the word "Fabric" apart from the mark as shown.
For Fabrics of All Kinds in Bulk, Pieces, Remnants and Sample Cuts (Int. Cl. 24).
First use in or about September 1967.

SN 292,028. Synthetics Finishing Corporation, Philadelphia, Pa. Filed Feb. 27, 1968.

AIRSKIN

For Coated and Laminated Textile Fabrics for Use in Making Apparel, Home Furnishings and Luggage (Int. Cl. 24).
First use Feb. 23, 1968.

SN 297,692. New Coatings Incorporated, Boston, Mass. Filed May 8, 1968.

WEATHER SHED

For Cotton, Synthetic, Coated and Laminated Fabrics, for Making Into Protective Rainwear, Rain Suits, Outerwear, Covers, Tarpaulin, Tents and Draperies (Int. Cl. 24).
First use Apr. 1, 1968.

SN 298,131. Lanneau Tapijt-en Fluweelweverij N.V., Harelbeke (Kortrijk), Belgium. Filed May 14, 1968.

THE RUBYSHAH COLLECTION

Applicant disclaims the word "Collection" apart from the mark as shown.
For Carpets (Int. Cl. 27).
First use Dec. 22, 1967; in commerce Dec. 22, 1967.

SN 300,451. Indian Head Inc., New York, N.Y. Filed June 14, 1968.

a "design" 99" fabric

Applicant disclaims any right to the use of the word "Fabric" apart from the mark as shown.
For Fabrics in the Piece To Be Used in the Manufacture of All Types of Clothing (Except Outerwear) for Men, Women and Children, Including, but Not Limited to, Shirts, Blouses, Dresses, Slacks, Pajamas, Petticoats and Slips (Int. Cl. 24).
First use Apr. 24, 1968.

SN 301,904. Pat Baird Ship's Wheel, Inc., La Grange, Ill. Filed July 3, 1968.

INSTANT LINEN

For purposes of registration only, and without waiver of any common law rights, applicant disclaims the word "Linen" apart from the mark.
For Disposable Bed Sheets and Pillow Cases (Int. Cl. 24).
First use Mar. 9, 1968.

SN 304,678. Dolly Madison, Inc., New York, N.Y. Filed Aug. 8, 1968.



Owner of Reg. Nos. 678,157 and 793,421.
For Quilt Covers, Mattress Covers and Pads, Pillow Protectors, Bath Mats and Bedspreads (Int. Cl. 24).
First use Feb. 1, 1937.

SN 305,114. Dan River Mills, Incorporated, Danville, Va. Filed Aug. 14, 1968.

DANSURE

For Textile Fabrics in the Piece of Cotton or Synthetic Fibers or Any Combinations Thereof (Int. Cl. 24).
First use Feb. 27, 1968.

SN 313,786. General Felt Industries, Inc., Chicago, Ill. Filed Dec. 6, 1968.

HI-STEP

For Carpet Underlays (Int. Cl. 27).
First use on or about Feb. 28, 1967.

Class 43—Thread and Yarn

SN 305,113. Brunswick Corporation, Chicago, Ill. Filed Aug. 14, 1968.

BRUNSMET

For Metal Yarns (Int. Cl. 23).
First use on or about Mar. 15, 1967.

Class 44—Dental, Medical, and Surgical Appliances

SN 300,551. Black Dentaprises, Inc., Miami, Fla. Filed June 17, 1968.

ULTRA-AIR

For Compressor for Use in Dental Equipment (Int. Cl. 10).
First use Apr. 16, 1968.

SN 303,762. Barataud et Piola "Etablissement Barapio," Collonge-Bellerive (Geneva), Switzerland. Filed July 29, 1968.



Priority claimed under Sec. 44(d) on Swiss Reg. No. 230,645, dated Mar. 14, 1968.
For X-Ray Machines, Gamma-Ray Machines, and Secondary Gamma- or Beta-Ray Machines for Human Radiological Therapy (Int. Cl. 10).

SN 306,225. The Dentists' Supply Company of New York, York, Pa. Filed Aug. 29, 1968.

R·R
REGALLOY

Owner of Reg. No. 300,906.
For High Fusing Dental Chromium Alloy Consisting Entirely of Non-Precious Metals for Casting Dental Restorative Devices (Int. Cl. 5).
First use June 10, 1958.

SN 308,231. Precision Medical Instrument, Inc., Passaic, N.J. Filed Sept. 25, 1968.



The trademark consists of the design shown in the drawing which constitutes a configuration of an enlarged, approximately triangular, thin head at the top of the thermometer, the upper surface of which is convex. The mark is stippled in the drawing for the purpose of shading.
For Clinical Thermometers (Int. Cl. 9).
First use April 1962.

SN 309,347. Air Reduction Company, Incorporated, d.b.a. Ohio Medical Products, New York, N.Y. Filed Oct. 10, 1968.

CRYOPTOR

For Instrument for Eye Surgery (Int. Cl. 10).
First use Feb. 14, 1968.

SN 309,647. The Hydro Dent Company, Los Angeles, Calif. Filed Oct. 15, 1968.

Hydro Dent

For Oral Spray Unit Operating by Means of Attachment to a Water Faucet (Int. Cl. 10).
First use May 25, 1967.

SN 310,252. Solar Laboratories, Inc., Inglewood, Calif. Filed Oct. 22, 1968.

PLASTICAST

For Bandage Material Adapted To Be Applied to a Human or Animal Member and Hardens To Form a Cast, Splint or Supporting Structure (Int. Cl. 5).
First use Sept. 27, 1968.

SN 310,255. Solar Laboratories, Inc., Inglewood, Calif. Filed Oct. 22, 1968.

BETACAST

For Bandage Material Adapted To Be Applied to a Human or Animal Member and Hardens To Form a Cast, Splint or Supporting Structure (Int. Cl. 5).
First use Sept. 27, 1968.

SN 313,657. Parke, Davis & Company, Detroit, Mich. Filed Dec. 5, 1968.

READIFLEX

Owner of Reg. No. 806,037.
For Elastic Stockings for Therapeutic Uses (Int. Cl. 10).
First use on or before Nov. 1, 1968.

SN 314,568. Jay Dee Manufacturing Company, Inc., Brooklyn, N.Y. Filed Dec. 16, 1968.

pic o' mint

Applicant disclaims the word "Mint" apart from the mark as shown.
For Wrapped Mint Flavored Wooden Toothpicks (Int. Cl. 21).
First use January 1960.

SN 315,427. Michigan Instruments, Inc., Grand Rapids, Mich. Filed Dec. 30, 1968.

VENT AID

For Inhalation Therapy Equipment (Int. Cl. 10).
First use on or about Dec. 13, 1968.

SN 315,617. Anesthesia, Inhalation Therapy Distributors, Inc., Portland, Oreg. Filed Dec. 31, 1968.

aid$_2$

For Medical Respiratory Care Equipment and Appliances and Specifically Oxygen Humidifiers and Regulators, Oxygen Masks and Cannulae, Oxygen Tents, Ventilators and Compressed Gas Cylinders (Int. Cl. 10).
First use Oct. 1, 1967.

Class 45—Soft Drinks and Carbonated Waters

SN 238,066. Farmer's Daughter, Inc., Evansville, Ind. Filed Feb. 4, 1966.

PAPPY'S BREW

Applicant disclaims the word "Brew" apart from the mark as shown.
For Syrup Bases for Making Soft Drinks (Int. Cl. 32).
First use Oct. 2, 1965.

SN 289,597. Martin-Brower Corporation, Chicago, Ill. Filed Jan. 25, 1968.

MB

The mark consists of a distinctive design suggestive of the letters "MB."
For Fruit Flavored Syrups for Making Soft Drink Beverages (Int. Cl. 32).
First use Jan. 16, 1967.

SN 290,889. S.a.s. Antonio Bertolini, Turin, Italy. Filed Feb. 12, 1968.



Owner of Italian Reg. No. 76,578, dated Apr. 25, 1944.
For Soft Drinks (Int. Cl. 32).

SN 297,390. Copa Guarana, Inc., Salt Lake City, Utah. Filed May 6, 1968.



The word "Frevo" is the name of a Brazilian dance.
For Soft Drinks (Int. Cl. 32).
First use Mar. 15, 1968.

SN 299,647. A. J. Canfield Company, Chicago, Ill. Filed June 4, 1968.

Olde London

For Quinine Tonic Water (Int. Cl. 32).
First use Mar. 6, 1968.

SN 308,347. General Mills, Inc., Minneapolis, Minn. Filed Sept. 27, 1968.

EVENING CHILL

For Soft Drink Concentrate (Int. Cl. 32).
First use on or prior to Aug. 23, 1968.

Class 46—Foods and Ingredients of Foods

SN 252,800. George Amerise, d.b.a. Hazleton Macaroni Company, Hazleton, Pa. Filed Aug. 22, 1966.



Applicant disclaims any exclusive rights to the representation of the Italian flag apart from the mark as shown. The person represented in the drawing is a fictitious representation.
For Canned Vegetables—Namely, Wax and Stringless Cut Beans, Corn, Peas, Peeled Tomatoes, Sauerkraut, Kidney Beans and Garbanzos Beans; Canned Tomato Paste, Spaghetti Sauce, Coffee, Grated Cheese, Herbs—Namely, Sesame Seed, Oregano, Bay Leaves, Rosemary Leaves, Basil Leaves and Parsley Flakes; and Hot Peppers, Candied Cauliflower, Hot Mixed and Crushed Peppers (Int. Cls. 29 and 30).
First use February 1918.

SN 260,173. Nissin Shokuhin Kaisha Ltd., Takatsuki, Japan. Filed Jan. 28, 1969.

NISSIN

For Noodles With Powder Sauce (Int. Cl. 30).
First use on or about Oct. 20, 1961; in commerce on or about Sept. 18, 1963.

SN 275,525. J. S. Hoffman Company, Chicago, Ill. Filed July 7, 1967.

Król-Lewska

For Cooked Canned Ham (Int. Cl. 29).
First use June 20, 1967.

SN 278,230. O.J.M. Co., Denver, Colo. Filed Aug. 14, 1967.

STUFF

For Snack Appetizers Made From Puffed and Cooked Cornmeal (Int. Cl. 30).
First use on or about June 20, 1967.

SN 283,469. Sun Foods Company, San Francisco, Calif. Filed Oct. 26, 1967.

SUNNIES

For Packaged Roasted and Salted Sunflower Seeds for Sale as a Confectionery-Type Item (Int. Cl. 30).
First use Sept. 1, 1967.

SN 286,539. Lamb-Weston, Inc., d.b.a. Vita-Bite Foods, Co., Portland, Oreg. Filed Dec. 8, 1967.

Quik Stix

The word "Stix" is disclaimed apart from the mark as shown. The drawing is lined for the colors orange and brown.
For Frozen French Fried Potatoes (Int. Cl. 29).
First use Nov. 20, 1967.

SN 288,679. Continental Coffee Company, Chicago, Ill. Filed Jan. 12, 1968.

". . . AND"

For Non-Dairy Cream Type Product (Int. Cl. 29).
First use on or about Dec. 12, 1967.

SN 290,888. S.a.s. Antonio Bertolini, Turin, Italy. Filed Feb. 12, 1968.



Owner of Italian Reg. No. 76,578, dated Apr. 25, 1944.
For Foodstuffs—Namely, Yeasts, Baking Powder, Substitutes of Spices Based on Aromatic Herbs (Int. Cl. 30).

SN 292,889. Chambourcy S.A., Clamart (Hauts de Seine), France. Filed Mar. 11, 1968.

CHAMBOURCY

Priority claimed under Sec. 44(d) on French Reg. No. 745,972, dated Dec. 26, 1967.
For Yogurts, Fresh Cheese, Cream, Coagulated Milk, Frozen Milk and Butter (Int. Cl. 29).

SN 301,108. The Wander Company, d.b.a. Ovaltine Food Products, Villa Park, Ill. Filed June 21, 1968.

TWEEDLE DEE

For Flavored Milk Additive—Namely, Flavored Malted Milk (Int. Cl. 30).
First use Apr. 30, 1968.

SN 301,109. The Wander Company, d.b.a. Ovaltine Food Products, Villa Park, Ill. Filed June 21, 1968.

TWEEDLE DUM

For Flavored Milk Additive—Namely, Flavored Malted Milk (Int. Cl. 30).
First use Apr. 30, 1968.

SN 301,618. General Foods Corporation, White Plains, N.Y. Filed June 28, 1968.

ONLY THE GOOD PERKS THROUGH!

For Coffee (Int. Cl. 30).
First use Feb. 13, 1968.

SN 302,577. Uncle Ben's, Inc., Houston, Tex. Filed July 12, 1968.

No claim is made to the words "Measure of Quality" apart from the mark as shown, without waiving any common law rights therein. Owner of Reg. Nos. 437,176, 740,123, and others.
For Flavored Rice Products—Namely, Spanish Rice, Meat-Flavored Rice, Poultry-Flavored Rice and Curried Rice (Int. Cl. 30).
First use June 10, 1968.

SN 302,954. Charles H. Neher, d.b.a. Golden Grain Popcorn Co., Elkhart, Ind. Filed July 17, 1968.

GOLDEN GRAIN

Applicant claims use for the area comprising the States of Indiana, Michigan, Illinois, Ohio, Kentucky, and Wisconsin.
For Unpopped Popcorn (Int. Cl. 31).
First use on or before Dec. 1, 1929.
Subj. to Concurrent Use Proceeding with Reg. Nos. 576,847 and 680,109.

SN 303,192. Ocean Coffee Co., Inc., Shreveport, La. Filed July 19, 1968.

OCEAN

For Coffee (Int. Cl. 30).
First use Jan. 1, 1933.

SN 304,710. R & R Processors, Inc., Carthage, Miss. Filed Aug. 8, 1968.

The lines shown in the drawing are a feature of the mark and do not represent color lines.
For Fresh Dressed Poultry (Int. Cl. 29).
First use Aug. 5, 1968.

SN 305,203. Consolidated Foods Corporation, d.b.a. Joe Lowe Company, Englewood, N.J. Filed Aug. 15, 1968.

FUN 'N SUN-SICLE

Owner of Reg. Nos. 593,672 and others.
For Frozen Confections on Sticks and Flavor Bases for Making the Same (Int. Cl. 30).
First use July 16, 1968.

SN 305,617. The Nestle Company, Inc., White Plains, N.Y. Filed Aug. 21, 1968.

Applicant disclaims the words "of Scotland" apart from the mark as shown.
For Candies (Int. Cl. 30).
First use Nov. 28, 1967.

SN 305,976. Pizza Dog, Inc., Detroit, Mich. Filed Aug. 26, 1968.

No claim is made to the word "Pizza" apart from the mark as shown. Owner of Reg. No. 804,800.
For Frozen Pizza Product in the Form of a Sandwich Utilizing a Bread Crust in the Shape of a Hot Dog Bun (Int. Cl. 30).
First use Aug. 20, 1968.

SN 306,210. American Whipped Products, Inc., Glendale, N.Y. Filed Aug. 29, 1968.

KING SMOOTHEE

For Imitation Cream Cheese (Int. Cl. 29).
First use June 6, 1968.

SN 306,425. The Blue Channel Corporation, Port Royal, S.C. Filed Sept. 3, 1968.

Applicant disclaims the word "Atlantic" apart from the mark as shown.
For Seafood—Namely, Frozen Crab Cakes and Crab Roe Pate (Int. Cl. 29).
First use June 21, 1968.

SN 306,645. Continental Coffee Company, Chicago, Ill. Filed Sept. 5, 1968.

FLEX-BAG

For Coffee (Int. Cl. 30).
First use January 1968.

SN 306,682. Osem Export (1962) Limited, Tel Aviv, Israel. Filed Sept. 5, 1968.

OSEM

For Macaroni, Ravioli, Spaghetti, Noodles and Short-Cut Macaroni of Different Sizes and Shapes; Snack Foods of Wheat Flour and Other Cereals—Namely, Potato Chips, Pretzels, Dried Noodles and the Like, Soup Almonds, Dehydrated Soup Mixes, Dehydrated Soup Cubes, Instant Soup Cubes, Sauce Mixes, Pudding Powders, Dried Fried Onions, Quick-Jelling Dessert Powders, Potato Pancake Mixes, Dried Chocolate for Baking and Food Beverage Purposes, and All-Purpose Spicy Seasoning, and Fruit Concentrate Powders To Be Reconstituted To Make a Fruit Juice in the Nature of Fruit Soup (Int. Cls. 29 and 30).
First use not later than 1962; in commerce June 21, 1968.

SN 306,703. Weldon Foods, Inc., New York, N.Y. Filed Sept. 5, 1968.

SKINNY-SHAKE

For Mix for Frozen Non-Fat Milk Shake Including Non-Fat Dry Milk and Flavoring (Int. Cl. 30).
First use Oct. 16, 1967.
Subj. to Intf. with SN 306,151.

SN 307,151. Tonnema N.V., Sneek Netherlands. Filed Sept. 11, 1968.

Priority claimed under Sec. 44(d) on Dutch application filed Mar. 20, 1968; Reg. No. 166,596, dated Apr. 26, 1968. The drawing is lined for the colors green and orange which are claimed as a feature of the mark, as are the colors black and white. Owner of U.S. Reg. No. 719,023.
For Peppermint, Hard Candies (With or Without Soft Centers), Toffees, Caramels, Fondant, Jellies, All With or Without Chocolate, Licorice (Int. Cl. 30).

SN 309,340. R. J. Reynolds Foods, Inc., New York, N.Y. Filed Oct. 10, 1968.

JOLLY R

For Snack Food Products—Namely, Corn Chips, Corn Puffs, Potato Puffs, and Peanut Chips (Int. Cl. 30).
First use July 2, 1968.

SN 312,641. R. J. Reynolds Foods, Inc., New York, N.Y. Filed Nov. 20, 1968.

SUGAR GLEN

Applicant disclaims the word "Sugar" apart from the mark as a whole.
For Table Syrups Composed of Molasses and Cane Syrup (Int. Cl. 30).
First use at least as early as 1926.

SN 314,130. Sam Andrews' Sons, Bakersfield, Calif. Filed Dec. 11, 1968.

Owner of Reg. No. 825,525.
For Fresh Lettuce (Int. Cl. 31).
First use Dec. 5, 1968.

Class 47 — Wines

SN 284,302. Foremost-McKesson, Inc., d.b.a. Chateau Port-side Wine Cellars, New York, N.Y. Filed Nov. 7, 1967.

The dark background of the drawing is for contrast and does not form a feature of the mark. Owner of Reg. Nos. 311 971, 799,215, and others.
For Wine (Int. Cl. 33).
First use at least as early as Oct. 4, 1967.

SN 317,907. E. & J. Gallo Winery, d.b.a. Gallo Vineyards, Modesto, Calif. Filed Jan. 30, 1969.

GALLO
Apollo

Owner of Reg. Nos. 444,756, 640,782, and others.
For Wines (Int. Cl. 33).
First use Jan. 23, 1969.
Subj. to Intf. with SN 318,093.

Class 48 — Malt Beverages and Liquors

SN 291,416. Molson Breweries Limited, East Montreal, Quebec, Canada. Filed Feb. 19, 1968.

Owner of Canadian Reg. No. 141,936, dated Sept. 17, 1965.
For Beer (Int. Cl. 32).

SN 302,305. Courage Barclay & Simonds Limited, London, England. Filed July 9, 1968.

COURAGE

Owner of British Reg. No. 694,545, dated Dec. 11, 1950.
For Beer, Ale, and Stout (Int. Cl. 32).

Class 49 — Distilled Alcoholic Liquors

SN 288,854. Rebel Distributing Company, Inc., Jackson, Miss. Filed Jan. 15, 1968.

For Whiskey (Int. Cl. 33).
First use Nov. 1, 1967.

SN 290,885. S.a.s. Antonio Bertolini, Turin, Italy. Filed Feb. 12, 1968.



The word "Estratti," meaning "extract" in Italian, is disclaimed apart from the mark as shown. Owner of Italian Reg. No. 63,505, dated May 6, 1941.
For Concentrated Extracts for Use in Making Liqueurs (Int. Cl. 33).

SN 290,887. S.a.s. Antonio Bertolini, Turin, Italy. Filed Feb. 12, 1968.



Owner of Italian Reg. No. 76,578, dated Apr. 25, 1944.
For Liqueurs and Extracts for Use in Making Liqueurs (Int. Cl. 33).

SN 298,853. Old Boone Distillery Co., Cincinnati, Ohio. Filed May 22, 1968.

DANIEL BOONE

The name "Daniel Boone" refers to the famous American frontiersman. Owner of Reg. Nos. 362,413, 690,336, and 690,337.
For Bourbon Whiskey (Int. Cl. 33).
First use Jan. 26, 1968.

SN 299,666. Glenmore Distilleries Company, Louisville, Ky. Filed June 4, 1968.



Owner of Reg. Nos. 310,855 and 695,803.
For Whiskey, Gin, Vodka and Prepared Alcoholic Cocktails (Int. Cl. 33).
First use Apr. 1, 1968.

SN 301,098. R. Stevenson Taylor and Company Limited, Dunbarton, Scotland. Filed June 21, 1968.

JAMIE '08

Owner of U.S. Reg. Nos. 760,429 and 808,942.
For Whisky (Int. Cl. 33).
First use February 1968; in commerce April 1968.

SN 311,339. Joseph E. Seagram & Sons, Inc., New York, N.Y. Filed Nov. 5, 1968.

TOLTEC

For Tequila (Int. Cl. 33).
First use Oct. 23, 1968.

SN 311,340. Joseph E. Seagram & Sons, Inc., New York, N.Y. Filed Nov. 5, 1968.

TOLTECA

For Tequila (Int. Cl. 33).
First use Oct. 23, 1968.

SN 318,093. Old Stanley Distillery, Incorporated, d.b.a. Thomas W. Sims Distillery, Stanley, Ky. Filed Jan. 31, 1969.

APOLLO

For Bourbon Whiskey (Int. Cl. 33).
First use Jan. 7, 1969.
Subj. to Intf. with SN 317,907.

Class 50—Merchandise Not Otherwise Classified

SN 277,159. Fitchburg Paper Company, Fitchburg, Mass. Filed July 31, 1967.

DECO-VIN

For Printed Plastic, in Roll or Sheet Form, for Decorative Surfacing of Furniture, Casements, Counters, Interior and Exterior Paneling, Walls, Floors, Ceilings or Doors (Int. Cl. 20).
First use not later than May 1, 1967.

SN 293,574. RX Plastic Company, San Carlos, Calif. Filed Mar. 18, 1968.

ASTRO GARDEN

The word "Garden" is disclaimed apart from the mark as shown.
For Arboretums and Terrariums (Int. Cl. 20).
First use Feb. 20, 1968.

SN 303,318. Krain & Canton, Inc., Bloomfield, N.J. Filed July 22, 1968.



For Decorative Items—Namely, Glass Ornaments, Garlands, Tinsel, Icicles, Artificial Trees and Boutique Items—Namely, Table Centerpieces and Wall Decorations (Int. Cls. 20, 21, and 26).
First use Jan. 31, 1968.

SN 303,320. Krain & Canton, Inc., Bloomfield, N.J. Filed July 22, 1968.

HOLLY HOUSE

Owner of Reg. No. 753,436.
For Decorative Items—Namely, Glass Ornaments, Garlands, Tinsel, Icicles, Artificial Trees and Boutique Items—Namely, Table Centerpieces and Wall Decorations (Int. Cls. 20, 21, and 26).
First use Jan. 31, 1968.

SN 304,009. Monogram Models, Inc., Morton Grove, Ill. Filed July 31, 1968.

Merité

For Miniature Figurines Collected for Educational and Esthetic Purposes (Int. Cl. 20).
First use June 27, 1968.

SN 307,765. Loretta Swartz, d.b.a. Robert Swartz & Associates, Wilmette, Ill. Filed Sept. 19, 1968.

Kiddy Sake

For Placques (Int. Cl. 20).
First use June 3, 1968.

SN 310,243. Multimatic Displays, Inc., Great Neck, N.Y. Filed Oct. 22, 1968.

MULTIVISION 5

For Advertising Displays (Int. Cl. 16).
First use Oct. 9, 1968.

Class 51—Cosmetics and Toilet Preparations

SN 294,049. Hilton Hotels Corporation, Chicago, Ill. Filed Mar. 25, 1968.

FOR THE WOMAN IN YOUR WIFE

For Perfumes and Colognes (Int. Cl. 3).
First use Feb. 7, 1968.

SN 297,533. Clairol Incorporated, New York, N.Y. Filed May 7, 1968.

GREIGE

For Hair Coloring, Hair Tinting and Dyeing Preparations (Int. Cl. 3).
First use Apr. 23, 1968.

SN 298,412. John H. Breck, Inc., Wayne, N.J. Filed May 17, 1968.

BRECK

Owner of Reg. Nos. 521,473, 529,328, and others.
For Hair Spray (Int. Cl. 3).
First use March 1956.

SN 300,261. Cummins Pharmaceutical Company, Inc., Beaumont, Tex. Filed June 12, 1968.

ULTRA DERM

For Bath Oil, and Cream Lotion for the Skin (Int. Cl. 3).
First use Jan. 19, 1968.

SN 300,371. Roffler Sculptur-Kut National Franchised System, Inc., Ambridge, Pa. Filed June 13, 1968.

SCULPT

Owner of Reg. Nos. 761,740 and 862,052.
For Hair Spray (Int. Cl. 3).
First use July 1, 1959.

SN 300,680. Cummins Pharmaceutical Company, Inc., Beaumont, Tex. Filed June 18, 1968.

PAN ULTRA

For Sun Lotion and Lipsticks (Int. Cl. 3).
First use May 6, 1968.

SN 301,367. The Stephan Co., Fort Lauderdale, Fla. Filed June 25, 1968.

Family Mate

For Personal Spray Deodorant (Int. Cl. 5).
First use May 8, 1968.

SN 304,271. Warner-Lambert Pharmaceutical Company, Morris Plains, N.J. Filed Aug. 2, 1968.

BEAUTY FINISH

For Fluid Makeup (Int. Cl. 3).
First use July 30, 1968.

SN 304,474. La Maur, Inc., d.b.a. The House of Style, Minneapolis, Minn. Filed Aug. 6, 1968.

HE MAN

For Hair Fixative (Int. Cl. 3).
First use July 30, 1968.

SN 305,530. John H. Breck, Inc., Wayne, N.J. Filed Aug. 20, 1968.

MISTER BRECK

Owner of Reg. Nos. 521,473, 847,717, and others.
For Hair Spray for Men (Int. Cl. 3).
First use July 30, 1968.

SN 305,578. Tovar Tresses, Inc., New York, N.Y. Filed Aug. 20, 1968.

SYN-SET

For Synthetic Hair Setting Lotion (Int. Cl. 3).
First use July 24, 1968.

SN 306,632. John H. Breck, Inc., Wayne, N.J. Filed Sept. 5, 1968.

MR. BRECK

Owner of Reg. Nos. 521,473, 847,717, and others.
For Hair Spray for Men (Int. Cl. 3).
First use July 30, 1968.

SN 306,806. Frank Samson, d.b.a. Jon Paul, Millburn, N.J. Filed Sept. 6, 1968.

JON PAUL

The name "Jon Paul" does not identify any particular individual.
For Cologne and After-Shave (Int. Cl. 3).
First use July 17, 1968.

SN 306,866. April Showers, Inc., New York, N.Y. Filed Sept. 9, 1968.

A/S

For Personal Deodorant, Perfume, Eau De Cologne, Toilet Water, Bath Oil, Dusting Powder, Face Powder, Bath Powder, Bubble Bath, Hand Lotion, Skin Cream, Lipstick and Rouge (Int. Cls. 3 and 5).
First use Apr. 22, 1968.

SN 306,891. Demert & Dougherty, Inc., Chicago, Ill. Filed Sept. 9, 1968.

DAINTEX

For Personal Deodorant (Int. Cl. 5).
First use on or about Aug. 21, 1968.

Class 52 — Detergents and Soaps

SN 294,052. The Johnson-March Corporation, d.b.a. Johnson-March Corporation and Waverly Mineral Products Co., Philadelphia, Pa. Filed Mar. 25, 1968.

PETRO-SORB

For Granular Floor Cleaning Compound Having Oil- and Water-Absorbent and Incidental Fire Prevention Properties (Int. Cl. 4).
First use on or about Mar. 2, 1959.

SN 302,595. Central Soya Company, Inc., d.b.a. Central Soya, Fort Wayne, Ind. Filed July 12, 1968.

GILT EDGE

For Laundry Detergents (Int. Cl. 3).
First use on or before June 18, 1968.

SN 303,440. Piggly Wiggly Corporation, Jacksonville, Fla. Filed July 23, 1968.

Princess Prim

For Liquid Household Detergent (Int. Cl. 3).
First use July 3, 1968.

SN 306,807. Frank Samson, d.b.a. Jon Paul, Millburn, N.J. Filed Sept. 6, 1968.

JON PAUL

"Jon Paul" does not identify any particular individual.
For Hair and Body Shampoo (Int Cl. 3).
First use July 17, 1968.

SN 309,203. Lever Brothers Company, New York, N.Y. Filed Oct. 9, 1968.

STARLIGHT

Owner of Reg. Nos. 259,194, and 602,228.
For Toilet Soap (Int. Cl. 3).
First use April 1968.

SERVICE MARKS

Class 100 — Miscellaneous

SN 257,730. Sports Car Club of America, Incorporated, Westport, Conn. Filed Nov. 1, 1966.

CANADIAN AMERICAN CHALLENGE CUP

For Organizing, Promoting, Sanctioning and Supervising the Operation and Administration of a Series of International Sports Car Racing Events (Int. Cl. 42).
First use Jan. 25, 1966.

SN 259,906. Divers International Inc., New Haven, Conn. Filed Dec. 2, 1966.

INTERNATIONAL DIVING CLUB

The words "Diving Club" are disclaimed apart from the mark as shown except that applicant reserves any common law rights it has in this connection.
For Association Services—Namely, Services To Further the Interest of Members in Water Sports (Int. Cl. 42).
First use Oct. 4, 1966.

SN 268,566. American Contractors, Inc., Mohnton, Pa. Filed Apr. 7, 1967.

PERI-SCAN

For Engineering Services for Controlling the Peripheral Speed of Grinding Wheels (Int. Cl. 42).
First use Apr. 12, 1966.

SN 286,221. Wayne Manufacturing Company, Pomona, Calif. Filed Dec. 4, 1967.

TSC

For Advisory and Consultation Services in Connection With Selection and Utilization of Street Sweeping and Sanitation Equipment (Int. Cl. 42).
First use September 1966.

SN 286,222. Wayne Manufacturing Company, Pomona, Calif. Filed Dec. 4, 1967.

TOTAL SANITATION CONCEPT

For Advisory and Consultation Services in Connection With Selection and Utilization of Street Sweeping and Sanitation Equipment (Int. Cl. 42).
First use September 1966.

SN 290,555. Avnet, Inc., Plainview, N.Y. Filed Jan. 26, 1968.
The drawing is lined for red, but color is not claimed as a feature of the mark.



For Consulting, Research, and Development Services in Connection With Precision Casting Methods Used in the Foundry Industry (Int. Cl. 42).
First use Dec. 19, 1966.

SN 290,709. Bayley's Restaurant, Theodore, Ala. Filed Feb. 9, 1968.

BAYLEY'S

For Restaurant Service (Int. Cl. 42).
First use in 1947.

SN 292,177. Care Centers, Inc., Carlisle, Ohio. Filed Feb. 29, 1968.



For Operating Convalescent Homes and Day Nurseries (Int. Cl. 42).
First use Mar. 1, 1967.

SN 293,758. Thunderbird Motel Corporation, Minneapolis, Minn. Filed Mar. 20, 1968.

BOW AND ARROW

For Restaurant and Coffee Shop Services (Int. Cl. 42).
First use Jan. 2, 1959.

SN 293,759. Thunderbird Motel Corporation, Minneapolis, Minn. Filed Mar. 20, 1968.

POW-WOW

For Bar and Cocktail Lounge Services (Int. Cl. 42).
First use Jan. 2, 1959.

SN 293,760. Thunderbird Motel Corporation, Minneapolis, Minn. Filed Mar. 20, 1968.

TOTEM POLE

For Restaurant and Cabaret Services (Int. Cl. 42).
First use Jan. 2, 1959.

SN 298,663. G.C. Public Relations Department di Pierina Grottolo Berti, Milan, Italy. Filed May 7, 1968.

RENDEZ-VOUS SERVICE

The word "Service" is disclaimed apart from the mark. Owner of Italian Reg. No. 199,115, dated Sept. 20, 1966.
For Association Services—Namely, Promoting Italian Cities by Offering Tourists Guides, Hostesses, and Information (Int. Cl. 42).

SN 299,137. International Research and Development Corportation, Worthington, Ohio. Filed May 27, 1968.

IRD

Owner of Reg. No. 771,858.
For Vibration Investigation and Measurement Services for Continuous and Periodic Monitoring of Unbalance in Rotating Bodies and for Correction of Such Unbalance (Int. Cl. 42).
First use Sept. 7, 1966.

SN 306,133. GC Optronics, Inc., Ann Arbor, Mich. Filed Aug. 28, 1968.

GCO

For Consultation and Design of Methods and Apparatus for Performing Holography, Interferometry, and Non-Destructive Testing (Int. Cl. 42).
First use Nov. 15, 1967.

SN 316,392. Schleider Caterers, Inc., Baltimore, Md. Filed Jan. 13, 1969.



For Catering Services (Int. Cl. 42).
First use Feb. 1, 1963.

Class 101 — Advertising and Business

SN 273,530. S. S. Sarna, Inc., New York, N.Y. Filed June 9, 1967.

S. S. Sarna Inc.

Owner of Reg. No. 224,801.
For Retail Novelty Store Services Featuring Unique Items for the Home, Office, Business Establishments and for Personal Use or Wear (Int. Cl. 35).
First use in or about June 1947.

SN 276,908. Supergirls Enterprises, Ltd., New York, N.Y., assignee of Supergirls, New York, N.Y. Filed July 27, 1967.

SUPERGIRLS

For Supplying of Temporary Help to Businesses and Also to Individuals for a Wide Variety of Personal Services, Such as Party Planning, Running Reasonable Errands, Gift Buying and the Like (Int. Cl. 35).
First use Apr. 17, 1967.

SN 277,313. Technomic Research Associates, Inc., Chicago, Ill. Filed Aug. 1, 1967.

TECHNOMIC RESEARCH ASSOCIATES

Applicant disclaims all rights in the words "Research Associates" apart from the mark as shown.
For Management Research Services—Namely, Corporate Growth Planning, Market Research, Long Range Technological Forecasting, New Product Planning, Acquisition, Selection and Evaluation (Int. Cl. 35).
First use Feb. 26, 1966.

SN 277,314. Technomic Research Associates, Inc., Chicago, Ill. Filed Aug. 1, 1967.

TECHNOMIC

For Management Research Services—Namely, Corporate Growth Planning, Market Research, Long Range Technological Forecasting, New Product Planning, Acquisition, Selection and Evaluation (Int. Cl. 35).
First use Feb. 26, 1966.

SN 277,916. Herron-Kienzle, Inc., Wilton, Conn. Filed Aug. 9, 1967.



The word "Crossword" is disclaimed apart from the mark as shown.
For Promoting the Sale of Goods and/or Services of Others Through the Conduct of a Contest (Int. Cl. 35).
First use Aug. 2, 1967.

SN 282,357. Caywood-Schiller, Associates, Chicago, Ill. Filed Oct. 12, 1967.

VULSET

For Mathematical Analysis by Computer Programming Involving Taped Predictions for Areas of Vulnerability in Aircraft (Int. Cl. 35).
First use Aug. 1, 1967.

SN 282,358. Caywood-Schiller, Associates, Chicago, Ill. Filed Oct. 12, 1967.

COMPAT-F

For Computer Programming Services—Namely, Information Retrieval Data System Featuring Compatible Computer Languages and Tape Conversion for Scientific Processing Involving Mathematical Manipulations (Int. Cl. 35).
First use July 26, 1967.

SN 284,463. Flaming Bull, Inc., Mission, Kans. Filed Nov. 9, 1967.

FLAMING BULL

For Establishment and Operation of Restaurants for Others and in Cooperation With Others (Int. Cl. 35).
First use Oct. 18, 1967.

SN 286,987. American Express Company, New York, N.Y. Filed Dec. 15, 1967.

SUPERPHONE

For Provision, for Businesses Honoring Applicant's Credit Cards, of a Central Telephone Service Wherein Such Businesses Can Obtain Credit Information Upon the Holders of Applicant's Credit Cards (Int. Cl. 35).
First use Sept. 29, 1967.

SN 289,289. Fairmont Foods Company, Omaha, Nebr. Filed Jan. 22, 1968.



Owner of Reg. No. 815,051.
For Retail Grocery Store Services (Int. Cl. 35).
First use Mar. 15, 1937.

SN 290,096. Goodwin, Dannenbaum, Littman & Wingfield, Incorporated, Houston, Tex. Filed Feb. 1, 1968.

CREACTIVE

Owner of Reg. No. 852,464.
For Advertising and Public Relations Services, Provided by Applicant for Others (Int. Cl. 35).
First use Nov. 24, 1966.

SN 290,152. American University Press Services, Inc., New York, N.Y. Filed Feb. 2, 1968.



The drawing is lined for the color blue, but color is not claimed as a feature of the mark.
For Preparing Mailing Lists of Names of Persons Employed in Institutions of Higher Learning and Performing Addressing and Mailing Services in Connection With Such Lists (Int. Cl. 35).
First use July 1, 1931.

SN 290,875. A. C. Nielsen Company, Chicago, Ill. Filed Feb. 12, 1968.



Owner of Reg. No. 547,323.
For Marketing Research—Namely, Marketing Research With Reference to the Viewing and Listening Habits of Television Receiver Users (Int. Cl. 35).
First use Aug. 31, 1967.

SN 290,876. A. C. Nielsen Company, Chicago, Ill. Filed Feb. 12, 1968.



The drawing of the mark is lined for purposes of shading only and does not form a part of the mark.
For Marketing Research (Int. Cl. 35).
First use January 1960.

SN 290,877. A. C. Nielsen Company, Chicago, Ill. Filed Feb. 12, 1968.

NAC

Owner of Reg. Nos. 528,873, 824,208, and others.
For Marketing Research—Namely, Marketing Research With Reference to the Viewing and Listening Habits of Television Receiver Users (Int. Cl. 35).
First use Dec. 18, 1962.

SN 292,342. Burroughs Corporation, Detroit, Mich. Filed Mar. 4, 1968.



For Rendering Programming Services for Data Processing; Furnishing Electronic Computer Time to Others; and Rendering Technical Services to Others in Establishing, Implementing, and Operating Data Processing and Character Recognition Systems (Int Cl. 35).
First use Apr. 16, 1947.

SN 292,374. HMH Publishing Co. Inc., Chicago, Ill. Filed Mar. 4, 1968.

PLAYBOY

For Model Agency Service Including Supplying of Live Models for Various Business Purposes (Int. Cl. 35).
First use on or about July 13, 1964.

SN 298,347. Pacific Enterprise, Palo Alto, Calif. Filed May 16, 1968.

PACIFIC ENTERPRISE

For Importing and Exporting Merchandise Usually Manufactured to Customer Specifications (Int. Cl. 35).
First use Mar. 1, 1960.

SN 300,734. Office Overload Co. Ltd., Toronto, Ontario, Canada. Filed June 18, 1968.



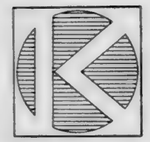
For Employment Agency and Business Consultant Services, Temporary Help Services and Personnel Counselling Services (Int. Cl. 35).
First use June 1, 1954; in commerce June 1, 1954.

SN 302,132. Roberts Brothers, Inc., Mobile, Ala. Filed July 5, 1968.



For Compiling Statistics Concerning Characteristics, Such as Location, Size, Number of Rooms, Number of Bathrooms, and so on, of Real Property Available for Purchase; and Advising Customers as to Availability of Properties Suited to Needs Stated by Customers (Int. Cl. 35).
First use May 4, 1968.

SN 307,933. Perry H. Koplik & Sons, Inc., New York, N.Y. Filed Sept. 23, 1968.



The drawing is lined for blue and color is claimed as an integral part of the mark. The mark consists of a fanciful showing of the letter "K."
For Services as Agents for the Sale of Wood Pulp, Industrial Wastes and Other Raw Materials for Paper (Int. Cl. 35).
First use July 1967.

SN 313,108. Infodata Systems Inc., Rochester, N.Y. Filed Nov. 26, 1968.



For Computer Programming Services (Int. Cl. 35).
First use at least as early as Oct. 10, 1968.

SN 313,109. Infodata Systems Inc., Rochester, N.Y. Filed Nov. 26, 1968.

INFODATA

For Computer Programming Services (Int. Cl. 35).
First use at least as early as Oct. 10, 1968.

SN 314,761. Inter Continental Thrift, Inc., San Francisco, Calif. Filed Dec. 18, 1968.



For Promoting Sales and/or Services of Others Through Issuance of Discount Identification Cards for Use in Subscriber Stores (Int. Cl. 35).
First use Oct. 30, 1968.

SN 315,136. Associated Enterprises, Inc., Paoli, Pa. Filed Dec. 24, 1968.



For Selling, Organizing and Managing Franchises for All Types of Businesses of Others (Int. Cl. 35).
First use Nov. 10, 1968.

Class 102 — Insurance and Financial

SN 271,597. Citizens Bank of Maryland, Riverdale, Md. Filed May 16, 1967.

The Bank That Serves .. DAYTIME, NIGHTTIME ... SATURDAY, TOO!

For General Banking Services—Namely, Savings, Checking, Loan, Trust, Safe Deposit, Branch Banking, and Foreign Exchange Services (Int. Cl. 36).
First use July 26, 1960.

SN 280,328. Prosurance, Inc., Fremont, Ohio. Filed Sept. 14, 1967.

PROSURANCE

For Insurance Agency Services (Int. Cl. 36).
First use Jan. 20, 1966.

SN 301,394. Allied Mutual Insurance Company, Des Moines, Iowa. Filed June 26, 1968.



The drawing is lined for the color green.
For Insurance Underwriting Services (Int. Cl. 36).
First use Feb. 7, 1968.

SN 303,432. Morgan Guaranty Trust Company of New York, Paris, France. Filed July 23, 1968.

EURO-CLEAR

For Clearance Service for Internationally Traded Dollar Securities (Int. Cl. 36).
First June 1968; in commerce June 1968.

SN 303,611. Harris Trust and Savings Bank, Chicago, Ill. Filed July 25, 1968.

QUIK-APP

For Personal Loan Services (Int. Cl. 36).
First use May 28, 1968.

SN 303,813. National Boulevard Bank of Chicago, Chicago, Ill. Filed July 29, 1968.

SUCCESS NEEDS A GOOD BANK

Owner of Reg. No. 733,986.
For Banking Services (Int. Cl. 36).
First use Jan. 8, 1960.

SN 306,441. National Liberty Life Insurance Company, Valley Forge, Pa. Filed Sept. 3, 1968.



The words "College & Career" are disclaimed. The English translation of the Latin phrase "Vivere Disce" is "learn to live."
For Underwriting of Life Insurance (Int. Cl. 36).
First use Apr. 29, 1968.

SN 313,301. Integon Corporation, Winston-Salem, N.C. Filed Nov. 29, 1968.



The drawing is lined for the color brown.
For Insurance Underwriting Services, Financing of Insurance Premiums and Operating a Mutual Fund for Others (Int. Cl. 36).
First use Nov. 20, 1968.

Class 103 — Construction and Repair

SN 272,827. Gas Consumers Association, Scarsdale, N.Y. Filed June 1, 1967



The drawing is lined for blue. No registration rights are claimed in the words "Gas Consumers Service" apart from the mark as shown.
For Servicing and Repairing Gas Appliances (Int. Cl. 37).
First use August 1942.

SN 301,106. Uniwash, Inc., Los Angeles, Calif. Filed June 21, 1968.



The drawing is lined for the colors orange and blue.
For Maintenance of Automotive Vehicles Including Cleaning and Servicing Thereof (Int. Cl. 37).
First use May 30, 1968.

Class 105 — Transportation and Storage

SN 301,625. International Forwarding Co., Chicago, Ill. Filed June 28, 1968.

XPORTAINER

For Freight Forwarding Services (Int. Cl. 39).
First use Mar. 15, 1968.

SN 303,705. Riteway Rentals, Inc., Elizabeth, N.J. Filed July 26, 1968.



For Rental of Transportation Equipment—Namely, Tractors and Trailers (Int. Cl. 39).
First use February 1966.

SN 313,421. The Greyhound Corporation, Chicago, Ill. Filed Dec. 2, 1968.

TURBOCRUISER

For Motor Bus Transportation of Passengers and Goods (Int. Cl. 39).
First use Nov. 21, 1968.

Class 106 — Material Treatment

SN 286,011. Interstate Mail Film Service, Inc., d.b.a. Photo-T, South Bend, Ind. Filed Dec. 1, 1967.

PHOTO-T

For Photograph Finishing Service (Int. Cl. 40).
First use December 1966.

Class 107 — Education and Entertainment

SN 282,674. Emerald Bristow (Mrs. K. Neil Stradley), Washington, D.C. Filed Oct. 17, 1967.



For Educational Services—Namely, Instructions To Update Formal Cultural and/or Social Education at Various Age Levels by Special Techniques (Int. Cl. 41).
First use July 15, 1967.

SN 295,928. Jefferson Airplane, Inc., San Francisco, Calif. Filed Apr. 18, 1968.

JEFFERSON AIRPLANE

For Entertainment Service, Including Personal Appearance Performances, Recordings, Radio and Television Performances (Int. Cl. 41).
First use August 1965.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 266,643. Confrerie de la Chaine des Rotisseurs, Paris, France. Filed Mar. 14, 1967.



The mark translated means "chain of grilled meat caterers."
For Indicating Membership in Applicant.
First use 1950; in commerce 1959.

SN 277,178. International Work Simplification Institute, Inc., Cleveland, Ohio. Filed July 31, 1967.



For Indicating Membership in Applicant.
First use Apr. 29, 1966.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1—Raw or Partly Prepared Materials

869,558. FCC (DESIGN). Freeman Chemical Corporation. SN 277,656. Pub. 3-4-69. Filed 8-7-67.

869,559. BAREX. Vistron Corporation. SN 298,649. Pub. 3-4-69. Filed 5-20-68.

869,560. THE INDESTRUCTIBLE TOE. Allaco Products, Inc. SN 299,291. Pub. 3-4-69. Filed 5-29-68.

869,561. THE PERFECTLY INDESTRUCTIBLE TOE. Allaco Products, Inc. SN 299,292. Pub. 3-4-69. Filed 5-29-68.

869,562. EKTAFILL. Eastman Kodak Company. SN 299,659. Pub. 3-4-69. Filed 6-4-68.

869,563. WELCH JUNIOR MISS. Welch Brothers Nursery, Inc. SN 302,548. Pub. 3-4-69. Filed 7-11-68.

Class 2—Receptades

869,564. ZIP MASTER AND DESIGN. Peterson and Associates, Inc. SN 273,788. Pub. 3-4-69. Filed 6-13-67.

869,565. ARDMORE. Tokheim Corporation. SN 283,734. Pub. 3-4-69. Filed 10-30-67.

869,566. ANACONDA. The Anaconda Company. MULTIPLE CLASS (Classes 2 and 50). SN 298,783. Pub. 3-4-69. Filed 5-22-68.

869,567. INK DROP DESIGN. Daniels Manufacturing Company. MULTIPLE CLASS (Classes 2 and 37). SN 300,504. Pub. 3-4-69. Filed 6-17-68.

869,568. GRASSHOPPER. L & H Designs, Inc. SN 302,425. Pub. 3-4-69. Filed 7-10-68.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

869,569. FLEUR DE LIS. Since 1868 Crescent Corporation, d.b.a. Crescent Corporation. SN 305,571. Pub. 3-4-69. Filed 8-20-68.

Class 5—Adhesives

869,570. P AND DESIGN. Perstorp, Aktiebolag. SN 275,462. Pub. 3-4-69. Filed 7-6-67.

Class 6—Chemicals and Chemical Compositions

869,571. RESIGUARD. Aspro-Nicholas Limited. SN 282,342. Pub. 3-4-69. Filed 10-12-67.

869,572. ROYALAC. Uniroyal, Inc. SN 283,830. Pub. 3-4-69. Filed 10-31-67.

869,573. HEREDITEST. Worthington Biochemical Corporation. SN 284,262. Pub. 3-4-69. Filed 11-6-67.

869,574. ANHYDRONE. J. T. Baker Chemical Company. SN 285,714. Pub. 2-18-69. Filed 11-28-67.

869,575. CONQUER. Geigy Chemical Corporation. SN 287,538. Pub. 3-4-69. Filed 12-26-67.

869,576. SUPER RID-ALL. West Chemical Products, Inc. SN 291,928. Pub. 3-4-69. Filed 2-26-68.

869,577. NOBOIL. Roman Cleanser Company. SN 293,740. Pub. 3-4-69. Filed 3-20-68.

869,578. BXA. Uniroyal, Inc. SN 300,763. Pub. 3-4-69. Filed 6-18-68.

869,579. ZEFIR. Huntington Laboratories, Inc. SN 301,076. Pub. 3-4-69. Filed 6-21-68.

869,580. METACHROME. Metacomet Inc. SN 301,632. Pub. 3-11-69. Filed 6-28-68.

869,581. ULTRA-MAT. Philip A. Hunt Chemical Corporation. SN 301,430. Pub. 3-4-69. Filed 6-26-68.

869,582. AEROFLO. Philip A. Hunt Chemical Corporation. SN 301,431. Pub. 3-4-69. Filed 6-26-68.

869,583. STARMAT. Philip A. Hunt Chemical Corporation. SN 301,432. Pub. 3-4-69. Filed 6-26-68.

Class 7—Cordage

869,584. BOW MASTER. Bow Master, Inc. SN 280,299. Pub. 3-4-69. Filed 9-14-67.

Class 10—Fertilizers

869,585. MEDINA. Medina Agricultural Products Co., Inc. SN 307,902. Pub. 3-4-69. Filed 9-20-68.

869,586. REGIM-8. International Minerals & Chemical Corporation. SN 312,159. Pub. 3-4-69. Filed 11-14-68.

Class 12—Construction Materials

869,587. TWEED TEX AND DESIGN. H. B. Fuller Company. SN 269,985. Pub. 3-4-69. Filed 4-25-67.

869,588. PRC RUBBER CALK. Products Research & Chemical Corporation. SN 276,864. Pub. 3-4-69. Filed 7-26-67.

869,589. SYMPHONY. Gare Ceramic Supply Co., Inc. SN 277,659. Pub. 3-4-69. Filed 8-7-67.

869,590. DIDIER AND DESIGN. Didier-Werke A.G. SN 285,121. Pub. 2-18-69. Filed 11-17-67.

869,591. TUFLITE. Vistron Corporation. SN 287,604. Pub. 3-4-69. Filed 12-26-67.

869,592. COPPERLITE. Pioneer Plastics Corp. SN 290,645. Pub. 3-4-69. Filed 2-8-68.

869,593. U-THANE. The Upjohn Company. SN 290,913. Pub. 3-4-69. Filed 2-12-68.

869,594. WOOD GRAIN FILUMA. Frantz Manufacturing Company. SN 291,260. Pub. 3-4-69. Filed 2-16-68.

869,595. STEELCOA AND DESIGN. Allan Irvin Silverstein, d.b.a. Steel Company of America. SN 294,561. Pub. 3-4-69. Filed 4-1-68.

869,596. GM. Interpace Corporation, by change of name from International Pipe & Ceramics Corporation. SN 295,434. Pub. 3-4-69. Filed 4-11-68.

869,597. LITECRETE. Interpace Corporation, by change of name from International Pipe & Ceramics Corporation. SN 295,437. Pub. 3-4-69. Filed 4-11-68.

869,598. VP (DESIGN). Varco-Pruden, Inc. SN 301,983. Pub. 3-4-69. Filed 7-3-68.

869,599. TWIN ANCHOR BRAND. Manhattan Terrazzo Brass Strip Co., Inc. SN 305,148. Pub. 3-4-69. Filed 8-14-68.

869,600. WIDEBOARD. Edward Hines Lumber Co. SN 308,076. Pub. 3-4-69. Filed 9-24-68.

869,601. GREFCOTE. General Refractories Company. SN 310,280. Pub. 3-4-69. Filed 10-23-68.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

869,602. WORLD BAZAAR. Atlantic Company. SN 278,570. Pub. 3-4-69. Filed 8-18-67.

869,603. NYGUARD. Scovill Manufacturing Company. SN 291,779. Pub. 3-4-69. Filed 2-23-68.

869,604. BETE. Bete Fog Nozzle, Inc. MULTIPLE CLASS (Classes 13 and 34). SN 294,253. Pub. 3-4-69. Filed 3-27-68.

869,605. EASY-E. Fisher Governor Company. SN 294,487. Pub. 3-4-69. Filed 3-29-68.

869,606. SMIGI. Societa Metallurgica Italiana. SN 296,879. Pub. 3-4-69. Filed 4-29-68.

869,607. NEWBURYPORT PEWTER TOWLE AND DESIGN. Towle Manufacturing Company. SN 297,816. Pub. 3-4-69. Filed 5-9-68.

869,608. AK. The Akchurin Corporation. MULTIPLE CLASS (Classes 13 and 23). SN 299,286. Pub. 3-4-69. Filed 5-29-68.

869,609. FLEXTRAN. Johns-Manville Corporation. SN 302,419. Pub. 3-4-69. Filed 7-10-68.

869,610. KLIP-STIK. Postmark Corporation. SN 302,569. Pub. 3-4-69. Filed 7-12-68.

869,611. WILCOX-CRITTENDEN WC AND DESIGN. North & Judd Manufacturing Company. SN 308,394. Pub. 3-4-69. Filed 9-27-68.

869,612. PIGGY-PAK. Price Pfister Brass Mfg. Co. SN 311,103. Pub. 3-4-69. Filed 11-1-68.

Class 15—Oils and Greases

869,613. GUN LIFE. James D. Brazil and Luke J. Davich (joint owners), d.b.a. Sportsmen's Laboratories. SN 292,880. Pub. 3-4-69. Filed 3-11-68.

869,614. MARAFLUID. Marathon Oil Company. SN 293,732. Pub. 3-4-69. Filed 3-20-68.

869,615. ZIP-CHEM. Mitann Inc. SN 293,841. Pub. 3-4-69. Filed 3-21-68.

869,616. RUST LUBE. Demert & Dougherty, Inc. SN 297,044. Pub. 3-4-69. Filed 5-1-68.

869,617. MODERN DISTILLATE. The Shivell-Hall Company, Inc., d.b.a. Shivell-Hall Co. SN 298,972. Pub. 3-4-69. Filed 5-23-68.

869,618. MUSTANG AND DESIGN. Husky Oil Company of Delaware. SN 311,648. Pub. 3-4-69. Filed 11-8-68.

Class 16—Protective and Decorative Coatings

869,619. KINOX. Wyandotte Chemicals Corporation. SN 282,850. Pub. 3-4-69. Filed 10-18-67.

869,620. MAGNA BOND AND DESIGN. Continental Coatings Corporation. SN 283,770. Pub. 3-4-69. Filed 10-31-67.

869,621. BYKANOL. Byk-Guilden Lomberg Chemische Fabrik GmbH. SN 287,631. Pub. 3-4-69. Filed 12-27-67.

869,622. COLORDEK. Kelley Technical Coatings, Inc. SN 298,338. Pub. 3-4-69. Filed 5-16-68.

869,623. FUL-STAIN. Fuller-O'Brien Corporation. SN 300,577. Pub. 3-4-69. Filed 6-17-68.

869,624. IMCO-BLAK. International Minerals & Chemical Corporation. SN 310,028. Pub. 3-4-69. Filed 10-21-68.

Class 17—Tobacco Products

869,625. FLOR DE HONDURAS ETC. AND DESIGN. Tabacalera Nacional, S.A. SN 284,248. Pub. 3-4-69. Filed 11-6-67.

869,626. CARLYLE AND DESIGN. Rembrandt Tobacco Corporation (Overseas) Limited. SN 290,107. Pub. 3-4-69. Filed 2-1-68.

869,627. COMET. Lorillard Corporation. SN 308,795. Pub. 3-4-69. Filed 10-3-68.

869,628. DEITIES. Lorillard Corporation. SN 308,796. Pub. 3-4-69. Filed 10-3-68.

Class 18—Medicines and Pharmaceutical Preparations

869,629. KEY DESIGN. Cockburn and Company. SN 262,923. Pub. 3-4-69. Filed 1-20-67.

869,630. ALDEX-A. The Upjohn Company. SN 276,886. Pub. 3-4-69. Filed 7-26-67.

869,631. BRONKODYL. Philips Roxane Laboratories, Inc., assignee of Philips Roxane, Inc. SN 281,225. Pub. 3-4-69. Filed 9-26-67.

869,632. LIQUITEIN. Andrew Don McCasland, d.b.a. Liquitein Feed Company. SN 281,300. Pub. 3-4-69. Filed 9-27-67.

869,633. PURACLOX. Beecham Inc., by merger from Beecham Products Inc. SN 284,577. Pub. 3-4-69. Filed 11-13-67.

869,634. KESSODANTEN. Foremost-McKesson, Inc., d.b.a. McKesson Laboratories. SN 294,610. Pub. 3-4-69. Filed 4-1-68.

869,635. DEVRYL. Smith Kline & French Laboratories. SN 294,677. Pub. 3-4-69. Filed 4-1-68.

689,636. ULTRA BRITE. Colgate-Palmolive Company. SN 294,723. Pub. 3-4-69. Filed 4-2-68.

869,637. DRISTETTES. American Home Products Corporation. SN 294,904. Pub. 3-4-69. Filed 4-4-68.

869,638. IMPETUS. Bristol-Myers Company. SN 297,377. Pub. 3-4-69. Filed 5-6-68.

869,639. NEOLIN. Bristol-Myers Company. SN 297,527. Pub. 3-4-69. Filed 5-7-68.

869,640. ABOLISH. Merck & Co., Inc. SN 297,873. Pub. 3-4-69. Filed 5-10-68.

869,641. INVOKE. Merck & Co., Inc. SN 297,874. Pub. 3-4-69. Filed 5-10-68.

869,642. MARMOLA. Raladam Company. SN 304,391. Pub. 3-4-69. Filed 8-5-68.

869,643. AMALGIN. Amfre-Grant, Inc. SN 304,849. Pub. 3-4-69. Filed 8-12-68.

869,644. LYSETTE. Sterling Drug Inc. SN 309,209. Pub. 3-4-69. Filed 10-9-68.

Class 19—Vehicles

869,645. DYNAMINT. Hard Sails, Inc. SN 263,063. Pub. 3-4-69. Filed 1-23-67.

869,646. WACO. Allied Aero Industries, Inc. SN 282,338. Pub. 3-4-69. Filed 10-12-67.

869,647. FLEXI-QUAD. Fruehauf Corporation. SN 298,464. Pub. 3-4-69. Filed 5-17-68.

869,648. DUR-A-SHIELD. Durkee-Atwood Company. SN 301,725. Pub. 3-4-69. Filed 7-1-68.

869,649. SANDPIPER AND DESIGN. The Commodore Corporation (Delaware corporation), assignee of The Commodore Corporation (Nebraska corporation). SN 301,915. Pub. 3-4-69. Filed 7-3-68.

869,650. PI-CON. Pioneer Parachute Company, Inc. SN 310,917. Pub. 3-4-69. Filed 10-30-68.

Class 20 — Linoleum and Oiled Cloth

869,651. CRAFTLON. Armstrong Cork Company. SN 292,067. Pub. 3–4–69. Filed 2–28–68.

869,652. MANOLUX. Mannington Mills Inc. SN 295,935. Pub. 3–4–69. Filed 4–18–68.

Class 21 — Electrical Apparatus, Machines, and Supplies

869,653. LINK. General Precision, Inc. SN 210,204. Pub. 3–4–69. Filed 1–19–65.

869,654. STEP/SCAN. Fifth Dimension, Inc. SN 241,654. Pub. 3–4–69. Filed 3–23–66.

869,655. WALKERDUCT. Textron, Inc. SN 250,532. Pub. 3–4–69. Filed 7–18–66.

869,656. WALKER. Textron, Inc. SN. 250,533. Pub. 3–4–69. Filed 7–18–66.

869,657. MARK T. Southwestern Drug Corporation, d.b.a. Mark-T Products. SN 280,507. Pub. 3–4–69. Filed 9–18–67.

869,658. MISCELLANEOUS DESIGN. Bell Electric Co. SN 285,967. Pub. 3–4–69. Filed 12–1–67.

869,659. BOBBERBEAM AND DESIGN. Bird-Adams Company, Inc. SN 286,628. Pub. 3–4–69. Filed 12–11–67.

869,660. FELTEX. Metex Corporation. SN 296,550. Pub. 3–4–69. Filed 4–25–68.

869,661. ZIP-EX. Metex Corporation. SN 296,552. Pub. 3–4–69. Filed 4–25–68.

869,662. ROYAL ASCOT. Royal Ascot Lamps Co., Inc. SN 296,580. Pub. 3–4–69. Filed 4–25–68.

869,663. KOR/SONIC. Spartans Industries, Inc. SN 300,013. Pub. 3–4–69. Filed 6–7–68.

869,664. 4. Dow Corning Corporation. SN 311,095. Pub. 3–4–69. Filed 11–1–68.

Class 22 — Games, Toys, and Sporting Goods

869,665. PATIO POOL. Colnart, Inc. SN 272,357. Pub. 3–4–69. Filed 5–25–67.

869,666. MOONEE. Kenneth C. Rolin. SN 282,118. Pub. 3–4–69. Filed 10–9–67.

869,667. LAWRENCE. Lawrence Sports Limited. SN 284,210. Pub. 3–4–69. Filed 11–6–67.

869,668. CLIX. Wiener Metallwarenfabrik Smolka & Co. SN 287,054. Pub. 3–4–69. Filed 12–15–67.

869,669. JOLE ENTERPRISES. Jole Enterprises, Incorporated. SN 287,740. Pub. 3–4–69. Filed 12–28–67.

869,670. NOMINOES & TRICKETS AND DESIGN. The Yielding Company, Inc. SN 289,146. Pub. 3–4–69. Filed 1–18–68.

869,671. CHAIN WORM. McClellan Industries, Inc. SN 291,277. Pub. 3–4–69. Filed 2–16–68.

869,672. MIGHTY MIKE. Remco Industries, Inc. SN 293,947. Pub. 3–4–69. Filed 3–22–68.

869,673. KEWPIEVILLE KEWP. AND DESIGN. Cameo Doll Products Co., Inc. SN 294,010. Pub. 3–4–69. Filed 3–25–68.

869,674. DEPTH-CHARGER. Plastics Research and Development Corporation. SN 294,309. Pub. 3–4–69. Filed 3–27–68.

869,675. ALL AMERICAN AND DESIGN. Imperial Golf Company. SN 295,235. Pub. 3–4–69. Filed 4–9–68.

869,676. BLAST-A-JET. Philips Maine Corporation. SN 295,367. Pub. 3–4–69. Filed 4–10–68.

869,677. ZIGGEDY ZAGS. Kohner Bros., Inc. SN 298,230. Pub. 3–4–69. Filed 5–15–68.

869,678. PACE-SETTER. Reynolds Metals Company. SN 301,448. Pub. 3–4–69. Filed 6–26–68.

869,679. LITTLE SOPHISTICATES. Uneeda Doll Co., Inc. SN 301,477. Pub. 3–4–69. Filed 6–26–68.

869,680. PAIL-FULL OF PUZZLE. Westminster Industries Inc. SN 303,124. Pub. 3–4–69. Filed 7–19–68.

869,681. CUDDLE KEWPIE AND DESIGN. Cameo Doll Products Co., Inc. SN 308,090. Pub. 3–4–69. Filed 9–24–68.

869,682. RAH-RAH. Mattel, Inc. SN 308,965. Pub. 3–4–69. Filed 10–7–68.

869,683. KOSMIC. KIDDLES. Mattel, Inc. SN 308,968. Pub. 3–4–69. Filed 10–7–68.

869,684. FLIPPO. William A. Borba, Sr., d.b.a. Flippo Manufacturing Co. SN 310,019. Pub. 3–4–69. Filed 10–21–68.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

869,608. (See Class 13 for this trademark.)

869,685. GLASCO AND DESIGN. UMC Industries, Inc. MULTIPLE CLASS (Classes 23 and 31). SN 275,330. Pub. 3–4–69. Filed 7–3–67.

869,686. NEW ORBIT. Dura Corporation. SN 278,955. Pub. 3–4–69. Filed 8–24–67.

869,687. PAIR - A - MATIC. All Products Company. SN 280,532. Pub. 3–4–69. Filed 9–18–67.

869,688. SPEEDEE SLEEVES. Direct Image Corporation. SN 282,891. Pub. 3–4–69. Filed 10–19–67.

869,689. H.O.P. Slifer Manufacturing Co., Inc. SN 284,244. Pub. 3–4–69. Filed 11–6–67.

869,690. PLANE 'O' MATIC. Rawlen T. Smith, d.b.a. Special Products Co. SN 288,875. Pub. 3–4–69. Filed 1–15–68.

869,691. SET PACKER. Certus Maschinenbau GmbH. SN 290,579. Pub. 3–4–69. Filed 2–8–68.

869,692. CRUSTIVATOR. Bigham Brothers. SN 293,795. Pub. 3–4–69. Filed 3–21–68.

869,693. KAISER. Kaiser Aluminum & Chemical Corporation. SN 299,026. Pub. 3–4–69. Filed 5–24–68.

869,694. COMMANDO FIFTY. Daybrook-Ottawa Corporation, d.b.a. Ottawa Steel Products. SN 299,949. Pub. 3–4–69. Filed 6–7–68.

869,695. OTTAWA COMMANDO THIRTY AND DESIGN. Daybrook-Ottawa Corporation, d.b.a. Ottawa Steel Products. SN 299,950. Pub. 3–4–69. Filed 6–7–68.

869,696. OTTAWA COMMANDO SPOTMASTER. Daybrook-Ottawa Corporation, d.b.a. Ottawa Steel Products. SN 299,951. Pub. 3–4–69. Filed 6–7–68.

869,697. REDIPAK. Chemineer, Inc. SN 300,066. Pub. 3–4–69. Filed 6–10–68.

869,698. SHOE STOP AND DESIGN. Medevco of Los Alamitos, Inc. SN 300,091. Pub. 3–4–69. Filed 6–10–68.

869,699. INSPIRATION. The International Silver Company. SN 300,598. Pub. 3–4–69. Filed 6–17–68.

869,700. SUPER DUTY. Wallace-Murray Corporation, d.b.a. Heller Tool Division, and Simonds Saw and Steel Division. SN 310,994. Pub. 3–4–69. Filed 10–31–68.

Class 26 — Measuring and Scientific Appliances

869,701. SPEED FRATE. General Signal Corporation. SN 251,854. Pub. 3–4–69. Filed 8–8–66.

869,702. THERMALERT. Raytek, Inc. SN 281,116. Pub. 3–4–69. Filed 9–25–67.

869,703. J JOENS AND DESIGN. W. H. Joens & Co. G.m.b.H. SN 283,007. Pub. 3–4–69. Filed 10–20–67.

Class 27 — Horological Instruments

869,704. GRAND SEIKO AND DESIGN. Kabushiki Kaisha Hattori Tokeiten. SN 292,107. Pub. 3–4–69. Filed 2–28–68.

Class 28 — Jewelry and Precious-Metal Ware

869,705. PPC. Medicated Products Co., d.b.a. Princess Pride Creations. SN 300,470. Pub. 3–4–69. Filed 6–14–68.

869,706. BX. Bamet Jewelry, Inc. SN 301,030. Pub. 3–4–69. Filed 6–21–68.

Class 29 — Brooms, Brushes, and Dusters

869,707. THE TRAPPER. South Eastern Cordage Co. SN 300,127. Pub. 3–4–69. Filed 6–10–68.

Class 31 — Filters and Refrigerators

869,685. (See Class 23 for this trademark.)

869,708. FIBRA FOAM. International Cold Storage, Inc. SN 249,016. Pub. 3–4–69. Filed 6–27–66.

Class 34 — Heating, Lighting, and Ventilating Apparatus

869,604. (See Class 13 for this trademark.)

869,709. CAPE COD. Sunbeam Corporation. SN 287,681. Pub. 3–4–69. Filed 12–27–67.

869,710. RADICATOR. Midland - Ross Corporation. SN 303,183. Pub. 3–4–69. Filed 7–19–68.

869,711. MIRA-COOL. The Tappan Company. SN 303,205. Pub. 3–4–69. Filed 7–19–68.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

869,712. POLYFOOD. J. E. Rhoads & Sons, Inc. SN 311,797. Pub. 3–4–69. Filed 11–12–68.

869,713. HY-WHITE. J. E. Rhoads & Sons, Inc. SN 311,798. Pub. 3–4–69. Filed 11–12–68.

Class 36 — Musical Instruments and Supplies

869,714. PANASONIC. Matsushita Electric Industrial Co., Ltd. SN 287,823. Pub. 3–4–69. Filed 12–29–67.

869,715. PROMPT-A-CORD. Electro Learner Corporation, assignee of Arthur R. Schmoyer. SN 293,174. Pub. 3–4–69. Filed 3–13–68.

869,716. CLOVERLAY AND DESIGN. Cloverlay, Inc. SN 298,426. Pub. 3–4–69. Filed 5–17–68.

869,717. QUIET TONE AND DESIGN. Gam Enterprises, Inc. SN 305,121. Pub. 3–4–69. Filed 8–14–68.

869,718. BONANZA. Virgil Leroy Hume, d.b.a. Roy Kelly. SN 305,545. Pub. 3–4–69. Filed 8–20–68.

869,719. AMARET AND DESIGN. American Association of Recorded Talent, Inc., d.b.a. Amaret Records. SN 311,733. Pub. 3–4–69. Filed 11–12–68.

Class 37 — Paper and Stationery

869,567. (See Class 2 for this trademark.)

Class 38 — Prints and Publications

869,720. AUTO TECH. Ford Motor Company. SN 263,903. Pub. 3–4–69. Filed 2–3–67.

869,721. GEEGEE. Gloria Stavers. SN 277,081. Pub. 3–4–69. Filed 7–28–67.

869,722. GERIATRIC TIMES. Edwill Publications, Inc. SN 283,436. Pub. 3–4–69. Filed 10–26–67.

869,723. PEST CONTROL. The Harvest Publishing Company. SN 288,312. Pub. 3–4–69. Filed 1–8–68.

869,724. EXECUTIVE SHOPPER. Caddylak Systems, Inc. SN 289,573. Pub. 3–4–69. Filed 1–25–68.

869,725. GENERATION. Generation, Inc., assignee of Handler-Tamarkin Publishing. SN 294,623. Pub. 3–4–69. Filed 4–1–68.

869,726. FAMOUS ARTISTS MAGAZINE. Famous Artists Schools, Inc. SN 297,547. Pub. 3–4–69. Filed 5–7–68.

869,727. EXECUTIVE MOTIVATION PROGRAM AND DESIGN. Success Motivation Institute, Inc. SN 306,039. Pub. 3–4–69. Filed 8–27–68.

869,728. ZANY. HDB Publishing Co., Inc. SN 308,657. Pub. 3–4–69. Filed 10–2–68.

Class 39 — Clothing

869,729. PLEET INTERNATIONALE AND DESIGN. Well Made Pants Co., Inc. SN 271,394. Pub. 3–4–69. Filed 5–12–67.

869,730. SAVINI. Modern Shoe Company. SN 277,366. Pub. 3–4–69. Filed 8–2–67.

869,731. FIRST TEE. Pete Uram Sales. SN 282,307. Pub. 3–4–69. Filed 10–11–67.

869,732. TWIN TOGS AND DESIGN. Twin Togs Creations Inc. SN 282,493. Pub. 3–4–69. Filed 10–13–67.

869,733. MIRA-CLEAN. M. Nirenberg Sons, Inc. SN 282,603. Pub. 3–4–69. Filed 10–16–67.

869,734. THE MARUM MAN. Hayward Marum, Inc. SN 288,817. Pub. 3–4–69. Filed 1–15–68.

869,735. TYS BY ROOSTER. Rooster, Inc. SN 289,126. Pub. 3–4–69. Filed 1–18–68.

869,736. HOOVER FASHIONS. Hoover Manufacturing & Sales Co., Inc. SN 289,895. Pub. 3–4–69. Filed 1–30–68.

869,737. BACK HELP. Flexnit Company, Inc. SN 290,384. Pub. 3–4–69. Filed 2–6–68.

869,738. MIRSA. Mirsa Italian Knitwear Ltd. SN 290,507 Pub. 3–4–69. Filed 2–7–68.

869,739. STIX 'N STONES. Pic 'N Pay Stores, Inc. SN 290,968. Pub. 3–4–69. Filed 2–13–68.

869,740. JANE ROBERTS. Barringer Knitting Mills Incorporated. SN 291,828. Pub. 3–4–69. Filed 2–26–68.

869,741. WILLSON JET-CAP. ESB Incorporated. SN 293,701. Pub. 3–4–69. Filed 3–20–68.

869,742. LONDON CHARACTER BOOTIQUE AND DESIGN. Commonwealth Shoe & Leather Co., Inc., d.b.a. London Character Shoes. SN 297,537. Pub. 3–4–69. Filed 5–7–68.

869,743. MINARELLI. Spartans Industries, Inc. SN 297,610. Pub. 3–4–69. Filed 5–7–68.

869,744. CUPID. Cupid Foundations, Inc. SN 299,758. Pub. 3–4–69. Filed 6–5–68.

869,745. SANDWICH ISLES. Malia Imports, Ltd. SN 302,852. Pub. 3–4–69. Filed 7–16–68.

869,746. SPREE-TOGS. First Virginia Corporation. SN 304,681. Pub. 3–4–69. Filed 8–8–68.

869,747. OLD MISSION. Arthur R. Altieri, d.b.a. Sunland Sandals. SN 304,733. Pub. 3–4–69. Filed 8–9–68.

869,748. CUPCAKE. Blair Fashions, Inc. SN 311,204. Pub. 3–4–69. Filed 11–4–68.

Class 40 — Fancy Goods, Furnishings, and Notions

869,749. HAPPY CURL. Kemtech Incorporated. SN 299,408. Pub. 3–4–69. Filed 5–31–68.

869,750. FLEXA-BASE. V.I.P. International Scientific Corp. SN 300,143. Pub. 3–4–69. Filed 6–10–68.

Class 41 — Canes, Parasols, and Umbrellas

869,751. RAINBREAKER ETC. AND DESIGN. L. P. Henryson & Co., Inc. SN 298,600. Pub. 3–4–69. Filed 5–20–68.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

869,752. WONDERELLA. William Heller, Inc. SN 286,265. Pub. 3–4–69. Filed 12–5–67.

869,753. BERROCO'S ACCROCHE. Berroco SSM Corporation. SN 288,184. Pub. 3–4–69. Filed 1–5–68.

869,754. STRI KING COLORFUL ACOUSTICAL DRAPES. Arthur H. Johnson, d.b.a. Strike-Mor Company. SN 291,611. Pub. 3–4–69. Filed 2–21–68.

869,755. OXHIDE. J. C. Penney Company. SN 292,810. Pub. 3–4–69. Filed 3–8–68.

869,756. LIVELY-KNITS. Lively Knits, Inc. SN 294,060. Pub. 3–4–69. Filed 3–25–68.

869,757. GENESIS. Regal Rugs, Inc. SN 302,128. Pub. 3–4–69. Filed 7–5–68.

Class 44 — Dental, Medical, and Surgical Appliances

869,758. TURNER. Conrac Corporation. SN 281,457. Pub. 3–4–69. Filed 9–29–67.

869,759. ENDURA-DENT. Endura Appliance Corporation. SN 282,181. Pub. 3–4–69. Filed 10–10–67.

869,760. REPRESENTATION OF A MAN. Sani-Pac Corporation. SN 284,320. Pub. 3–4–69. Filed 11–7–67.

869,761. E-Z FREEZ AND DESIGN. Verlam Distributors, Inc., d.b.a. Jack Frost Laboratories. SN 285,274. Pub. 3–4–69. Filed 11–20–67.

869,762. BANDMASTER. Ira V. Ainsworth. SN 288,582. Pub. 3–4–69. Filed 1–11–68.

869,763. HUMITRON. Prak-T-Kal Corporation. SN 293,172. Pub. 3–4–69. Filed 3–13–68.

869,764. SWIV-L-EZE. Delga Enterprises Inc. SN 307,196. Pub. 3–4–69. Filed 9–12–68.

869,765. TURBINAIRE. Merck & Co., Inc. SN 307,340. Pub. 3–4–69. Filed 9–13–68.

869,766. CHRONA. Belvedere Products, Inc. SN 307,412. Pub. 3–4–69. Filed 9–16–68.

869,767. ANTIGON. Svend Schrøder, d.b.a. the firm Svend Schrøder. SN 307,510. Pub. 3–4–69. Filed 9–16–68.

869,768. CARDINAL. Cardinal Instrument Corporation. SN 307,558. Pub. 3–4–69. Filed 9–17–68.

869,769. CLIMASKE AND DESIGN. Hirtz & Co., Kommanditgesellschaft. SN 307,646. Pub. 3–4–69. Filed 9–18–68.

869,770. GRASONHOFF. Fuller Laboratories, Inc. SN 308,367. Pub. 3–4–69. Filed 9–27–68.

869,771. VACU-PRESS. Right-Gard Corporation. SN 309,481. Pub. 3–4–69. Filed 10–11–68.

869,772. PANCENTRIC. Pennsalt Chemicals Corporation. SN 311,171. Pub. 3–4–69. Filed 11–1–68.

869,773. PYROCOLOR. Williams Gold Refining Company, Incorporated. SN 311,195. Pub. 3–4–69. Filed 11–1–68.

Class 45 — Soft Drinks and Carbonated Waters

869,774. ZEBRA STRIPE. Canada Dry Corporation, assignee of Canada Dry Corporation. SN 291,963. Pub. 3–4–69. Filed 2–27–68.

869,775. BURGER KING. Burger King Corporation. MULTIPLE CLASS (Classes 45 and 46). SN 306,090. Pub. 3–4–69. Filed 9–9–68.

869,776. DESIGN OF A KING ON A BUN. Burger King Corporation. MULTIPLE CLASS (Classes 45 and 46). SN 306,536. Pub. 3–4–69. Filed 9–12–68.

Class 46 — Foods and Ingredients of Foods

869,775. (See Class 45 for this trademark.)

869,776. (See Class 45 for this trademark.)

869,777. MOTHER'S WHIMSIES. Mother's Cake & Cookie Co. SN 272,621. Pub. 3–4–69. Filed 5–29–67.

869,778. DURKO. SCM Corporation, d.b.a. Durkee Famous Foods. SN 281,824. Pub. 3–4–69. Filed 10–4–67.

869,779. SARA LEE. Kitchens of Sara Lee, Inc. SN 285,027. Pub. 3–4–69. Filed 11–16–67.

869,780. WECHSLER. Wechsler Coffee Corporation, by change of name from Ph. Wechsler & Son, Inc. SN 285,758. Pub. 3–4–69. Filed 11–28–67.

869,781. MISCELLANEOUS DESIGN. Wechsler Coffee Corporation, by change of name from Ph. Wechsler & Son, Inc. SN 285,759. Pub. 3–4–69. Filed 11–28–67.

869,782. WECHSLER AND DESIGN. Wechsler Coffee Corporation, by change of name from Ph. Wechsler & Son, Inc. SN 285,760. Pub. 3–4–69. Filed 11–28–67.

869,783. TOP TASTE. National Tea Co. SN 287,037. Pub. 3–4–69. Filed 12–15–67.

869,784. MAXWELL HOUSE SC AND DESIGN. General Foods Corporation. SN 289,674. Pub. 3–4–69. Filed 1–26–68.

869,785. PATH FINDER. Bristol-Myers Company. SN 294,583. Pub. 3–4–69. Filed 4–1–68.

869,786. CONTIN-U-WIP. Frederick F. Lowenfels & Son. SN 295,241. Pub. 3–4–69. Filed 4–9–68.

869,787. 4 SQUARE. Prince Macaroni Manufacturing Company. SN 302,124. Pub. 3–4–69. Filed 7–5–68.

869,788. CUBAMAR. Florida Bonded Packing Co., Inc. SN 303,224. Pub. 3–4–69. Filed 7–22–68.

869,789. SANTA LUCIA. C. Pappas Company Inc. SN 303,437. Pub. 3–4–69. Filed 7–23–68.

869,790. FRACKERS. General Mills, Inc. SN 303,476. Pub. 3–4–69. Filed 7–24–68.

869,791. NATCHOS. General Mills, Inc. SN 303,573. Pub. 3–4–69. Filed 7–25–68.

869,792. LECITOL. York Bar Bell Company, Inc., d.b.a. York Barbell Co., and A Bob Hoffman Product. SN 306,040. Pub. 3–4–69. Filed 8–27–68.

869,793. EARLY DEW. General Mills, Inc. SN 311,440. Pub. 3–4–69. Filed 11–6–68.

869,794. SAHARA. Sahara Packing Company. SN 311,655. Pub. 3–4–69. Filed 11–8–68.

869,795. SPHINX. Sahara Packing Company. SN 311,656. Pub. 3–4–69. Filed 11–8–68.

869,796. PHARAOH. Sahara Packing Company. SN 311,657. Pub. 3–4–69. Filed 11–8–68.

Class 47 — Wines

869,797. PEACOCK. Monarch Wine Co., Inc. SN 292,492. Pub. 3–4–69. Filed 3–5–68.

Class 49 — Distilled Alcoholic Liquors

869,798. HICKEY RIGGS. Wellington Importers, Ltd., d.b.a. Wetherby Locke & Co. Ltd. SN 308,444. Pub. 3–4–69. Filed 9–30–68.

Class 50 — Merchandise Not Otherwise Classified

869,566. (See Class 2 for this trademark.)

Class 51 — Cosmetics and Toilet Preparations

869,799. FEMIA. Femia Gesellschaft fur Kosmetische und Pharmazeutische Erzeugnisse m.b.H. SN 287,536. Pub. 3–4–69. Filed 12–26–67.

869,800. HAPPY FACE ETC. AND DESIGN. The Gillette Company, d.b.a. The Toni Company. SN 290,282. Pub. 3–4–69. Filed 2–5–68.

869,801. HAPPY FACE. The Gillette Company, d.b.a. The Toni Company. SN 294,276. Pub. 3–4–69. Filed 3–27–68.

869,802. DISCREET. Bristol-Myers Company. SN 296,638. Pub. 3–4–69. Filed 4–26–68.

869,803. HOUSE OF FULLER. The Fuller Brush Company. SN 297,285. Pub. 3–4–69. Filed 5–3–68.

869,804. TELEGRAM. Bristol-Myers Company. SN 297,378. Pub. 3–4–69. Filed 5–6–68.

869,805. HALF FACE DESIGN. Essex Chemical Corporation. SN 298,115. Pub. 3–4–69. Filed 5–14–68.

869,806. STROBE. Bristol-Myers Company. SN 298,798. Pub. 3–4–69. Filed 5–22–68.

869,807. CONTENTMENT. Avon Products, Inc. SN 300,245. Pub. 3–4–69. Filed 6–12–68.

869,808. HUMORESQUE. Avon Products, Inc. SN 301,155. Pub. 3–4–69. Filed 6–24–68.

869,809. MAINSTREAM. Avon Products, Inc. SN 301,163. Pub. 3–4–69. Filed 6–24–68.

Class 52 — Detergents and Soaps

869,810. CLEVE-TEK ALKA-14. Cleveland Technical Center, Inc. SN 286,505. Pub. 3–4–69. Filed 12–8–67.

869,811. CLEVE-TEK. Cleveland Technical Center, Inc. SN 286,506. Pub. 3–4–69. Filed 12–8–67.

869,812. ALKA-14. Cleveland Technical Center, Inc. SN 286,507. Pub. 3–4–69. Filed 12–8–67.

869,813. CAROLINA ORIGINALS. Carolina Company, Inc., d.b.a. The Carolina Soap & Candle Makers. SN 295,110. Pub. 2–11–69. Filed 4–8–68.

869,814. HOUSE OF FULLER. The Fuller Brush Company. SN 297,286. Pub. 3–4–69. Filed 5–3–68.

869,815. PENDULUM. Wyandotte Chemicals Corporation. SN 299,806. Pub. 3–4–69. Filed 6–5–68.

869,816. CONTENTMENT. Avon Products, Inc. SN 300,244. Pub. 3–4–69. Filed 6–12–68.

Service Marks

Class 100 — Miscellaneous

869,817. MISCELLANEOUS DESIGN. Picture Craft Corporation. MULTIPLE CLASS (Classes 100 and 106). SN 267,354. Pub. 3–4–69. Filed 3–22–67.

869,818. COMPATA. Compata Incorporated. SN 274,712. Pub. 3–4–69. Filed 6–26–67.

869,819. RUBY RED'S AND DESIGN. Ruby Red's, Inc. SN 279,681. Pub. 3–4–69. Filed 9–5–67.

869,820. ADI AND DESIGN. American Dynamics International, Inc. SN 286,240. Pub. 3–4–69. Filed 12–5–67.

869,821. C AND DESIGN. The R. L. Clark Corp. SN 287,146. Pub. 3–4–69. Filed 12–18–68.

869,822. TTC (DESIGN). Tube Transit Corporation. SN 294,699. Pub. 3–4–69. Filed 4–1–68.

869,823. DEAR'S COUNTRY HOUSE AND DESIGN. Dear's Country House, Inc. SN 310,961. Pub. 3–4–69. Filed 10–31–68.

Class 101 — Advertising and Business

869,824. ASCUS FILE. Ascus Communication and Services Center, Inc. SN 294,150. Pub. 3–4–69. Filed 3–26–68.

869,825. APCOM AND DESIGN. Applied Computer Technology, Inc. SN 303,468. Pub. 3–4–69. Filed 7–24–68.

Class 102 — Insurance and Financial

869,826. UNIGARD AND DESIGN. Northwestern Mutual Insurance Company. SN 300,100. Pub. 3–4–69. Filed 6–10–68.

869,827. MEDICREDIT. Medicredit, Incorporated, assignee of Innova, Inc. SN 300,873. Pub. 3–4–69. Filed 6–20–68.

Class 103 — Construction and Repair

869,828. PLA-COR AND DESIGN. Plastic Corporation of Chicago. SN 294,308. Pub. 3–4–69. Filed 3–27–68.

869,829. BART & DEE. The Bart & Dee Corporation. SN 294,573. Pub. 3–4–69. Filed 4–1–68.

869,830. COSCO. Hamilton Cosco, Inc. SN 309,039. Pub. 3–4–69. Filed 10–7–68.

Class 105 — Transportation and Storage

869,831. WESTWARD HO. El Patio Travel Inc. SN 297,048. Pub. 3–4–69. Filed 5–1–68.

869,832. CAPS. Emery Air Freight Corporation. SN 299,222. Pub. 3–4–69. Filed 5–28–68.

869,833. THE V.I.P. AIRLINE. KMK Airlines, Inc. SN 306,845. Pub. 3–4–69. Filed 9–9–68.

Class 106 — Material Treatment

869,817. (See Class 100 for this trademark.)

Class 107 — Education and Entertainment

869,834. LOVE. Arthur Taylor Lee. SN 261,736. Pub. 3–4–69. Filed 12–30–66.

869,835. AIRPLAY. Pepper Sound Studios, Inc., d.b.a. Airplay International. SN 267,975. Pub. 3–4–69. Filed 3–30–67.

869,836. MISCELLANEOUS DESIGN. Charles C. Page. SN 274,645. Pub. 3–4–69. Filed 6–23–67.

869,837. THE ORIGINAL STRANGERS. Irving E. Bartron, Jr. SN 276,086. Pub. 3–4–69. Filed 7–17–67.

869,838. CUBS AND DESIGN. Chicago National League Ball Club (Inc.). SN 278,467. Pub. 3–4–69. Filed 8–17–67.

869,839. CFH COUNCIL ON FAMILY HEALTH AND DESIGN. Council on Family Health. SN 279,278. Pub. 3–4–69. Filed 8–29–67.

869,840. THE WORLD'S GREATEST ENTERTAINERS APPEAR AT HARRAH'S. Harrah's Club. SN 285,494. Pub. 3–4–69. Filed 11–24–67.

869,841. RCA. Radio Corporation of America. SN 305,793. Pub. 3–4–69. Filed 8–23–68.

869,842. RCA. Radio Corporation of America. SN 305,794. Pub. 3–4–69. Filed 8–23–68.

869,843. DONNYBROOKE. Donnybrooke, Inc. SN 307,062. Pub. 3–4–69. Filed 9–11–68.

Collective Membership Mark

Class 200

869,844. NPC. National Personnel Consultants. SN 291,518. Pub. 3–4–69. Filed 2–20–68.

Certification Mark

Class A — Goods

869,845. VAPORIZED. DHJ Industries Inc. SN 284,295. Pub. 3–4–69. Filed 11–7–67.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

SECTION 1

(Combined Certificates)

869,848. Virginia Dare Extract Co., Inc., Brooklyn, N.Y. SN 289,555. Filed P.R. 1–25–68; Am. S.R. 1–3–69.

GOLDEN DELICIOUS

Class 45—Soft Drinks and Carbonated Waters

For Soft Drinks (Int. Cl. 32).

Class 46—Foods and Ingredients of Foods

For Food Flavoring Syrups and Extracts (Int. Cl. 30).

First use Mar. 1, 1967.

SECTION 2

Class 37 — Paper and Stationery

869,846. Kleer-Vu Industries, Inc., New York, N.Y. SN 304,548. Filed P.R. 8–7–68; Am. S.R. 2–14–69.

SLIP 'N SLIDE

For Report Covers (Int. Cl. 16).
First use Jan. 5, 1966.

Class 43 — Thread and Yarn

869,847. Caron Spinning Company, Rochelle, Ill. SN 279,536. Filed 9–1–67.

KORSPUN

For Yarn (Int. Cl. 23).
First use on or about July 30, 1938.

Class 45 — Soft Drinks and Carbonated Waters

869,848. See Section 1 (Combined Certificate).

Class 46 — Foods and Ingredients of Foods

869,848. See Section 1 (Combined Certificate).

869,849. Jerrico, Inc., d.b.a. Jerry's Restaurants, Lexington, Ky. SN 290,498. Filed P.R. 2–7–68; Am. S.R. 9–10–68.

SNAC PAC

For Fried Chicken Packed in Take-Out Containers (Int. Cl. 29).
First use Oct. 14, 1965.

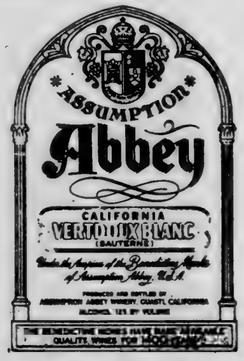
Class 47 — Wines

869,850. Francesco Bertolli S.p.A., Lucca, Italy. SN 289,075. Filed P.R. 1–18–68; Am. S.R. 2–6–69.



Owner of U.S. Reg. Nos. 312,368 and 697,156.
For Wines (Int. Cl. 33).
First use Mar. 9, 1967; in commerce Sept. 9, 1967.

869,851. Brookside Vineyard Company, d.b.a. Assumption Abbey Winery, Guasti, Calif. SN 294,718. Filed P.R. 4–2–68; Am. S.R. 11–20–68.



The term "Vertdoux Blanc" may be translated as "green-sweet-white." The term "Pax" may be translated as "peace"; the term "Iter Para Tutum" may be translated as "prepare for a safe journey."
For Sauterne Wine (Int. Cl. 33).
First use Apr. 5, 1967.

Class 51 — Cosmetics and Toilet Preparations

869,852. Elizabeth Arden Sales Corporation, New York, N.Y. SN 282,426. Filed P.R. 10–13–67; Am. S.R. 1–27–69.

PINK DUSK

For Lipsticks, Rouge and Nail Polish (Int. Cl. 3). First use Sept. 15, 1967.

Class 52 — Detergents and Soaps

869,853. Joseph Frank Uddo, d.b.a. The Uddo Company, New Orleans, La. SN 290,988. Filed P.R. 2–13–68; Am. S.R. 2–4–69.

LEM 'N' KLEAN

For Household Cleaner (Int. Cl. 3). First use Jan. 22, 1968.

TRADEMARK REGISTRATIONS RENEWED

69,468. SMILE! Cl. 45 (Int. Cl. 32). 6–16–08.
72,115. RED COMB. Cl. 46 (Int. Cl. 31). 1–5–09.
74,109. IVORY. Cl. 46 (Int. Cl. 30). 6–15–09.
238,730. THE ARISTOCRAT. Cl. 46 (Int. Cl. 29). 2–14–28.
245,807. "ABBOTT'S DIGEST" AND BACKGROUND DESIGN. Cl. 38 (Int. Cl. 16). 8–21–28.
249,863. FIELD & STREAM. Cl. 38 (Int. Cl. 16). 11–20–28.
250,756. CALROD. Cl. 21 (Int. Cl. 9). 12–18–28.
252,278. "CROUCH & FITZGERALD" ETC. AND DESIGN. Cl. 3 (Int. Cl. 18). 1–29–29.
253,520. COLONIAL. Cl. 46 (Int. Cl. 30). 2–26–29.
253,631. ROMANY. Cl. 46 (Int. Cl. 29). 3–5–29.
254,083. VALSTAR. Cl. 39 (Int. Cl. 25). 3–12–29.
254,970. "C & FNY" AND DESIGN. Cl. 3 (Int. Cl. 18). 4–2–29.
255,152. PENTASOL. Cl. 6 (Int. Cl. 1). 4–16–29.
255,452. FOCALIPSE. Cl. 21 (Int. Cl. 11). 4–23–29.
255,990. DESIGN OF YELLOW TRIANGLE WITH CIRCLE. Cl. 7 (Int. Cl. 6). 5–7–29.
256,427. "MELROSE" AND REPRESENTATION OF ROSE. Cl. 39 (Int. Cl. 25). 5–14–29.
256,777. RED TOP. Cl. 10 (Int. Cl. 1). 5–21–29.
257,008. "CRISTAL" AND DESIGN. Cl. 12 (Int. Cl. 19). 5–28–29.
257,103. CADET. Cl. 15 (Int. Cl. 4). 5–28–29.
257,156. WEST. Cl. 6 (Int. Cls. 1 and 5). 5–28–29.
257,785. BAKER'S. Cl. 46 (Int. Cl. 30). 6–18–29.
257,956. "THE FIRST THOUGHT." Cl. 18 (Int. Cl. 5). 6–25–29.
258,395. LUXURIA. Cl. 39 (Int. Cl. 25). 7–9–29.
258,538. HEXALIN. Cl. 6 (Int. Cl. 1). 7–9–29.
258,572. LOCKHEED. Cl. 6 (Int. Cl. 1). 7–9–29.
258,776. WAXTEX. Cl. 37 (Int. Cl. 16). 7–16–29.
259,438. QUEEN ISABELLA. Cl. 46 (Int. Cl. 29). 7–30–29.
260,037. WYTASE. Cl. 46 (Int. Cl. 30). 8–13–29.
441,986. COMMON SENSE. Cl. 17 (Int. Cl. 34). 2–1–49.
441,997. THE DOT LINE. Cl. 21 (Int. Cl. 9). 2–8–49.
442,728. PECAN TOTS. Cl. 46 (Int. Cl. 30). 5–24–49.
442,616. RAXON. Cl. 42 (Int. Cl. 24). 5–3–49.
442,644. MAXI. Cl. 19 (Int. Cl. 12). 5–10–49.
503,830. OLD MONMOUTH. Cl. 46 (Int. Cl. 30). 11–9–48.
503,930. MURAD. Cl. 17 (Int. Cl. 34). 11–16–48.
503,933. FRIENDS. Cl. 17 (Int. Cl. 34). 11–16–48.
504,443. NISILOY. Cl. 14 (Int. Cl. 6). 11–30–48.
504,875. STEADIFEED. Cl. 44 (Int. Cl. 10). 12–14–48.
505,017. OLD GOLD. Cl. 17 (Int. Cl. 34). 12–21–48.
505,046. TRA-LEZE. Cl. 1 (Int. Cl. 4). 12–21–48.
505,182. SPAIRPAK. Cl. 39 (Int. Cl. 25). 12–28–48.
505,428. TO. Cl. 1 (Int. Cl. 31). 1–4–49.
505,486. MONTVERT (GREEN MOUNTAIN). Cl. 6 (Int. Cl. 5). 1–4–49.
505,504. BUCKSHOT. Cl. 52 (Int. Cl. 3). 1–4–49.
505,505. TRIPLEX. Cl. 52 (Int. Cl. 3). 1–4–49.
505,968. ATMO. Cl. 21 (Int. Cl. 9). 1–25–49.
506,031. THE KIPLINGER WASHINGTON LETTER. Cl. 38 (Int. Cl. 16). 1–25–49.
506,032. THE KIPLINGER TAX LETTER. Cl. 38 (Int. Cl. 16). 1–25–49.
506,033. THE KIPLINGER AGRICULTURAL LETTER. Cl. 38 (Int. Cl. 16). 1–25–49.
506,041. PANAMA. Cl. 46 (Int. Cl. 30). 1–25–49.
506,070. DE-LIQUID. Cl. 18 (Int. Cl. 5). 1–25–49.
506,144. THE CHANGING TIME. Cl. 38 (Int. Cl. 16). 2–1–49.
506,174. SCRANTON. Cl. 42 (Int. Cl. 24). 2–1–49.
506,650. AERODINAMIC AND DESIGN. Cl. 26 (Int. Cl. 9). 2–15–49.
506,807. MILPRINT. Cl. 37 (Int. Cl. 16). 2–22–49.
506,836. EMBASSY. Cl. 17 (Int. Cl. 34). 2–22–49.
506,855. SHUR. Cl. 52 (Int. Cl. 3). 2–22–49.
506,934. INDIA HOUSE. Cl. 17 (Int. Cl. 34). 2–22–49.
506,936. EQYPTIAN DEITIES. Cl. 17 (Int. Cl. 34). 2–22–49.
507,046. CONTI AND DESIGN. Cl. 52 (Int. Cl. 3). 2–22–49.
507,048. AMC. Cl. 31 (Int. Cl. 11). 2–22–49.
507,122. MUSSELMAN'S. Cl. 46 (Int. Cl. 16). 3–1–49.
507,138. SHELTER ISLAND. Cl. 39 (Int. Cl. 25). 3–1–49.
507,177. KEEP-KOOL. Cl. 39 (Int. Cl. 25). 3–1–49.
507,178. "DRUMMOND DOWN." Cl. 39 (Int. Cl. 25). 3–1–49.
507,226. KARAJAH. Cl. 39 (Int. Cl. 25). 3–1–49.
507,227. BRITONIAN. Cl. 39 (Int. Cl. 25). 3–1–49.
507,229. DESIGN OF A HAND AND NEEDLE. Cl. 39 (Int. Cl. 25). 3–1–49.
507,230. WM CREST (DESIGN). Cl. 39 (Int. Cl. 25). 3–1–49.
507,231. CANTERBURY. Cl. 39 (Int. Cl. 25). 3–1–49.
507,284. CANDIDATE. Cl. 39 (Int. Cl. 25). 3–1–49.
507,319. RIPPLETONE. Cl. 36 (Int. Cl. 15). 3–1–49.
507,348. FELTAN. Cl. 42 (Int. Cl. 24). 3–8–49.
507,382. BOYE AND DESIGN. Cl. 40 (Int. Cls. 18 and 26). 3–8–49.
507,387. WOOL'S. Cl. 46 (Int. Cl. 29). 3–8–49.
507,425. GRIPPET. Cl. 40 (Int. Cl. 26). 3–8–49.
507,542. EXERSWING. Cl. 44 (Int. Cl. 10). 3–15–49.
507,661. MARS AND WARRIOR DESIGN. Cl. 21 (Int. Cls. 9 and 11). 3–15–49.
507,712. PANEX. Cl. 52 (Int. Cl. 3). 3–15–49.
507,722. GEOPHOTO AND DESIGN. Cl. 100 (Int. Cl. 42). 3–15–49.
507,797. MOLINE. Cl. 23 (Int. Cl. 7). 3–22–49.
507,830. DESIGN OF ACE OF SPADES. Cl. 23 (Int. Cl. 7). 3–22–49.
507,919. WOOLIGAN. Cl. 42 (Int. Cl. 24). 3–22–49.
507,980. VELVA COMPLEXION FILM. Cl. 51 (Int. Cl. 3). 3–22–49.
508,069. COLDPRUF. Cl. 39 (Int. Cl. 25). 3–29–49.
508,103. FUSE. Cl. 35 (Int. Cl. 12). 3–29–49.
508,131. ASIDBAR. Cl. 12 (Int. Cl. 19). 3–29–49.
508,175. AMERICAN BEAUTY. Cl. 21 (Int. Cl. 9). 4–5–49.
508,186. PENTON'S FOUNDRY LIST. Cl. 38 (Int. Cl. 16). 4–5–49.
508,263. RAINAWAY. Cl. 42 (Int. Cl. 24). 4–5–49.
508,302. CEARINSE. Cl. 52 (Int. Cl. 3). 4–5–49.
508,330. FASHIONET. Cl. 42 (Int. Cls. 24 and 26). 4–5–49.
508,338. BRYTE. Cl. 52 (Int. Cl. 3). 4–5–49.
508,408. SOUTHCO. Cl. 13 (Int. Cl. 6). 4–12–49.
508,492. CHIQUITA BANANA AND DESIGN. Cl. 46 (Int. Cl. 31). 4–12–49.
508,575. CARBONOX. Cl. 6 (Int. Cl. 1). 4–12–49.
508,586. DYCLENE. Cl. 52 (Int. Cl. 1). 4–12–49.
508,716. AMERICAN LAUNDRY DIGEST. Cl. 38 (Int. Cl. 16). 4–19–49.
508,717. AMERICAN DRYCLEANER. Cl. 38 (Int. Cl. 16). 4–19–49.
508,884. BING & GRONDAHL. Cl. 30 (Int. Cl. 21). 4–26–49.
508,906. CASTLETON CHINA. Cl. 30 (Int. Cl. 21). 4–26–49.
509 019. REDDY-LOC. Cl. 12 (Int. Cl. 19). 4–26–49.
509,037. INSTO GAS SAFETY ECONOMY PORTABILITY AND DESIGN. Cl. 34 (Int. Cls. 7, 8, and 11). 4–26–49.
509,082. HEMEX. Cl. 18 (Int. Cl. 5). 4–26–49.
509,113. LOOPING. Cl. 27 (Int. Cl. 14). 4–26–49.
509,256. HYDROSIZE. Cl. 23 (Int. Cl. 7). 5–3–49.
509,329. HUME. Cl. 46 (Int. Cl. 29). 5–3–49.

509,451. POCKETROY. Cl. 42 (Int. Cl. 24). 5–3–49.
509,531. SUPER-GAB. Cl. 42 (Int. Cl. 24). 5–3–49.
509,593. MOUNT TOM. Cl. 37 (Int. Cl. 16). 5–10–49.
509,762. V-H. Cl. 18 (Int. Cl. 5). 5–10–49.
510,053. MC. Cl. 46 (Int. Cl. 30). 5–24–49.
510,361. BUFFLEX. Cl. 1 (Int. Cl. 18). 5–31–49.
510,362. FOREST OAK. Cl. 1 (Int. Cl. 18). 5–31–49.
510,363. GRAINFLEX. Cl. 1 (Int. Cl. 18). 5–31–49.
510,364. STREAMLINED. Cl. 1 (Int. Cl. 18). 5–31–49.
510,365. TIOGA OAK AND DESIGN. Cl. 1 (Int. Cl. 18). 5–31–49.
510,390. METALEX. Cl. 52 (Int. Cl. 1). 5–31–49.
510,579. AIR GLIDE. Cl. 15 (Int. Cl. 4). 6–7–49.
511,132. STADIUM JRS. Cl. 39 (Int. Cl. 25). 6–21–49.
511,133. STADIUM BOOT JRS. Cl. 39 (Int. Cl. 25). 6–21–49.
511,202. ROPE STRAND DESIGN. Cl. 7 (Int. Cl. 6). 6–21–49.
511,453. SUNSET. Cl. 38 (Int. Cl. 16). 6–21–49.
511,496. GLASSINE AND DESIGN. Cl. 37 (Int. Cl. 16). 6–21–49.
511,740. RILLING. Cl. 51 (Int. Cl. 3). 7–5–49.
511,827. ROYAL CRYSTAL. Cl. 46 (Int. Cl. 30). 7–5–49.
511,845. WELSH. Cl. 19 (Int. Cl. 12). 7–5–49.
511,948. DAILY LOCAL NEWS. Cl. 38 (Int. Cl. 16). 7–5–49.
512,164. GLEASON. Cl. 23 (Int. Cl. 7). 7–12–49.
512,203. SOUZA. Cl. 46 (Int. Cl. 31). 7–12–49.
512,279. WEST AND OVAL DESIGN. Cl. 39 (Int. Cl. 25 7–12–49.
512,398. FRANCES DENNEY. Cl. 51 (Int. Cls. 3 and 5). 7–19–49.
512,421. MYSTERY. Cl. 13 (Int. Cl. 9). 7–19–49.
512,437. OIL FOIL. Cl. 35 (Int. Cl. 17). 7–19–49.
512,489. SELF STICK. Cl. 37 (Int. Cl. 16). 7–19–49.
512,514. DR. SCHOLL'S WITH SCROLL. Cl. 44 (Int. Cl. 10). 7–19–49.
512,515. RE-FORM. Cl. 44 (Int. Cl. 10). 7–19–49.
512,516. TRI-SPRING. Cl. 44 (Int. Cl. 10). 7–19–49.
512,785. PRIZE. Cl. 46 (Int. Cl. 31). 7–26–49.
512,884. STAG. Cl. 48 (Int. Cl. 32). 7–26–49.
512,901. KENFREW PLAID. Cl. 42. (Int. Cl. 24). 7–26–49.
512,951. GRIP-LOCK. Cl. 37 (Int. Cl. 16). 7–26–49.
513,018. MOUSE SEED. Cl. 6 (Int. Cl. 5). 8–2–49.
513,208. TRUWEAR. Cl. 42 (Int. Cl. 24). 8–2–49.
513,249. MIRACLE. Cl. 43 (Int. Cl. 23). 8–9–49.
513,268. NOTEAR. Cl. 37 (Int. Cl. 16). 8–9–49.
513,319. CHIEF AND DESIGN. Cl. 13 (Int. Cl. 9). 8–9–49.
513,609. BELMONT. Cl. 39 (Int. Cl. 25). 8–16–49.
513,910. TENDER—LITE AND DESIGN. Cl. 46 (Int. Cl. 30). 8–16–49.

TRADEMARK REGISTRATIONS CANCELED

Section 8

175,792. NORRISTOWN TIMES HERALD. Cl. 38. 11–13–23.
205,487. DENTALONE. Cl. 18. 11–10–25.
288,666. COFFEE-ROYAL. Cl. 45. 11–3–31.
747,062. UNITED SPORTING GOODS DEALERS AND DESIGN. Cl. 101. 3–19–63.
747,335. BUDLON. Cl. 39. 3–26–63.
747,348. EMBATEX. Cl. 42. 3–26–63.

The following registrations issued Apr. 2, 1963

747,421. KORDOTAN. Cl. 1.
747,422. ANILWAX. Cl. 1.
747,423. PRO-FAX. Cl. 1.
747,429. "MANICURETTE." Cl. 2.
747,432. EMBLEM DESIGN. Cl. 4.
747,437. TINT-OUT. Cl. 6.
747,439. CONTINENTAL. Cl. 6.
747,441. ASH KING. Cl. 8.
747,442. JEANTET. Cl. 8.
747,444. CHOKEE. Cl. 10.
747,445. NOVOPHALT. Cl. 12.
747,447. FASTILE. Cl. 12.
747,448. UNIT 2.75. Cl. 12.
747,450. KORDECK. Cl. 12.
747,453. VIP. Cl. 12.
747,465. R AND DESIGN. Cl. 14.
747,487. IL CAPITANO AND DESIGN. Cl. 17.
747,493. REGIMEN-TABLETS. Cl. 18.
747,505. BLEPHASOL. Cl. 18.
747,508. LISTILAXANT. Cl. 18.
747,509. PILLO. Cl. 18.
747,510. ACTOPHENE. Cl. 18.
747,511. EQUI-PANE. Cl. 18.
747,519. CRUSADER AND DESIGN. Cl. 19.
747,523. BC AND DESIGN. Cl. 19.
747,528. SPINTRAP. Cl. 21.
747,529. SPINTRAP AND DESIGN. Cl. 21.
747,530. FERROXKOR. Cl. 21.
747,534. TALK MASTER. Cl. 21.
747,535. SX MAGNA. Cl. 21.
747,538. ENCIRCLED LETTER N WITH DIAGONAL LIGHTNING FLASH. Cl. 21.
747,544. NIOCAP. Cl. 21.
747,547. BRIGHT-MITE. Cl. 21.
747,548. TRANSILARM. Cl. 21.
747,550. SHOULDER-TALK. Cl. 21.
747,553. MAGNAFLEX AND DESIGN. Cl. 22.
747,557. HAPPI-BONE. Cl. 22.
747,559. NORSEMAN AND REPRESENTATION OF THE HEAD OF A NORSEMAN. Cl. 22.
747,566. FUTURISTIC TELESCOPIC KNIFE-FORK AND DESIGN. Cl. 23.
747,572. TENSOMAT. Cl. 23.
747,574. GOODRICH TROJAN AND DESIGN. Cl. 23.
747,576. MIRACLE. Cl. 24.
747,577. POLICOPIA. Cl. 26.
747,578. XACTGLAND. Cl. 26.
747,581. KILAR. Cl. 26.
747,590. JL AND DESIGN. Cl. 26.
747,591. SETAR. Cl. 26.
747,595. BARONESS. Cl. 26.
747,600. MAGNION INC. AND DESIGN. Cl. 26.
747,612. F (FANCIFUL). Cl. 28.
747,614. MAV AND DESIGN. Cl. 28.
747,621. APT. Cl. 29.
747,623. AQUAFRESH. Cl. 31.
747,626. CHARMIRROR AND DESIGN. Cl. 32.
747,627. MAITRE 'D.' Cl. 32.
747,631. 180 AND DESIGN. Cl. 34.
747,635. FLEX-ACTION. Cl. 35.
747,643. GUIL-CLOTH. Cl. 37.
747,644. FAMOUS PHOTOGRAPHERS AND DESIGN. Cl. 38.
747,649. VISUAL. Cl. 38.
747,650. SALES SCOPE. Cl. 38.
747,652. CIRCLE GRIP. Cl. 39.
747,656. RED RIVER SWEATER AND DESIGN. Cl. 39.
747,660. SAF-T-SANS AND DESIGN. Cl. 39.
747,675. "NIMBLE THIMBLE." Cl. 40.
747,676. 'COL-R-BOB.' Cl. 40.
747,680. VERTIFLEX. Cl. 42.
747,689. PETREET. Cl. 46.
747,694. PENNY'S REDI POUR. Cl. 46.
747,705. VERZYME. Cl. 46.
747,711. WEATHERKING. Cl. 50.
747,718. CANDY TWIST. Cl. 51.
747,722. REDEEMA. Cl. 51.
747,723. SEQUIN. Cl. 51.
747,726. ASSIST. Cl. 52.
747,727. THAW/MASTER TM AND SUNBURST DESIGN. Cl. 100.
747,728. THE VOYAGER INN AND DESIGN. Cl. 100.
747,729. REPRESENTATION OF A PADLOCK. Cl. 102.
747,733. AMERICAN. Cl. 5.
747,734. BAN-ODOR. Cl. 6.
747,737. SOFSHEEN. Cl. 20.
747,738. ANOKA. Cl. 23.
747,739. MANSON. Cl. 27.
747,742. FOOD INDUSTRY. Cl. 38.

747,743. AEROSPACE WEEK INTERNATIONAL. Cl. 38.
747,744. FASHIONED BY SWISS KNIT. Cl. 39.
747,745. YUR-MOLD AND DESIGN. Cl. 39.
747,746. SLENDORS. Cl. 39.
747,752. QUIMBY'S. Cl. 46.
747,757. ROI DES BRANDIES. Cl. 49.
747,763. COMMODITIES OBJECTIVELY EVALUATED ETC. AND DESIGN. Cl. 101.
747,764. AMERICAN TRANSPORTATION INSTITUTE. Cl. 107.

TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

314,023. GS. Cl. 28. 6–19–34. General Findings & Supply Co. General Findings, Inc., Attleboro, Mass. Amended to appear:



442,123. NATIONAL. Cl. 44. 2–22–49. National Carbon Company, Inc. Union Carbide Corporation, New York, N.Y. Amended: In the statement, column 1, lines 6 and 7, the description of goods is deleted and *therapeutic arc carbons* is inserted.

442,632. MA BROWN AND DESIGN. Cl. 46. 5–3–49. Squire Dingee Company. Beatrice Foods Co., Chicago, Ill. Amended: In the statement, column 2, lines 7 through 10 are deleted and in lines 16 and 17, "and the name 'Squire Dingee Co.'" is deleted and the drawing is amended to appear:



504,101. DENTON. Cl. 39. 11–23–48. Denton Sleeping Garment Mills, Inc., Centerville, Mich. Amended to appear:

DENTON

858,556. DM AND DESIGN. Cl. 23. 10–15–68. The Dyson-Kissner Corporation, Milltown, N.J. Corrected: In the statement, column 2, line 2, "pins" should be deleted and *pirns* should be inserted.

863,938. TAROTEXT. Cl. 37. 1–21–69. Brown Company, Holyoke, Mass. Corrected: In the statement, column 2, line 3, "1957" should be deleted and *1967* should be inserted.

865,079. RED HACKLE. Cl. 49. 2–18–69. Hepburn & Ross Limited, Glasgow, Scotland. Corrected: In the statement, column 1, line 4, "England" should be deleted and *Scotland* should be inserted.

865,985. BP BUNNELL AND DESIGN. Cls. 1 and 23. 3–11–69. Bunnell Plastics, Inc., Camden, N.J. Corrected: In the statement, column 2, after line 3, *First use as to "Bunnell," Feb. 15, 1964.* should be inserted and lines 8 and 9 should be deleted and *First use Dec. 21, 1967; in commerce Dec. 21, 1967; first use as to "Bunnell," Feb. 15, 1964.* should be inserted.

866,016. PL AND DESIGN. Cl. 3. 3–11–69. Platt Luggage, Inc., Chicago, Ill. Corrected: In the statement, column 1, line 1, "Pyatt" should be deleted and *Platt* should be inserted.

866,485. HORN & HARDART. Cl. 46. 3–11–69. The Horn & Hardart Company, New York, N.Y. Corrected: In the statement, column 2, line 4, "39" should be deleted and *29* should be inserted.

867,491. FLT AND DESIGN. Cl. 23. 4–1–69. Centrala Importowo-Eksportowa "Impexmetal," Warsaw, Poland. Corrected: In the statement, column 1, line 1, "Central a" should be deleted and *Centrala* should be inserted.

867,525. AVID ETC. AND DESIGN. Cl. 26. 4–1–69. Audio Visual Instruction Devices, Inc., Marshall, Mich. Corrected: In the statement, column 2, line 5, "and deck" should be deleted and *deck and* should be inserted.

TRADEMARK REGISTRATIONS—NEW CERTIFICATES

New Certificates issued under sections 7(c), 7(f), 7(g) of the Trademark Act of 1946 for the unexpired term of the original registrations.

545,461. HONOR BRIGHT AND DESIGN. Cl. 16. Hall & Co., Inc. 7–24–51. New Cert. Sec. 7(c) to S. C. Johnson & Son, Inc., Racine, Wis.

661,506. SPACE. Cl. 6. Shulton, Inc. 5–13–58. New Cert. Sec. 7(c) to S. C. Johnson & Son, Inc., Racine, Wis.

747,424. INSUL-GUARD. Cl. 1. Chemical Products, Inc. 4–2–63. New Cert. Sec. 7(c) to Insul-Guard Corporation, Salt Lake City, Utah.

753,451. AZTEC. Cl. 51. The B.V.D. Company, Inc. 7–23–63. New Cert. Sec. 7(c) to The Dow Chemical Company, Midland, Mich.

769,239. SHAVERS. Cl. 46. John W. Robins, d.b.a. Fabian Brokerage Company. 5–5–64. New Cert. Sec. 7(c) to Robins Brokerage Company, Salt Lake City, Utah.

789,010. AMERICAN AIR-MASTER AND DESIGN. Cl. 23. American Air-Master. 5–4–65. New Cert. Sec. 7(c) to McCulloch Corporation, Los Angeles, Calif.

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Gleason Works, The, Rochester, N.Y. 512,164, ren. 5–20–69. Cl. 23.
Goldsmith, Louis, Inc., Philadelphia, Pa. 507,177–8, ren. 5–20–69. Cl. 39.
Goodrich, B. F., Co., The, Akron, Ohio. 747,652, canc. Cl. 39.
Goodrich, Elvin R., d.b.a. Goodrich Maintenance Supply Co., Oklahoma City, Okla. 747,574, canc. Cl. 23.
Goodrich Maintenance Supply Co.: *See*—
Goodrich, Elvin R.
Goodstein Bros. & Co. Inc., New York, N.Y. 507,138, ren. 5–20–69. Cl. 39.
Gordon, Claud S., Co., Cleveland, Ohio. 747,578, canc. Cl. 26.
Griesedieck Western Brewery Co., Belleville, Ill., to Carling Brewing Co. Inc., d.b.a. Carling Brewing Co., Cleveland, Ohio. 512,884, ren. 5–20–69. Cl. 48.
Guaranty Savings & Loan Association, San Jose, Calif. 747,–729, canc. Cl. 102.
Guild, J. H., Co., Inc., The, Rupert, Vt. 505,486, ren. 5–20–69. Cl. 6.
HDB Publishing Co., Inc., New York, N.Y. 869,728, pub. 3–4–69. Cl. 38.
Hales & Hunter Co.: *See*—
Edwards & Loomis Co.
Hall & Co., Inc., to S. C. Johnson & Son, Inc., Racine, Wis. 545,461, new cert. Cl. 16.
Hamilton Cosco, Inc., Columbus, Ind. 869,830, pub. 3–4–69. Cl. 103.
Handler-Tamarkin Publishing: *See*—
Generation, Inc.
Hard Sails, Inc., Islip, N.Y. 869,645, pub. 3–4–69. Cl. 19.
Harrah's Club, Reno, Nev. 869,840, pub. 3–4–69. Cl. 107.
Harvest Publishing Co., The, Cleveland, Ohio. 869,723, pub. 3–4–69. Cl. 38.
Heller Tool Division: *See*—
Wallace-Murray Corp.
Heller, William, Inc., New York, N.Y. 869,752, pub. 3–4–69. Cl. 42.
Henryson, L. P., & Co., Inc., New York, N.Y. 869,751, pub. 3–4–69. Cl. 41.
Hepburn & Ross Ltd., Glasgow, Scotland. 865,079, cor. Cl. 49.
Hercules Powder Co., Wilmington, Del. 747,423, canc. Cl. 1.
Hickey-Freeman Co., to Hickey-Freeman Co., Inc., Rochester, N.Y. 507,226–7, ren. 5–20–69. Cl. 39.
Hickey-Freeman Co., to Hickey-Freeman Co., Inc., Rochester, N.Y. 507,229–31, ren. 5–20–69. Cl. 39.
Hickey-Freeman Co., Inc.: *See*—
Hickey-Freeman Co.
Hills Brothers Co., The to National Biscuit Co., New York, N.Y. 253,631, ren. 5–20–69. Cl. 46.
Hines, Edward, Lumber Co., Chicago, Ill. 869,600, pub. 3–4–69. Cl. 12.
Hirtz & Co., Kommanditgesellschaft, Alteburgerstrasse, Cologne (Rhine), Germany. 869,769, pub. 3–4–69. Cl. 44.
Holt, Rinehart & Winston, Inc.: *See*—
Field & Stream Publishing Co.
Hoover Mfg. & Sales Co., Inc., Woodside, N.Y. 869,736, pub. 3–4–69. Cl. 39.
Horn & Hardart Co., The, New York, N.Y. 866,485, cor. Cl. 46.
House of Games Imported, Inc.: *See*—
Games Imported, Inc.
House Of Westmore, Inc., New York, N.Y. 747,718, canc. Cl. 51.
Humble Oil & Refining Co.: *See*—
Pate Oil Co.
Hume, G. W., Co., San Francisco, Calif. 509,329, ren. 5–20–69. Cl. 46.
Hume, Virgil L., d.b.a. Roy Kelly, Fort Worth, Tex. 869,718, pub. 3–4–69. Cl. 36.
Hunt, Philip A., Chemical Corp., Palisades Park, N.J. 869,–581–3, pub. 3–4–69. Cl. 6.
Huntington Laboratories, Inc., Huntington, Ind. 869,579, pub. 3–4–69. Cl. 6.
Husky Oil Co. of Delaware, Denver, Colo. 869,618, pub. 3–4–69. Cl. 15.
Hydraulic Brake Co., Los Angeles, Calif., to Wagner Electric Corp., Newark, N.J. 258,572, ren. 5–20–69. Cl. 6.
Imperial Golf Co., Chicago, Ill. 869,675, pub. 3–4–69. Cl. 22.
Import Packing Co.: *See*—
Leverton & Co.
Imported Brands, Inc., Brooklyn, N.Y. 747,757, canc. Cl. 49.
Indera Mills Co., Winston-Salem, N.C. 508,069, ren. 5–20–69. Cl. 39.
Inland Rubber Corp., Chicago, Ill., to Inland Rubber Corp., Mansfield, Ohio. 508,103, ren. 5–20–69. Cl. 35.
Innova, Inc.: *See*—
Medicredit, Inc.
Insto-Gas Corp., Detroit, Mich. 509,037, ren. 5–20–69. Cl. 34.
Insul-Guard Corp.: *See*—
Chemical Products, Inc.
International Cold Storage, Inc., Wichita, Kans. 869,708, pub. 3–4–69. Cl. 31.
International Minerals & Chemical Corp., Skokie, Ill. 869,586, pub. 3–4–69. Cl. 10.
International Minerals & Chemical Corp., Skokie, Ill. 869,624, pub. 3–4–69. Cl. 16.
International Nickel Co., Inc., The, New York, N.Y. 504,443, ren. 5–20–69. Cl. 14.
International Pipe & Ceramics Corp.: *See*—
Interpace Corp.
International Silver Co., The, Meriden, Conn. 869,699, pub. 3–4–69. Cl. 23.
Interpace Corp.: *See*—
Castleton China Inc.
Interpace Corp., from International Pipe & Ceramics Corp., Los Angeles, Calif. 869,596–7, pub. 3–4–69. Cl. 12.
Jack Frost Laboratories: *See*—
Verlam Distributors, Inc.
Jackson, Philip M., Toronto, Ontario, Canada. 747,509, canc. Cl. 18.
Jaeger Machine Co., The, Columbus, Ohio. 747,590, canc. Cl. 26.
Jerrico, Inc., d.b.a. Jerry's Restaurants, Lexington, Ky. 869,–849. Cl. 46.
Jerry's Restaurants: *See*—
Jerrico, Inc.
Joens, W. H., & Co. G.m.b.H., Dusseldorf, Germany. 869,703, pub. 3–4–69. Cl. 26.
Johns-Manville Corp., New York, N.Y. 869,609, pub. 3–4–69. Cl. 13.
Johnson, Arthur H., d.b.a. Strike-Mor Co., Milwaukee, Wis. 869,754, pub. 3–4–69. Cl. 42.
Johnson, H. & R., Ltd., Tunstall, Staffordshire, England. 257,008, ren. 5–20–69. Cl. 12.
Johnson, S. C., & Son, Inc.: *See*—
Hall & Co., Inc.
Shulton, Inc.
Jole Enterprises, Inc., Dallas, Tex. 869,669, pub. 3–4–69. Cl. 22.
KMK Airlines, Inc., Washington, D.C. 869,833, pub. 3–4–69. Cl. 105.
Kabushiki Kaisha Hattori Tokeiten, Tokyo, Japan. 869,704, pub. 3–4–69. Cl. 27.
Kaiser Aluminum & Chemical Corp., Oakland, Calif. 747,631, canc. Cl. 34.
Kaiser Aluminum & Chemical Corp., Oakland, Calif. 869,693, pub. 3–4–69. Cl. 23.
Kawneer Co., Niles, Mich. 747,450, canc. Cl. 12.
Kayser-Roth Corp.: *See*—
Luxite Silk Products Co.
Kelley Technical Coatings, Inc., Louisville, Ky. 869,622, pub. 3–4–69. Cl. 16.
Kelly, Roy: *See*—
Hume, Virgil L.
Kemtech Inc., Dorchester, Mass. 869,749, pub. 3–4–69. Cl. 40.
Kennedy, Raymond A., Sioux City, Iowa. 506,650, ren. 5–20–69. Cl. 26.
Kidde, Walter, & Co., Inc.: *See*—
Scharff, J. H., Inc.
Kiplinger Editors, Inc., The, to The Kiplinger Washington Editors, Inc., Washington, D.C. 506,033, ren. 5–20–69. Cl. 38.
Kiplinger Washington Agency Inc., The, to The Kiplinger Washington Editors, Inc., Washington, D.C. 506,031–2, ren. 5–20–69. Cl. 38.
Kiplinger Washington Agency Inc., The, to The Kiplinger Washington Editors, Inc., Washington, D.C. 506,144, ren. 5–20–69. Cl. 38.
Kiplinger Washington Editors, Inc., The: *See*—
Kiplinger Washington Agency, Inc., The.
Kiplinger Editors, Inc., The.

Kitchens of Sara Lee, Inc., Deerfield, Ill. 869,779, pub. 3–4–69. Cl. 46.
Kleer-Vu Industries, Inc., New York, N.Y. 869,846. Cl. 37.
Klenz-A-Rama Chemical Co., Inc., Philadelphia, Pa. 747,726, canc. Cl. 52.
Kohner Bros., Inc., East Paterson, N.J. 869,677, pub. 3–4–69. Cl. 22.
Koppers Co., Inc., Pittsburgh, Pa. 508,131, ren. 5–20–69. Cl. 12.
L & H Designs, Inc., Paramus, N.J. 869,568, pub. 3–4–69. Cl. 2.
Lane Magazine & Book Co.: *See*— Lane Publishing Co.
Lane Publishing Co., San Francisco, to Lane Magazine & Book Co., Menlo Park, Calif. 511,453, ren. 5–20–69. Cl. 38.
Lawrence Sports Ltd., Wellingborough, England. 869,667, pub. 3–4–69. Cl. 22.
Lawyers Cooperative Publishing Co., The, Rochester, N.Y. 245,807, ren. 5–20–69. Cl. 38.
Lee, Arthur T., Los Angeles, Calif. 869,834, pub. 3–4–69. Cl. 107.
Leverton & Co., d.b.a. Import Packing Co., to Spencer Food Co., Houston, Tex. 259,438, ren. 5–20–69. Cl. 46.
Lewis, Rosemarie, d.b.a. Vogarell Products Co., to Vogarell Products, Inc., Los Angeles, Calif. 509,082, ren. 5–20–69. Cl. 18.
Lippman, Samuel V., d.b.a. Airtone Instrument Co., Hartford, Conn. 507,319, ren. 5–20–69. Cl. 36.
Liquitein Feed Co.: *See*— McCasland, Andrew D.
Lively Knits, Inc., Fayetteville, N.C. 869,756, pub. 3–4–69. Cl. 42.
London Character Shoes: *See*— Commonwealth Shoe & Leather Co., Inc.
Looping, S.A., Corcelles, Neuchatel, Switzerland. 509,113, ren. 5–20–69. Cl. 27.
Lorillard Corp.: *See*— Lorillard, P., Co.
Lorillard Corp., New York, N.Y. 869,627–8, pub. 3–4–69. Cl. 17.
Lorillard, P., Co., to Lorillard Corp., New York, N.Y. 441,986, ren. 5–20–69. Cl. 17.
Lorillard, P., Co., to Lorillard Corp., New York, N.Y. 503,930, ren. 5–20–69. Cl. 17.
Lorillard, P., Co., to Lorillard Corp., New York, N.Y. 503,933, ren. 5–20–69. Cl. 17.
Lorillard, P., Co., to Lorillard Corp., New York, N.Y. 505,017, ren. 5–20–69. Cl. 17.
Lorillard, P., Co., to Lorillard Corp., New York, N.Y. 506,836, ren. 5–20–69. Cl. 17.
Lorillard, P., Co., to Lorillard Corp., New York, N.Y. 506,934, ren. 5–20–69. Cl. 17.
Lorillard, P., Co., to Lorillard Corp., New York, N.Y. 506,936, ren. 5–20–69. Cl. 17.
Lowenfels, Frederick F., & Son, New York, N.Y. 869,786, pub. 3–4–69. Cl. 46.
Luxite Silk Products Co., Milwaukee, Wis., to Kayser-Roth Corp., New York, N.Y. 258,395, ren. 5–20–69. Cl. 39.
Macdermid Inc., Waterbury, Conn. 508,586, ren. 5–20–69. Cl. 52.
Macdermid Inc., Waterbury, Conn. 510,390, ren. 5–20–69. Cl. 52.
Macwhyte Co., Kenosha, Wis. 511,202, ren. 5–20–69. Cl. 7.
Magnet Mills, Inc.: *See*— Se-Ling Hosiery, Inc.
Magnion, Inc., Cambridge, Mass. 747,600, canc. Cl. 26.
Malia Imports, Ltd., Honolulu, Hawaii. 869,745, pub. 3–4–69. Cl. 39.
Manchester Hosiery Mills, Manchester, N.H. 505,182, ren. 5–20–69. Cl. 39.
Mandleberg, J., & Co. (Holdings) Ltd.: *See*— Mandleberg, J., & Co. Ltd.
Mandleberg, J., & Co. Ltd., to J. Mandleberg & Co. (Holdings) Ltd., Manchester, England. 254,083, ren. 5–20–69. Cl. 39.
Manhattan Terrazzo Brass Strip Co., Inc., Norwalk, Conn. 869,599, pub. 3–4–69. Cl. 12.
Mannington Mills Inc., Salem, N.J. 869,652, pub. 3–4–69. Cl. 20.
Maradel Products Inc., New York, N.Y. 747,722, canc. Cl. 51.
Marathon Oil Co., Findlay, Ohio. 869,614, pub. 3–4–69. Cl. 15.
Marco Electronic Products, Inc., San Francisco, Calif. 747,550, canc. Cl. 21.
Mark-T Products: *See*— Southwestern Drug Corp.
Mars Signal Light Co., Chicago, Ill. 507,661, ren. 5–20–69. Cl. 21.
Marum, Hayward, Inc., Ipswich, Mass. 869,734, pub. 3–4–69. Cl. 39.
Mastercraft Pipes, Inc., New York, N.Y. 747,442, canc. Cl. 8.
Matsushita Electric Industrial Co., Ltd., Osaka Prefecture, Japan. 869,714, pub. 3–4–69. Cl. 36.
Mattel, Inc., Hawthorne, Calif. 869,682–3, pub. 3–4–69. Cl. 22.
May & Baker Ltd., Dagenham, Essex, England. 747,348, canc. Cl. 42.
McCasland, Andrew D., d.b.a. Liquitein Feed Co., Dodge City, Kans. 869,632, pub. 3–4–69. Cl. 18.
McClellan Industries, Inc., Traverse City, Mich. 869,671, pub. 3–4–69. Cl. 22.
McCormick & Co., Inc.: *See*— Baker Extract Co.
McCormick & Co., Inc., Baltimore, to McCormick & Co., Inc., Cockeysville, Md. 510,053, ren. 5–20–69. Cl. 46.
McCulloch Corp.: *See*— American Air-Master.
McDonough-Starlite, Inc.: *See*— Starlite Mfg. Co.
McGraw-Edison Co.: *See*— Anderson-Pitt Corp., The.
McGraw-Hill Publishing Co., Inc., New York, N.Y. 747,743, canc. Cl. 38.
McKesson Laboratories: *See*— Foremost-McKesson, Inc.
Medevco of Los Alamitos, Inc., Los Alamitos, Calif. 869,698, pub. 3–4–69. Cl. 23.
Medicated Products Co., d.b.a. Princess Pride Creations, Chicago, Ill. 869,705, pub. 3–4–69. Cl. 28.
Medicredit, Inc., Narberth, from Innova, Inc., Philadelphia, Pa. 869,827, pub. 3–4–69. Cl. 102.
Medina Agricultural Products Co., Inc., Hondo, Tex. 869,585, pub. 3–4–69. Cl. 10.
Melrose Hosiery Mills, Inc.: *See*— Amos, Charles L.
Menasha Products Co., The, Chicago, Ill., to American Can Co., New York, N.Y. 258,776, ren. 5–20–69. Cl. 37.
Merck & Co., Inc., Rahway, N.J. 869,640–1, pub. 3–4–69. Cl. 18.
Merck & Co., Inc., Rahway, N.J. 869,765, pub. 3–4–69. Cl. 44.
Metacomet Inc., Teterboro, N.J. 869,580, pub. 3–11–69. Cl. 6.
Metex Corp., Edison, N.J. 869,660–1, pub. 3–4–69. Cl. 21.
Micromatic Home Corp., to Micromatic Home Corp., Detroit, Mich. 509,256, ren. 5–20–69. Cl. 23.
Midland-Ross Corp., Cleveland, Ohio. 869,710, pub. 3–4–69. Cl. 34.
Milprint, Inc., Milwaukee, Wis. 506,807, ren. 5–20–69. Cl. 37.
Minneapolis-Moline Co.: *See*— Minneapolis-Moline Power Implement Co.
Minneapolis-Moline, Inc.: *See*— Minneapolis-Moline Power Implement Co.
Minneapolis-Moline Power Implement Co., Minneapolis, now by merger Minneapolis-Moline Co., to Minneapolis-Moline, Inc., Hopkins, Minn. 507,797, ren. 5–20–69. Cl. 23.
Minnesota & Ontario Paper Co., Minneapolis, Minn. 747,447, canc. Cl. 12.
Mirsa Italian Knitwear Ltd., New York, N.Y. 869,738, pub. 3–4–69. Cl. 39.
Mitann Inc., North Hollywood, Calif. 869,615, pub. 3–4–69. Cl. 15.
Mobile Holdings Corp., Cypress, Calif. 747,519, canc. Cl. 19.
Modern Shoe Co., St. Louis, Mo. 869,730, pub. 3–4–69. Cl. 39.
Monarch Wine Co., Inc., Brooklyn, N.Y. 869,797, pub. 3–4–69. Cl. 47.
Morse, Hollis H., Atlanta, Ga., to The Smile Co., St. Louis, Mo. 69,468, ren. 5–20–69. Cl. 45.
Morton International Inc.: *See*— Royal Crystal Salt Co. Worcester Salt Co.
Mother's Cake & Cookie Co., Oakland, Calif. 869,777, pub. 3–4–69. Cl. 46.
Musselman, C. H., Co., The, Biglerville, Pa., to Pet Inc., St. Louis, Mo. 507,122, ren. 5–20–69. Cl. 46.
National Biscuit Co.: *See*— Hills Brothers Co., The.
National Carbon Co., Inc., to Union Carbide Corp., New York, N.Y. 442,123. Am. 7(d). Cl. 44.
National Lead Co., New York, N.Y. 508,575, ren. 5–20–69. Cl. 6.
National Personnel Consultants, Detroit, Mich. 869,844, pub. 3–4–69. Cl. 200.
National Research Bureau, Inc., The, Chicago, Ill. 747,650, canc. Cl. 38.
National Tea Co., Chicago, Ill. 869,783, pub. 3–4–69. Cl. 46.
National Wax Co., Skokie, Ill. 505,046, ren. 5–20–69. Cl. 1.
Nelson Electric Mfg. Co., Tulsa, Okla. 747,538, canc. Cl. 21.
Newport Mfg. Co., Carrollville, Wis., to E. I. du Pont de Nemours & Co., Wilmington, Del. 258,538, ren. 5–20–69. Cl. 6.
Nirenberg, M., Sons, Inc., New York, N.Y. 869,733, pub. 3–4–69. Cl. 39.
Nord Chemical Co.: *See*— Cullilton, Donald V.
Norristown Herald Printing & Publishing Co., Norristown, Pa. 175,792, canc. Cl. 38.
North American Lace Co., Inc., to Quaker Lace Co., Philadelphia, Pa. 508,330, ren. 5–20–69. Cl. 42.
North & Judd Mfg. Co., New Britain, Conn. 869,611, pub. 3–4–69. Cl. 13.
Northwestern Mutual Insurance Co., Seattle, Wash. 869,826, pub. 3–4–69. Cl. 102.
Norwich Pharmacal Co., The, Norwich, N.Y. 257,956, ren. 5–20–69. Cl. 18.
Optimus Pharmaceuticals Co., Inc., Taylors, S.C. 509,762, ren. 5–20–69. Cl. 18.
Ottawa Steel Products: *See*— Daybrook-Ottawa Corp.
Page, Charles C., Bozeman, Mont. 869,836, pub. 3–4–69. Cl. 107.
Pappas, C., Co. Inc., Boston, Mass. 869,789, pub. 3–4–69. Cl. 46.
Parke, Davis & Co., Detroit, Mich. 205,487, canc. Cl. 18.
Pate Oil Co., Milwaukee, Wis., to Humble Oil & Refining Co., Houston, Tex. 510,579, ren. 5–20–69. Cl. 15.
Peck & Peck, New York, N.Y. 507,284, ren. 5–20–69. Cl. 39.
Pees, O. Walter, New York, N.Y. 288,666, canc. Cl. 45.
Penney, J. C., Co., New York, N.Y. 869,755, pub. 3–4–69. Cl. 42.
Pennsalt Chemicals Corp.: *See*— Sharples Solvents Corp., The.
Pennsalt Chemicals Corp., Philadelphia, Pa. 869,772, pub. 3–4–69. Cl. 44.

Penny's Redi Pour, Inc., Oakland, Calif. 747,694, canc. Cl. 46.
Penton Publishing Co., The, Cleveland, Ohio. 508,186, ren. 5–20–69. Cl. 38.
Pepper Sound Studios, Inc., d.b.a. Airplay International, Memphis, Tenn. 869,835, pub. 3–4–69. Cl. 107.
Perstorp Aktiebolag, Perstorp, Sweden. 869,570, pub. 3–4–69. Cl. 5.
Pet Inc.: *See*— Musselman, C. H., Co., The.
Peterson & Associates, Inc., Abington, Pa. 869,564, pub. 3–4–69. Cl. 2.
Philips Maine Corp., Biddeford, Maine. 869,676, pub. 3–4–69. Cl. 22.
Philips Roxane, Inc.: *See*— Philips Roxane Laboratories, Inc.
Philips Roxane Laboratories, Inc., from Philips Roxane, Inc., New York, N.Y. 869,631, pub. 3–4–69. Cl. 18.
Phoenix Products Co., Milwaukee, Wis. 512,489, ren. 5–20–69. Cl. 37.
Photoptic Import Corp., New York, N.Y. 747,581, canc. Cl. 26.
Pic'n Pay Stores, Inc., Matthews, N.C. 869,739, pub. 3–4–69. Cl. 39.
Picture Craft Corp., Bronxville, N.Y. 869,817, pub. 3–4–69. Multiple Class (Classes 100 and 106).
Pioneer Parachute Co., Inc., Manchester, Conn. 869,650, pub. 3–4–69. Cl. 19.
Pioneer Plastics Corp., Auburn, Maine. 869,592, pub. 3–4–69. Cl. 12.
Plastic Corp. of Chicago, Romeoville, Lockport, Ill. 869,828, pub. 3–4–69. Cl. 103.
Plastics Research & Development Corp., Fort Smith, Ark. 869,674, pub. 3–4–69. Cl. 22.
Platt Luggage, Inc., Chicago, Ill. 866,016, cor. Cl. 3.
Postmark Corp., Minneapolis, Minn. 869,610, pub. 3–4–69. Cl. 13.
Potter-McCune Co.: *See*— Colonial Ice Cream Co.
Prak-T-Kal Corp., Elizabeth, N.J. 869,763, pub. 3–4–69. Cl. 44.
Precision Metal Products, Inc., Miami, Fla. 747,627, canc. Cl. 32.
Price-Pfister Brass Mfg. Co., Pacoima, Calif. 869,612, pub. 3–4–69. Cl. 13.
Prince Macaroni Mfg. Co., Lowell, Mass. 869,787, pub. 3–4–69. Cl. 46.
Princess Pride Creations: *See*— Medicated Products Co.
Prismo Safety Corp., Huntingdon, Pa. 747,432, canc. Cl. 4.
Products Research & Chemical Corp., Burbank, Calif. 869,588, pub. 3–4–69. Cl. 12.
Pryor, R. Spencer, d.b.a. Chokee Fertilizer Co., De Soto, Ga. 747,444, canc. Cl. 10.
Purex Corp., Ltd.: *See*— Cudahy Packing Co., The.
Purex Corp., Ltd., Lakewood, Calif. 508,302, ren. 5–20–69. Cl. 52.
Quaker Lace Co.: *See*— North American Lace Co., Inc.
Quimby's Holsum Bakery, Inc., Uhrichsville, Ohio. 747,752, canc. Cl. 46.
R-L Laboratories, Inc., New York, N.Y. 747,723, canc. Cl. 51.
Radio Corp. of America, New York, N.Y. 869,841–2, pub. 3–4–69. Cl. 107.
Raladam Co., Grosse Pointe Woods, Mich. 869,642, pub. 3–4–69. Cl. 18.
Raxon Fabrics Co., to Raxon Fabrics Corp., to Raxon Fabrics Corp., New York, N.Y. 442,616, ren. 5–20–69. Cl. 42.
Raxon Fabrics Corp.: *See*— Raxon Fabrics Co.
Raytek, Inc., Mountain View, Calif. 869,702, pub. 3–4–69. Cl. 26.
Reardon, W. G., Laboratories, Inc., Pleasant Valley, N.Y. 513,018, ren. 5–20–69. Cl. 6.
Reconstruction Finance Corp.: *See*— Se-Ling Hosiery, Inc.
Red River Woolens Ltd., Winnipeg, Manitoba, Canada. 747,656, canc. Cl. 39.
Regal Rugs, Inc., North Vernon, Ind. 869,757, pub. 3–4–69. Cl. 42.
Reliance International Mfg. Ltd., Hempstead, N.Y. 747,557, canc. Cl. 22.
Rembraandt Tobacco Corp., (Overseas) Ltd., Zurich, Switzerland. 869,626, pub. 3–4–69. Cl. 17.
Remco Industries, Inc., Harrison, N.J. 869,672, pub. 3–4–69. Cl. 22.
Renlim Co., Inc., The, Babson Park, Fla. 747,621, canc. Cl. 29.
Reynolds Mfg. Co., The, Holyoke, Mass. 509,593, ren. 5–20–69. Cl. 37.
Reynolds Metals Co., Richmond, Va. 869,678, pub. 3–4–69. Cl. 22.
Rhoads, J. E., & Sons, Inc., Wilmington, Del. 869,712–13, pub. 3–4–69. Cl. 35.
Richmond Pressed Metal Works, Inc., Richmond, Va. 747,441, canc. Cl. 8.
Rieser Co., Inc., The, New York, N.Y. 747,676, canc. Cl. 40.
Right-Gard Corp., Philadelphia, Pa. 869,771, pub. 3–4–69. Cl. 44.
Rilling Co., Minneapolis, Minn., assor. to Rilling Co., to The Rilling Dermetics Co., Bridgeport, Conn. 511,740, ren. 5–20–69. Cl. 51.
Rilling Dermetics Co., The: *See*— Rilling Co.
Rings By Fashion, Inc., New York, N.Y. 747,612, canc. Cl. 28.
Roach, T. L., Jr.: *See*— T.O. Ranch Co.
Robins Brokerage Co.: *See*— Robins, John W.
Robins, John W., d.b.a. Fabian Brokerage Co., to Robins Brokerage Co., Salt Lake City, Utah. 769,239, new cert. Cl. 46.
Rolin, Kenneth C., Lake Villa, Ill. 869,666, pub. 3–4–69. Cl. 22.
Roman Cleanser Co., Detroit, Mich. 869,577, pub. 3–4–69. Cl. 6.
Rooster, Inc., Philadelphia, Pa. 869,735, pub. 3–4–69. Cl. 39.
Rosedale Foundry & Machine Co., Pittsburgh, Pa. 747,465, canc. Cl. 14.
Rothschild, David, Co., Columbus, Ga. 513,208, ren. 5–20–69. Cl. 42.
Royal Ascot Lamps Co., Inc., Skokie, Ill. 869,662, pub. 3–4–69. Cl. 21.
Royal Crystal Salt Co., Salt Lake City, Utah, to Morton International, Inc., Chicago, Ill. 511,827, ren. 5–20–69. Cl. 46.
Ruby Red's, Inc., New Orleans, La. 869,819, pub. 3–4–69. Cl. 100.
SCM Corp., d.b.a. Durkee Famous Foods, Cleveland, Ohio. 869,778, pub. 3–4–69. Cl. 46.
Sahara Packing Co., Brawley, Calif. 869,794–6, pub. 3–4–69. Cl. 46.
St. Croix Corp., Park Falls, Wis. 747,553, canc. Cl. 22.
Sani-Pac Corp., New York, N.Y. 869,760, pub. 3–4–69. Cl. 44.
Scharff, J. H., Inc., Orange, to Walter Kidde & Co., Inc., Belleville, N.J. 505,968, ren. 5–20–69. Cl. 21.
Schmitthenner, Fred, d.b.a. Dr. Schmitthenner Sound Systems, and Touchmaster Laboratories, Hollywood, Calif. 747,534, canc. Cl. 21.
Schmitthenner, Dr., Sound Systems: *See*— Schmitthenner, Fred.
Schmoyer, Arthur R.: *See*— Electro Learner Corp.
Scholl Mfg. Co., Inc., The, Chicago, Ill. 512,514–16, ren. 5–20–69. Cl. 44.
Schroder, Svend, d.b.a. The Firm Svend Schroder, Rodovre, Denmark. 869,767, pub. 3–4–69. Cl. 44.
Schroder, Svend, The Firm: *See*— Schroder, Svend.
Schumacher, F. F., Co., The, Hartville, Ohio. 509,019, ren. 5–20–69. Cl. 12.
Scovill Mfg. Co., Waterbury, Conn. 747,635, canc. Cl. 35.
Scovill Mfg. Co., Waterbury, Conn. 869,603, pub. 3–4–69. Cl. 13.
Scranton Corp., The: *See*— Scranton Lace Co., The.
Scranton Lace Co., The, to The Scranton Corp., Scranton, Pa. 506,174, ren. 5–20–69. Cl. 42.
Searer, Harold J., d.b.a. Searer Rubber Co., Akron, Ohio. 504,875, ren. 5–20–69. Cl. 44.
Searer Rubber Co.: *See*— Searer, Harold J.
Se-Ling Hosiery, Inc., to Reconstruction Finance Corp., Philadelphia, Pa., to Magnet Mills, Inc., New York, N.Y. 513,609, ren. 5–20–69. Cl. 39.
Seminole Mfg. Co., Columbus, Miss. 747,746, canc. Cl. 39.
Sharpless Solvents Corp., The, to Pennsalt Chemicals Corp., Philadelphia, Pa. 255,152, ren. 5–20–69. Cl. 6.
Shirley, Alton L., d.b.a. General Mfg. Co., Providence, R.I. 747,429, canc. Cl. 2.
Shivell-Hall Co.: *See*— Shivell-Hall Co., Inc., The.
Shivell-Hall Co., Inc., The, d.b.a. Shivell-Hall Co., New York, N.Y. 869,617, pub. 3–4–69. Cl. 15.
Short, J. R., Milling Co., Chicago, Ill. 260,037, ren. 5–20–69. Cl. 46.
Shulton, Inc., to S. C. Johnson & Son, Inc., Racine, Wis. 661,506, new cert. Cl. 6.
Shur Gloss Mfg. Co., to Shur Gloss Mfg. Co., Inc., Chicago, Ill. 506,855, ren. 5–20–69. Cl. 52.
Shur Gloss Mfg. Co., Inc.: *See*— Shur Gloss Mfg. Co.
Siegling-Riemen Vertriebsgesellschaft of Ernst Siegling Spezialtreibriemenfabrik Co. Ltd., Hannover, Germany. 747,572, canc. Cl. 23.
Silverstein, Allan I., d.b.a. Steel Co. of America, Columbus, Ohio. 869,595, pub. 3–4–69. Cl. 12.
Simonds Saw & Steel Division: *See*— Wallace-Murray Corp.
Since 1868 Crescent Corp., d.b.a. Crescent Corp., New York, N.Y. 869,569, pub. 3–4–69. Cl. 3.
Sinclair Oil Corp.: *See*— Sinclair Refining Co.
Sinclair Refining Co., to Sinclair Oil Corp., New York, N.Y. 257,103, ren. 5–20–69. Cl. 15.
Six Wheels, Inc., Los Angeles, Calif., to CCI Marquardt Corp., Tulsa, Okla. 442,644, ren. 5–20–69. Cl. 19.
Slifer Mfg. Co., Inc., Humboldt, Iowa. 869,689, pub. 3–4–69. Cl. 23.
Smile Co., The: *See*— Morse, Hillis H.
Smith Kline & French Laboratories, Philadelphia, Pa. 869,635, pub. 3–4–69. Cl. 18.
Smith, Rawlen T., d.b.a. Special Products Co., Golden, Colo. 869,690, pub. 3–4–69. Cl. 23.
Societa Metallurgica Italiana, Florence, Italy. 869,606, pub. 3–4–69. Cl. 13.
South Chester Corp., Chester, to Southco, Inc., Lester, Pa. 508,408, ren. 5–20–69. Cl. 13.
South Eastern Cordage Co., Cleveland, Ohio. 869,707, pub. 3–4–69. Cl. 29.
Southco, Inc.: *See*— South Chester Corp.

Southwestern Drug Corp., d.b.a. Mark-T Products, Dallas, Tex. 869,657, pub. 3–4–69. Cl. 21.
Souza Bros. Packing Co., to Souza Bros. Packing Co., Santa Maria, Calif. 512,203, ren. 5–20–69. Cl. 46.
Spartans Industries, Inc., New York, N.Y. 869,663, pub. 3–4–69. Cl. 21.
Spartans Industries, Inc., New York, N.Y. 869,743, pub. 3–4–69. Cl. 39.
Special Products Co.: *See*—
Smith, Rawlen T.
Spencer Food Co.: *See*—
Leverton & Co.
Spincraft, Inc., Milwaukee, Wis. 747,528–9, canc. Cl. 21.
Sportsmen's Laboratories: *See*—
Brazil, James D., and Luke J. Davich.
Sprague Electric Co., North Adams, Mass. 747,544, canc. Cl. 21.
Squire Dingee Co., to Beatrice Foods Co., Chicago, Ill. 422,632. Am. 7(d). Cl. 46.
Standard-Coosa-Thatcher Co., Chattanooga, Tenn. 513,249, ren. 5–20–69. Cl. 43.
Stardust Watch Co. Inc., The, New York, N.Y. 747,739, canc. Cl. 27.
Star-Kist Foods, Inc.: *See*—
Usen Products Co.
Starlite Mfg. Co., to McDonough-Starlite, Inc., Harbor City, Calif. 791,011, new cert. Cl. 23.
Stavers, Gloria, New York, N.Y. 869,721, pub. 3–4–69. Cl. 38.
Steel Co. of America: *See*—
Silverstein, Allan I.
Sterling Drug Inc., New York, N.Y. 869,644, pub. 3–4–69. Cl. 18.
Stevens, J. P., & Co., Inc.: *See*—
Fuller, D. B., & Co., Inc.
Strike-Mor Co.: *See*—
Johnson, Arthur H.
Success Motivation Institute, Inc., Waco, Tex. 869,727, pub. 3–4–69. Cl. 38.
Sucrest Corp.: *See*—
Colonial Molasses Co. Inc.
Sunbeam Corp., Chicago, Ill. 869,709, pub. 3–4–69. Cl. 34.
Sunland Sandals: *See*—
Altieri, Arthur R.
Swinyar Enterprises: *See*—
Swinyar, Theodore C.
Swinyar, Theodore C., d.b.a. Swinyar Enterprises, Collegedale, Tenn. 747,510, canc. Cl. 18.
Swiss Knitting Co., Dover, N.J. 747,744, canc. Cl. 39.
Syracuse Pharmacal Co., Inc., Syracuse, N.Y. 747,511, canc. Cl. 18.
T.O. Ranch Co., Raton, N. Mex., to T. L. Roach, Jr., Amarillo, Tex. 505,428, ren. 5–20–69. Cl. 1.
Tabacalera Nacional, S.A., Coral Gables, Fla. 869,625, pub. 3–4–69. Cl. 17.
Tappan Co., The, Mansfield, Ohio. 869,711, pub. 3–4–69. Cl. 34.
Textron, Inc., Providence, R.I. 869,655–6, pub. 3–4–69. Cl. 21.
Thaw/Master Co.: *See*—
Blewett, Loretta D.
Tokheim Corp., Fort Wayne, Ind. 869,565, pub. 3–4–69. Cl. 2.
Toni Co., The: *See*—
Gillette Co., The.
Touchmaster Laboratories: *See*—
Schmitthenner, Fred.
Towle Mfg. Co., Newburyport, Mass. 869,607, pub. 3–4–69. Cl. 13.
Toyo Shoji Co., Ltd., Chuo-ku, Tokyo, Japan. 747,689, canc. Cl. 46.
Transitel International Corp., The, Paramus, N.J. 747,548, canc. Cl. 21.
Tube Transit Corp., Palo Alto, Calif. 869,822, pub. 3–4–69. Cl. 100.
Twin Togs Creations Inc., New York, N.Y. 869,732, pub. 3–4–69. Cl. 39.
UMC Industries, Inc., St. Louis, Mo. 869,685, pub. 3–4–69. Multiple Class (Classes 23 and 31).
Uddo Co., The: *See*—
Uddo, Joseph F.
Uddo, Joseph F., d.b.a. The Uddo Co., New Orleans, La. 869,853. Cl. 52.
Uneeda Doll Co., Inc., Brooklyn, N.Y. 869,679, pub. 3–4–69. Cl. 22.
Uniroyal, Inc., New York, N.Y. 869,572, pub. 3–4–69. Cl. 6.
Uniroyal, Inc., New York, N.Y. 869,578, pub. 3–4–69. Cl. 6.
Unit Structures, Inc., Peshtigo, Wis. 747,448, canc. Cl. 12.
United-Carr Fastener Corp., Cambridge to United-Carr Inc., Boston, Mass. 441,997, ren. 5–20–69. Cl. 21.
United-Carr Inc.: *See*—
United-Carr Fastener Corp.
United Sporting Goods Dealers Association, St. Louis, Mo. 747,062, canc. Cl. 101.
United Fruit Co., Boston, Mass. 508,492, ren. 5–20–69. Cl. 46.
United States Gypsum Co., to United States Gypsum Co., Chicago, Ill. 256,777, ren. 5–20–69. Cl. 10.
U.S. Rubber Co., New York, N.Y. 747,711, canc. Cl. 50.
Upjohn Co., The, Kalamazoo, Mich. 869,593, pub. 3–4–69. Cl. 12.
Upjohn Co., The, Kalamazoo, Mich. 869,630, pub. 3–4–69. Cl. 18.
Uram, Pete, Sales, Wyandotte, Mich. 869,731, pub. 3–4–69. Cl. 39.
Usen Products Co., to Star-Kist Foods, Inc., Terminal Island, Calif. 856,137, new cert. Cl. 46.
V.I.P. International Scientific Corp., New York, N.Y. 869,750, pub. 3–4–69. Cl. 40.
Varco-Pruden, Inc., Pine Bluff, Ark. 869,598, pub. 3–4–69. Cl. 12.
Verlam Distributors, Inc., d.b.a. Jack Frost Laboratories, Fort Lauderdale, Fla. 869,761. Cl. 44.
Victory Dog Food Co.: *See*—
Calo Dog Food Co., Inc.
Virginia Dare Extract Co., Inc., Brooklyn, N.Y. 869,848. Multiple Class (Classes 45 and 46).
Vistron Corp., Cleveland, Ohio. 869,559, pub. 3–4–69. Cl. 1.
Vistron Corp., Cleveland, Ohio. 869 591, pub. 3–4–69. Cl. 12.
Vitamins, Inc., Chicago, Ill. 506,070, ren. 5–20–69. Cl. 18.
Vogarell Products Co.: *See*—
Lewis, Rosemarie.
Vogarell Products, Inc.: *See*—
Lewis, Rosemarie.
Vogt, Maria V., New York, N.Y. 747,614, canc. Cl. 28.
Wagner Electric Corp.: *See*—
Hydraulic Brake Co.
Wallace-Murray Corp., d.b.a. Heller Tool Division, and Simonds Saw & Steel Division, Fitchburg, Mass. 869,700, pub. 3–4–69. Cl. 23.
Wechsler Coffee Corp., from Ph. Wechsler & Son, Inc., Bronx, N.Y. 869 780–2, pub. 3–4–69. Cl. 46.
Wechsler, Ph., & Son, Inc.: *See*—
Wechsler Coffee Corp.
Welch Brothers Nursery, Inc., Wilmer, Ala. 869,563, pub. 3–4–69. Cl. 1.
Well Made Pants Co., Inc., Baltimore, Md. 869,729, pub. 3–4–69. Cl. 39.
Wellington Importers, Ltd., d.b.a. Wetherby Locke & Co. Ltd., Hauppauge, N.Y. 869,798, pub. 3–4–69. Cl. 49.
Welsh Co., St. Louis, Mo. 511,845, ren. 5–20–69. Cl. 19.
West Chemical Products, Inc.: *See*—
West Disinfecting Co.
West Chemical Products, Inc., Long Island City, N.Y. 869,576, pub. 3–4–69. Cl. 6.
West Disinfecting Co. to West Chemical Products, Inc., Long Island City, N.Y. 257,156, ren. 5–20–69. Cl. 6.
West Disinfecting Co., to West Chemical Products, Inc., Long Island City, N.Y. 508,338, ren. 5–20–69. Cl. 52.
West Disinfecting Co., to West Chemical Products, Inc., Long Island City, N.Y. 512,279, ren. 5–20–69. Cl. 39.
Westminster Industries Inc., New York, N.Y. 869,680, pub. 3–4–69. Cl. 22.
Wetherby Locke & Co. Ltd.: *See*—
Wellington Importers, Ltd.
Wickwire Spencer Steel Co., New York, N.Y., to CF & I Steel Corp., Denver, Colo. 255,990, ren. 5–20–69. Cl. 7.
Wiener Metallwarenfabrik Smolka & Co., Wien-Mauer, Austria. 869,668, pub. 3–4–69. Cl. 22.
Williams Gold Refining Co. Inc., Buffalo, N.Y. 869,773, pub. 3–4–69. Cl. 44.
Williams, J. B., Co., Inc., The: *See*—
Conti Products Corp.
Williams, John M., Phoenix, Ariz. 747,566, canc. Cl. 23.
Wool, F. G., Packing Co., San Jose, Calif. 507,387, ren. 5–20–69. Cl. 46.
Worcester Salt Co., Silver Springs, and New York, N.Y., to Morton International, Inc., Chicago, Ill. 74,109, ren. 5–20–69. Cl. 46.
Worthington Biochemical Corp., Freehold, N.J. 869,573, pub. 3–4–69. Cl. 6.
Wyandotte Chemicals Corp., Wyandotte, Mich. 869,619, pub. 3–4–69. Cl. 16.
Wyandotte Chemicals Corp., Wyandotte, Mich. 869,815, pub. 3–4–69. Cl. 52.
Yellow Springs Instrument Co., Inc., The, Yellow Springs, Ohio. 747,591, canc. Cl. 26.
Yielding Co., Inc., The, Houston, Tex. 869,670, pub. 3–4–69. Cl. 22.
York Bar Bell Co., Inc., d.b.a. York Barbell Co., and A Bob Hoffman Product, York, Pa. 869,792, pub. 3–4–69. Cl. 46.
York Barbell Co.: *See*—
York Bar Bell Co., Inc.

U.S. GOVERNMENT PRINTING OFFICE: 0—1969

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
May 27, 1969 Volume 862 Number 4

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of April 1969

Examiner affirmed	167
Examiner affirmed in part	16
Examiner reversed	22
Total	205

Certificates of Correction for the Week of May 27, 1969

3,299,167
3,333,327
3,333,351
3,348,561
3,358,554
3,371,008
3,382,252
3,353,667
3,357,091
3,361,165
3,361,965
3,364,155
3,369,556
3,369,815
3,370,829
3,392,094
3,410,798

Patents Available for Licensing or Sale

3,392,501. METHOD OF MARKING COVERED ITEMS. James M. Gilchrist, Jr., P.O. Box 15066, Atlanta, Ga., 30333.

3,426,434. DRAFTING PROTRACTOR. Harvey R. Zarling, 311½ S. 5th St., Breckenridge, Minn., 56520.

3,432,172. METHOD AND APPARATUS FOR INSTALLING NEW PACKING ON A PROPELLER SHAFT. Allen L. and Olga T. Hendrickson, P.O. Box 976, Redwood City, Calif., 94064.

3,433,485. PUZZLE. Madeline S. and Neil R. Renn, Camp Hill, Pa. Correspondence to: Sherman Levy, Suite 602 Victor Building, 724 9th St. NW., Washington, D.C., 20001.

3,434,629. MOUTH WASH DISPENSER. Alvin W. and Yvonne L. Hooge, 4835 East View Drive, New Orleans, La., 70126.

Grefco, Inc., a subsidiary of General Refractories Company is prepared to grant non-exclusive licenses upon reasonable terms under the following 7 patents.

Applications for licenses should be addressed to: Grefco, Inc., 1520 Locust St., Philadelphia, Pa., 19102, Attn: Patent Counsel.

2,665,813. HIGH FLOW RATE MINERAL FILTER AID.
2,698,251. METHOD OF MANUFACTURING SILICEOUS INSULATING MATERIAL.
2,698,256. SILICEOUS COMPOSITION AND METHOD FOR MANUFACTURING THE SAME.
2,783,011. DUPLEX SLEEVE PALLET.
2,801,065. MATERIALS-HANDLING DEVICE.
2,695,839. METHOD AND COMPOSITIONS FOR KILLING WEEDS.
2,695,840. METHODS AND COMPOSITIONS FOR KILLING WEEDS.

Avco Corporation is prepared to grant licenses under the following 12 patents upon reasonable terms to domestic manufacturers.

Applications for license under the following patents may be addressed to: General Patent Counsel, Avco Corporation, Suite 1800, 1014 Vine St., Cincinnati, Ohio, 45202.

2,953,369. MAGNETIC DRIVE AND BRAKE FOR MAGNETIC TAPE.
3,015,013. HIGH DENSITY RADIANT HEAT SYSTEMS.
3,027,425. MAGNETIC RECORDING SYSTEM.
3,073,759. SELECTIVE PLATING PROCESS.
3,082,521. BERYLLIUM ALLOY AND METHOD OF MAKING THE SAME.
3,190,769. MEANS FOR AND METHOD OF MAKING ZIRCONIA GLASS COATINGS.
3,208,013. ELECTROMAGNETIC WAVE ABSORBER COMPRISING INHERENTLY RESONANT FILAMENTARY FIBERS SUSPENDED IN DIELECTRIC.
3,258,617. PIEZOELECTRIC DEVICE.
3,280,048. SOLID HEAT TRIGGERED COMPOSITIONS CAPABLE OF FORMING A POLYURETHANE FOAM.
3,297,873. MICROSCOPE SYSTEM.
3,362,505. BAND BRAKE.
3,406,097. MOLECULAR STILL.

The Radio Corporation of America offers to grant non-exclusive licenses on reasonable terms and conditions under the following 26 patents.

Inquiries respecting licenses under the following patents should be addressed to: Radio Corporation of America, Staff Vice President, Domestic Licensing, 30 Rockefeller Plaza, New York, N.Y., 10020.

3,431,437. OPTICAL SYSTEM FOR PERFORMING DIGITAL LOGIC.
3,431,505. EMITTER FOLLOWER CIRCUIT HAVING SUBSTANTIALLY CONSTANT CURRENT EMITTER SUPPLY.
3,431,890. APPARATUS FOR REPLENISHING DEVELOPER IN AN ELECTROPHOTOGRAPHIC SYSTEM.
3,432,035. DOCUMENT HANDLING APPARATUS.
3,432,718. TELEVISION FOCUS VOLTAGE SUPPLY.
3,432,720. TELEVISION DEFLECTION CIRCUIT WITH LINEARITY CORRECTION FEEDBACK.
3,432,785. COIL FORM.
3,432,920. SEMICONDUCTOR DEVICES AND METHODS MAKING THEM.
3,433,932. PUNCHED CARD READER.
3,433,993. TIME SWITCH CONTROLLED ENERGIZING CIRCUIT FOR AUTOMATIC DEGAUSSING APPARATUS.
3,434,000. STABILIZATION OF TELEVISION DEFLECTION CIRCUITS.
3,434,014. PACKAGING OF ELECTRICAL EQUIPMENT.

New Applications Received During March 1969

Patents	8139
Designs	537
Plant Patents	5
Reissues	28
Total	8709

Issue—May 27, 1969

Patents	1300—No.	3,445,860 to No.	3,447,159, incl.
Designs	46—No.	214,255 to No.	214,300, incl.
Plant Patents	1—No.	2,889	
Reissues	13—No.	26,582 to No.	26,594, incl.
Total	1360		

3,434,019. HIGH FREQUENCY HIGH POWER TRANSISTOR HAVING OVERLAY ELECTRODE.

3,434,021. INSULATED GATE FIELD EFFECT TRANSISTOR.

3,434,058. RING COUNTERS EMPLOYING THRESHOLD GATES.

3,434,112. COMPUTER SYSTEM EMPLOYING ELEMENTARY OPERATION MEMORY.

3,434,119. MAGNETIC MEMORY EMPLOYING STRESS WAVE.

3,434,121. CRYOELECTRIC MEMORY SYSTEM.

3,434,123. SENSE AMPLIFIER FOR MAGNETIC MEMORY.

3,434,156. WRITE VERTIFICATION FOR A RECORDING SYSTEM.

3,434,876. PHOTOSENSITIVE CATHODES.

3,434,877. METALLIC CONNECTION AND THE METHOD OF MAKING SAME.

3,435,129. CIRCUIT FOR DISTINGUISHING INTERRUPT SIGNAL FROM OTHER SIGNALS.

3,435,134. DIGITAL TELEVISION DATA COMPRESSION SYSTEM.

3,435,138. SOLID STATE IMAGE PICKUP DEVICE UTILIZING INSULATED GATE FIELD EFFECT TRANSISTORS.

3,435,276. CONVERGENCE APPARATUS FOR NULLIFYING UNWANTED INDUCED DEFLECTION CURRENTS.

General Electric Company is prepared to grant non-exclusive licenses under the following 22 patents upon reasonable terms to domestic manufacturers.

Applications for license under the following patent may be addresesd to: Patent Counsel, Contractor Equipment Division, General Electric Company, 1285 Boston Ave., Building 21ES, Bridgeport, Conn., 06062.

3,424,882. SWITCHING DEVICE.

Applications for license under the following 3 patents may be addressed to: General Electric Company, Patent Counsel, Silicone Products Department, Chemical and Medical Division, Waterford, N.Y., 12188.

2,763,609. VULCANIZATION OF SILICONE RUBBER WITH HIGH ENERGY ELECTRONS.

3,117,149. UNSYMMETRICAL POLY(ARYLENESILOXANE) FLUIDS.

3,222,369. PHENYLSILOXANEDIOL AMINE COMPLEXES AND PROCESS FOR THEIR PRODUCTION.

Applications for license under the following 8 patents may be addressed to: Patent Counsel, Appliance and Television Group, General Electric Company, Appliance Park, Louisville, Ky., 40225.

3,290,893. HOUSEHOLD REFRIGERATOR.

3,295,908. STORAGE CABINET DRAWER ASSEMBLY.

3,405,252. BAKE UNIT BAFFLE.

2,412,726. WINDOWED OVEN DOOR.

2,412,727. FLUSH AND TOP MOUNTED BUILT-IN COOKTOP.

3,413,443. RESTRICTED VOLUME SELF-CLEANING OVEN.

3,422,812. ELECTRIC COOKING APPLIANCE WITH ADJUSTABLE CONTROL HOUSING.

3,425,405. DOMESTIC OVEN WITH REMOVABLE WALL PANELS.

Applications for license under the following 10 patents may be addressed to: General Electric Company, Appliance Components Division, 1635 Broadway, Fort Wayne, Ind., 46804, Attn: Patent Counsel.

3,407,473. APPARATUS FOR EFFECTING COIL PRESSBACK IN INDUCTIVE DEVICES.

3,407,481. METHOD OF PRESSING BACK ELECTRICAL COIL END TURN PORTIONS IN AN INDUCTIVE DEVICE.

3,407,482. METHOD OF DISPLACING AND COMPACTING END TURN PORTIONS OF WINDINGS USEFUL IN INDUCTIVE DEVICES.

3,407,484. METHOD OF FORCING BACK ELECTRICAL COILS CARRIED BY SLOTTED STRUCTURE.

3,407,494. METHODS FOR EFFECTING COIL ALTERATIONS IN INDUCTIVE DEVICES.

3,421,452. ARRANGEMENTS FOR ALTERING THE OVERALL CONFIGURATION OF ELECTRICAL COILS WOUND FROM A NUMBER OF CONDUCTOR TURNS.

3,412,453. APPARATUS FOR INTRODUCING ELECTRICAL CONDUCTORS INTO CONDUCTOR ACCOMMODATING STRUCTURE.

3,421,208. METHODS FOR SEPARATING ELECTRICALLY CONDUCTIVE AND ADJACENT ELEMENTS.

3,421,209. METHOD OF REDUCING ELECTRICAL LOSSES IN ELECTRICALLY CONDUCTIVE LAMINATED STRUCTURES.

3,423,722. ELECTRIC CONNECTOR HAVING INTERFITTING HOUSING MEMBERS.

Dedications

3,086,074.—*Alex Just*, River Forest, *Paul A. Maximoff*, Barrington, and *Richard T. Krause*, Barrington Hill, Ill. SELF-ORIENTATING TERMINAL CONNECTORS. Patent dated Apr. 16, 1963. Dedication filed Feb. 10, 1969, by the assignee, *Malco Manufacturing Company, Inc.*

Hereby dedicates to the people of the United States the terminal portion of the term of said patent subsequent to April 12, 1968.

3,136,591.—*Alex Just*, River Forest, *Paul A. Maximoff*, Barrington, and *Richard T. Krause*, Barrington Hill, Ill. PRINTED CIRCUIT BOARD ASSEMBLY. Patent dated June 9, 1964. Dedication filed Feb. 10, 1969, by the assignee, *Malco Manufacturing Company, Inc.*

Hereby dedicates to the people of the United States the terminal portion of the term of said patent subsequent to September 14, 1966.

Disclaimers

3,033,999.—*James M. Thornbery*, Morton Grove, and *Dale F. Willcox*, Aurora, Ill. TIMER AND TIMER POSITIONING MEANS. Patent dated May 8, 1962. Disclaimer filed Feb. 24, 1969, by the assignee, *Controls Company of America.*

Hereby enters this disclaimer to claims 1 and 18 through 21 of said patent.

3,161,457.—*Hans Schroeder*, Bellbrook, *William H. Puterbaugh, Jr.*, Waynesville, and *Robert C. Meckstroth*, Dayton, Ohio. THERMAL PRINTING UNITS. Patent dated Dec. 15, 1964. Disclaimer filed Feb. 7, 1969, by the assignee, *The National Cash Register Company.*

Hereby enters this disclaimer to claims 1 and 2 of said patent.

3,229,113.—*George H. Wells*, Conshohocken, Pa. CIRCUITS OF THE MONOSTABLE AND BISTABLE TYPE EMPLOYING TRANSISTORS AND NEGATIVE RESISTANCE DIODES. Patent dated Jan. 11, 1966. Disclaimer filed Feb. 26, 1969, by the assignee, *Radio Corporation of America.*

Hereby enters this disclaimer to claims 1, 4 and 6 of said patent.

3,326,609.—*Charles R. Auten*, Charlotte, N.C., and *Howard H. Langdon*, Fairport, N.Y. FIBER DISTRIBUTING SYSTEM. Patent dated June 20, 1967. Disclaimer filed Jan. 16, 1969, by the assignee, *Curlator Corporation.*

Hereby enters this disclaimer to claims 3 and 4 of said patent.

3,357,269.—*Donald G. Fawkes*, Chicago, Ill. VALVE OPERATOR. Patent dated Dec. 12, 1967. Disclaimer filed Apr. 14, 1969, by the assignee, *Henry Pratt Company.*

Hereby enters this disclaimer to claim 7 of said patent.

3,358,897.—*Frank L. Christensen*, Saratoga, Calif. ELECTRIC LEAD WIRE BONDING TOOLS. Patent dated Dec. 19, 1967. Disclaimer filed Jan. 16, 1969, by the assignee, *Tempress Research Co.*

Hereby enters this disclaimer to claim 2 of said patent.

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF MAY 5, 1969

PATENT EXAMINING GROUPS	Actual Filing Date of Oldest New Case Awaiting Action
*Denotes oldest new application.	
CHEMICAL EXAMINING GROUPS	
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—M. STERMAN, Director. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	4-06-67
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Director. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	8-02-66
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—L. J. BERCOVITZ, Director. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping, and Treating Processes.	1-18-67
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—M. STERMAN, Acting Director. Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	*7-18-66
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Director. Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	1-05-67
ELECTRICAL EXAMINING GROUPS	
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—W. S. COLE, Director. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	5-19-67
SECURITY, GROUP 220—S. BOYD, Director. Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	8-29-66
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—S. BOYD, Acting Director. Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	*5-25-66
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Director. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	2-17-67
PHYSICS, GROUP 280—R. L. EVANS, Director. Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	7-12-67
DESIGNS, GROUP 290—S. BOYD, Director. Industrial Arts; Household, Personal and Fine Arts.	6-11-68
MECHANICAL EXAMINING GROUPS	
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Director. Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	9-01-67
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Director. Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders Woodworking; Tools; Cutlery; Jacks.	*5-02-67
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Director. Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	*5-02-67
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Director. Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	3-11-68
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Director. Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	12-01-67
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—F. H. BRONAUGH, Director. Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	9-12-67

Total number of pending applications (excluding Designs)	186,286
Total number of Design applications pending	3,290

Expiration of patents: The patents within the range of numbers indicated below expire during May 1969, except those which may have expired earlier due to shortened terms under the provisions of Public Law 690, 79th Congress, approved August 8, 1946 (60 Stat. 940) and Public Law 619, 83rd Congress, approved August 23, 1954 (68 Stat. 764), or which may have had their terms curtailed by disclaimer under the provisions of 35 U.S.C. 253. Other patents, issued after the dates of the range of numbers indicated below, may have expired before the full term of 17 years for the same reasons, or have lapsed under the provisions of 35 U.S.C. 151.

Patents	Numbers 2,595,214 to 2,596,658, inclusive
Plant Patents	Numbers 1,091 to 1,100, inclusive

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE FRANKLIN W. HERRICK AND LOUIS H. BOCK

No. 7396. Decided June 20, 1968

[55 CCPA 1238; 397 F.2d 332; 158 USPQ 90]

1. REJECTIONS—DIFFERENT COMBINATIONS OF REFERENCES—35 U.S.C. 132.
"This appeal returns to this court for determination after having been once remanded to the Patent Office. The remand was for further proceedings consistent with our opinion pointing out that the nature of the original rejection, and particularly the excessive number of different combinations of references relied upon, defeated the intent and purpose of 35 U.S.C. 132. That purpose, which we there made clear, is to insure that applicants for patent are properly apprised of the rejection they must meet."

2. PATENTABILITY—OBVIOUSNESS—35 U.S.C. 103.
"In making that legal determination [obviousness] the other language of § 103 must also be considered. We are required by that statute to evaluate the claimed subject matter as a whole in the light of the differences between the claim and the prior art. In addition, the Supreme Court referred to the need, in determining patentability, to 'guard against slipping into use of hindsight,' citing *Monroe Auto Equipment Co. v. Heckethorn Mfg. & Sup. Co.*, 332 F.2d 406, 412 (6th Cir. 1964). *Monroe*, in turn, relies for that proposition on this court's opinion in *In re Sporck*, 49 CCPA 1039, 1042–43, 301 F.2d 686, 689, 133 USPQ 360, 362–63 (1962)."

3. SAME—PARTICULAR SUBJECT MATTER—"POLYMETHYLOL PHENOL AND PHENOLIC RESINS."
The refusal of certain claims in an application entitled "Polymethylol Phenol and Phenolic Resins," as unpatentable over the prior art, is reversed.

REVERSED.

Pennie, Edmonds, Morton, Taylor and Adams, W. Brown Morton, Charles N. Shane, Jr. (*Hal E. Seagraves* of counsel) for appellants.

Joseph Schimmel (*Jack E. Armore* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, RICH, SMITH and ALMOND, Associate Judges

SMITH, *J.*, delivered the opinion of the court.

A single legal issue emerges from this twice-argued appeal: whether the subject matter sought to be patented is obvious within the meaning of 35 U.S.C. 103. Because we conclude that the evaluation of that subject matter *as a whole* according to the statutory precepts may not be sustained, we reverse the decision of the Board.

[1] This appeal returns to this court for determination after having been once remanded[1] to the Patent Office. The remand was for further proceedings consistent with our opinion pointing out that the nature of the original rejection, and particularly the excessive number of different combinations of references relied upon, defeated the intent and purpose of 35 U.S.C. 132. That purpose, which we there made clear, is to insure that applicants for patent are properly apprised of the rejection they must meet.

The remand has resulted in a modified Examiner's answer, and a new decision by the Board of Appeals,[2] having the effect of substantially reducing the number of references to be considered [3] and thereby simplifying the basis for the rejection at least to the extent inherent in that action.[4]

[1] *In re Herrick*, 52 CCPA 1664, 344 F.2d 713, 145 USPQ 400 (1965).
[2] The board consisted of Messrs. Federico and Rosa, Examiners-in-Chief, and Stone, Acting Examiner-in-Chief. Mr. Rosa wrote the opinion of the board.

The Invention

Appellants' application [5] discloses and claims a partially-condensed polymethylol phenol, a method for producing it, a composition of it with an alkali lignin and a process for forming a condensation product of the polymethylol phenol and alkali lignin. Claims 1, 2 and 4 are representative and read:

1. The process for producing polymethylol phenol which comprises reacting phenol with from 2.5 to 3.0 moles of aqueous formaldehyde in the presence of from 0.25 to 1.0 mole of sodium hydroxide, reacting the materials at a reflux temperature to form a polymethylol phenol having a mole ratio of from 2.3 to 2.52 moles of formaldehyde per mole of phenol, cooling the mixture to arrest condensation, adding sulfuric acid and water to the mixture and keeping the temperature below 10° C., separating the condensate as a heavy syrup from an aqueous portion, and washing the condensate with water to free it from inorganic material, said polymethylol phenol being insoluble in water but soluble in alcohol.

2. An improved polymethylol phenol in the form of a heavy syrup having a combined formaldehyde-to-phenol mole ratio of from 2.3 to 2.52 and having a degree of condensation such that it is water insoluble but soluble in organic solvents including methanol, and being free of inorganic material.

4. The resin-forming composition comprising a polymethylol phenol in the form of a heavy syrup having a mole ratio of combined formaldehyde-to-phenol of from 2.3 to 2.52 which is water insoluble containing no free formaldehyde and being free of inorganic material, and an alkali lignin which is free of inorganic material in admixture with the polymethylol phenol, said mixture being soluble in organic solvents including methanol and being condensible by heating to an insoluble, infusible resin which has low water absorption and high dielectric properties.

Claim 3, like claim 2, is directed to the polymethylol phenol; claims 5 and 6 are directed to the same composition as claim 4; and claim 8 is directed to the process of forming the condensation product attained with the composition of claim 4.

In the words of the specification, the polymethylol phenol of the invention is:

* * * characterized by having a formaldehyde to phenol ratio of from 2.30 to 2.52, freedom from inorganic constituents, and a state of condensation in such a narrow range that it is water insoluble but soluble in polar organic solvents, and is advantageously useful for forming laminating varnishes, as a component of thermosetting phenolic resin compositions, as curing agent for other phenolic materials, and for other purposes where thermosetting condensates that yield insoluble, infusible products are useful. The polymethylol phenol is soluble in such organic solvents as the lower alcohols and is compatible with naturally occurring phenolic materials such as lignin, quebracho and phenolic constituents of bark. Compositions of the polymethylol phenol and such naturally occurring phenolic materials are thermosetting and can be used to make molding compounds, and paper laminates with properties equivalent to those made with conventional phenolic laminating resins. * * *

[3] On remand, the Examiner and Board treated five of the eleven references originally relied upon as "cumulative," and stated that they need not be considered. Thus, we have not considered them.
[4] Although a more complete explanation of the reasons for the rejection on the references relied upon on remand would have provided a clarification helpful to both appellants and this court, neither the Examiner nor the Board elaborated on the *manner* in which the retained references were applied.
We regret that the Patent Office has declined our invitation to sharpen their focus on the factual basis upon which the legal conclusion of "obviousness" is based. We thought it clear that the spirit of our earlier opinion reflected our desire for "greater certainty," rather than "speculation," for a "rational isolation and determination of the legal issues which may be present," and for a statement of the rejection which comports with the "intent and purpose of 35 U.S.C. 132," rather than defeats it.
[5] Serial No. 625,209, filed November 30, 1956, for "Polymethylol Phenol and Phenolic Resins."

The products of the invention, being free from electrically conducting electrolytes, can be used to form laminates where dielectric properties are essential. Additionally, they have excellent dimensional stability and resistance to water.

The Prior Art

As a result of the action taken on the remand, the claims now stand rejected on prior art consisting of the following:

Amann et al., 1,614,171, Jan. 11, 1927.
Thompson et al., 2,186,687, Jan. 9, 1940.
Reboulet, 2,228,976, Jan. 14, 1941.
Schrader et al., 2,620,321, Dec. 2, 1952.
Dietz, 2,673,190, Mar. 23, 1954.
Martin, "The Chemistry of Phenolic Resins," pages 23, 24, 97 and 127, John Wiley and Sons, Inc., New York, 1956.

Amann describes the production of a mixture of phenol alcohols by the treatment of phenols with formaldehyde in the presence of an alkali. It states that dihydroxy diphenyl methane derivatives or higher molecular compounds of resinous character are formed if the reaction is not modulated directly by cooling or the like. Use of 1.5 or more moles of formaldehyde per mole of phenol is disclosed. The reference includes an example directed to a reaction product having a mole ratio of 2.5 moles of formaldehyde to 1 mole of phenol, which is precipitated by a weak acid while adding water and then concentrated to provide a thin brown oil.

Thompson discloses preparation of phenol-formaldehyde resin compositions to be used in the production of laminated bodies and as adhesives. The compositions are prepared by reacting formaldehyde with phenol at more than a 2 to 1 mole ratio in the presence of an alkaline catalyst such as sodium hydroxide, neutralizing with an acid and then cooling and dehydrating.

Reboulet discloses the use of a thermoplastic lignin with 50% or more of "a binder having thermosetting characteristics, such as phenol-formaldehyde resin," to provide a thermosetting molded product.

Schrader is directed to an adhesive prepared by mixing together a "base" resin and a "catalytic" or "nucleated" resin. The "catalytic" resin is prepared by reacting 2.25 to 3.5 moles of formaldehyde per mole of phenol in the presence of from 0.5 to 1 mole of a mixture of alkali metal hydroxide and alkali metal carbonate at a temperature between 55° and 70° C. for from 4 to 10 hours. The base resin is described as prepared by cooking under reflux "an aqueous mixture of a phenol, formaldehyde and alkali metal hydroxide in the proportions of 1.4 to 3.0 mols of formaldehyde and 0.5 to 1.0 mol of alkali metal hydroxide per mol of the phenol to a viscosity of about 200 to 500 centipoises at a resin solids content of about 30 percent."

Dietz discloses preparation of a condensation product using formaldehyde and phenol in molecular ratios ranging from about 1 to 1 to about 1.8 to 1. The materials are reacted in the presence of a caustic soda (sodium hydroxide) solution and cooled to a temperature of about 35° to 40° C. which is maintained for 2 to 3 days. The mixture is then neutralized with hydrochloric acid while being cooled with ice to maintain a temperature not in excess of 40° C., followed by allowing the mixture to separate into layers and washing the resin layer with water.

Martin is a text, three separate portions of which have been cited. The first part, comprising pages 23 and 24, reports the separation of 3,3′,5,5′-tetramethylol-4,4′-dihydroxydiphenylmethane from a mixture of phenol, formaldehyde and sodium hydroxide. It states that tetramethyloldihydroxydiphenylmethane is formed by the self-condensation of the salts of trimethylolphenol in aqueous solution. The reaction occurs with the elimination of water and formaldehyde between 2 moles of the trialcohol with the reaction favored by a high ratio of formaldehyde to phenol such as 2 or 3 to 1. Page 97 of Martin discusses certain "Resoles" or one-stage resins, referring specifically to a "Water-Soluble Resin" and a "Casting Resin." Page 127 of the reference reports a process in which evolution of formaldehyde, which took place when p-cresol dialcohol was heated in the presence of sodium ions, ceased when all sodium ions were removed.

The Rejections

The Examiner rejected claim 1 as "obvious under 35 U.S.C. 103 over Thompson et al., Schrader et al., or Dietz in view of Martin" and claims 2 and 3 "as obvious under 35 U.S.C. 103 over the Martin text considered together with Amann et al. and Schrader et al." He rejected claims 4 to 6 and 8 as "obvious over Reboulet considered with the Martin text taken in view of Schrader et al., and Amann et al." The Board principally adopted, as its own, the Examiner's reasons given in support of those rejections, adding only certain brief comments. We will therefore direct our discussion primarily to the Examiner's statement of the rejection, referring to the Board's comments where such reference appears to be helpful to an understanding of our position.

Opinion

In *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), the Supreme Court set forth broad guidelines for observing the requirements of § 103 of the Patent Act of 1952. It cast the emphasis in terms of an inquiry into the obviousness of the subject matter sought to be patented. In an oft-quoted passage, it stated, 383 U.S. at 17, 148 USPQ at 467:

> • • • the § 103 condition, which is but one of three conditions, each of which must be satisfied, lends itself to several basic factual inquiries. Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined. • • •

[2] In making that legal determination, the other language of § 103 must also be considered. We are required by that statute to evaluate the claimed subject matter *as a whole* in the light of the differences between the claim and the prior art. In addition, the Supreme Court referred to the need, in determining patentability, to "guard against slipping into use of hindsight," citing *Monroe Auto Equipment Co.* v. *Heckethorn Mfg. & Sup. Co.*, 332 F.2d 406, 412 (6th Cir. 1964). *Monroe*, in turn, relies for that proposition on this court's opinion in *In re Sporck*, 49 CCPA 1039, 1042–43, 301 F.2d 686, 689, 133 USPQ 360, 362–63 (1962).

In *Sporck*, this court stated, id. at 1045, 301 F.2d at 690, 133 USPQ at 364:

> • • • Here, neither the record nor the facts of which we are able to take judicial notice supplies the factual data necessary to support the legal conclusion of

obviousness of the invention at the time it was made. We are unwilling to substitute speculation and hindsight appraisal of the prior art for such factual data. * * *

With these preliminary concepts in mind, we turn to an analysis of the claims.

The rejection of claim 1

In connection with claim 1, appellants state:

The novel and distinguishing aspect of the process as defined in claim 1 includes reacting the critical range of 2.5 to 3.0 moles of formaldehyde with one mole of phenol under conditions which lead to condensation of the same to that critical stage wherein the product becomes a water-insoluble, alcohol-soluble polymethylol phenol condensate having a mole ratio of 2.3 to 2.52 moles of formaldehyde per mole of phenol. It is important to note that the reactants are cooled to 10° C. or lower to arrest condensation during and after the addition of acid. The polymethylol phenol condensate formed in this manner, while extremely reactive, is still water-insoluble and can be washed with water to remove inorganic material which would make the product a poor dielectric.

It is, of course, true that the processes disclosed in the references cited against claim 1 are specifically different from that claimed process, and from each other, in that they disclose different proportions of reactants, different catalysts, different reaction procedures or durations, or different steps in treating the product after condensation.

The question before us is whether the claimed process is obvious in view of the teachings of *any* one of Thompson, Schrader or Dietz, taken with the teachings of Martin. The Examiner has pointed out various aspects of the reference processes which correspond to appellants' process. However, he has failed to explain why the use of specific features of the claims which are lacking in the primary reference processes might be so suggested in the secondary reference as to establish obviousness of the claimed subject matter as a whole to a person having ordinary skill in the art. In this respect the rejection appears to have been guided by "hindsight." Despite this observation, we have given full and independent consideration to the positions of the Examiner and the Board and to the references which are now relied on to support the rejection. Our conclusion is that the rejection of claim 1 does not constitute a proper rejection under 35 U.S.C. 103.

At the outset, it is implicit in claim 1 that the reactants are supplied in the ratio of 2.5 to 3.0 moles of formaldehyde per mole of phenol.[6] One of the basic references, Schrader, does meet that ratio as well as the recited ratio of the sodium hydroxide employed. However, Schrader lacks a teaching of arresting the condensation as required by the claim and employing the specified subsequent treatment which provides appellants' product.

None of the references discloses that cooling of the mixture to arrest condensation should be followed by adding sulfuric acid to the mixture and keeping the temperature below 10° C. Thus, Thompson specifically discloses neutralizing the condensate before cooling and does not disclose stopping the condensation at that point to provide a condensate having the mole ratio recited in the claim. Dietz teaches cooling the condensate and adding hydrochloric acid to it while cooling with ice, "the temperature not being allowed substantially to exceed about 40° C." This reference was described by the Examiner as

[6] This comment is occasioned by the Examiner having, in his answer for the first time, questioned the language of claim 1 by stating that "the amount of phenol is *not* specified." We think the only plausible interpretation of the claim is that its specification of the number of moles of aqueous formaldehyde and sodium hydroxide is in relation to a single mole of phenol.

"of great interest." But Dietz, in addition to using a substantially lower mole ratio of the formaldehyde and phenol reactants than appellants, does not suggest employing the much lower temperature of less than 10° C. required by the present process. The secondary reference, Martin, likewise lacks any suggestion of cooling to the required temperature.

In affirming the Examiner as to claim 1, the Board commented:

* * * The mere fact that the references fail to teach the production of a water-insoluble product is of no consequence since in determining the patentability of process claims the steps comprising the process are the essential features for consideration, not the particular substance obtained from its application. * * *

That contention is answered by the fact that the combination of steps making up the claimed process is novel and the references, for the reasons already stated, do not demonstrate that the differences between the claimed process and the prior art are such that the claimed subject matter as a whole would have been obvious at the time the invention was made.

The rejection of claims 2 and 3

As to claims 2 and 3, the Examiner stated that the claimed products "are obvious to one skilled in the art having the tetramethylol-4,4'-dihydroxydiphenylmethane disclosure of Martin before him" and that obviousness is further shown by consideration of Martin with the secondary references to Amann and Schrader. More specifically, concerning the secondary references, he stated:

Amann et al. is relied upon to show products from phenol and excess formaldehyde formed in the presence of NaOH. The reference is also relied on to show the solubility of such products in such solvents as alcohols, acetone, esters, etc. The reference is further relied on for its comprehensive discussion of the possible reactions of phenol and formaldehyde.

Schrader et al. is relied upon to show viscous liquid products from the action of excess formaldehyde upon phenol.

The tetramethyloldihydroxydiphenylmethane product of Martin is not shown to be in the form of a heavy syrup or to be condensed to the extent that it is water-insoluble but soluble in organic liquids including methanol as these limitations are included within the claims. In particular, the Examiner has not taken the position that the product is water-insoluble[7] or advanced any reason why it would be obvious to make it so.

In particular, he has not pointed out anything in the secondary references which suggests that the Martin procedure might be modified to provide a condensation product having the specified properties, much less how to so modify it. The Amann products are described as showing "a more or less great degree of solubility in water." In fact, the product of Amann's Example 7, cited by the Examiner as having the required 2.50 mole ratio, is stated to be "readily soluble in water." The "catalytic" or "nucleated" resin of Schrader is also described as "water-soluble." While Schrader does not disclose the solubility characteristics of its "base" resin with regard to water, the Examiner does not contend that it would be any different than the reference products in that respect.

Also, the Examiner criticized the phrase "degree of concentration" in claims 2 and 3 as "not being of recognized significance or defined in

[7] It is of interest that the statement of the Board beginning "[t]he mere fact that the references fail to teach the production of a water-insoluble product," quoted previously in this opinion in discussing claim 1, was made in its original decision when claim 1 stood rejected on "any one of * * *, Amann et al., Thompson et al., Schrader et al. * * *, Dietz, * * * each alone, or in view of * * * Martin." Those include all the references relied on against claims 2 and 3.

the claims" and deemed that limitation not to be "of patentable import." However, that phrase is employed and effectively defined in the specification and was suggested by an Examiner for use in claims 2 and 3 for defining the property of the condensate being "water insoluble but soluble in organic solvents including methanol." Appellants state that the language in question would be just as meaningful if the word "degree" were not in it. They further state that the claim means "condensed to a state of water insolubility but organic solvent solubility." That understanding of the phrase seems to us to be correct and to specify a condition which we are not satisfied is either taught or made obvious by the combinations of prior art relied upon in the rejection.

In adopting the Examiner's reasons for rejecting claims 2 and 3, the Board observed:

> * * * it is noted that the record does not indicate that the prior art polymethylol phenol products are not water-insoluble when tested under the same conditions i.e., temperature and pH, as the claimed products. * * *

It is significant on that point that the claimed products are disclosed and claimed as water-insoluble without any limitation being set out as to temperature. Appellants state that "even at room temperature [their polymethylol phenol condensate] is substantially insoluble in water." On the other hand, nothing is pointed out in the record to demonstrate that any of the reference materials are other than water soluble.[8] The rejection of claims 2 and 3 will not be sustained.

The rejection of claims 4 to 6 and 8

The rejection of claims 4 to 6 and 8 adds Reboulet to the references cited to sustain the rejection of product claims 2 and 3. It is the theory of the rejection that, in view of Reboulet's combination of phenolic resins with lignin, it would be obvious to combine the particular condensate of the latter claims, which was itself considered obvious, with alkali lignin to provide a resin-forming composition. The Examiner stated that "only the expected results are obtained" from the combination he suggested.

In contesting that rejection, appellants state:

> Reboulet discloses that alkali lignin can be molded by itself, or can be mixed with various materials such as clay, wood fiber or that it can be used as an extender with phenol formaldehyde resins in molding compounds. There is not the remotest suggestion in Reboulet of using with alkali lignin a polymethylol or condensate of polymethylol phenol or any phenolic material that will cross-link with the alkali lignin. As Reboulet states, the alkali lignin can be molded alone and there is no disclosure that the phenol formaldehyde is more than an extender or that it has any coaction with the alkali lignin.

It is apparent that Reboulet does not teach that there is cross-linking between the lignin and the phenol formaldehyde resin. The reference designates the latter material only broadly and does not disclose it as having the properties of appellants' condensate as defined in the claims. It thus is plain that appellants do obtain a result which is new so far as the references are concerned; a product which is capable of producing a resin adhesive wherein the novel polymethylol phenol condensate is cross-linked with the alkali lignin. The record provides no evidence which satisfies us that such product or the process of producing it is obvious.

[8] The Solicitor refers to a statement in Martin's discussion of a "Resole" described as a "Water-Soluble Resin" that "the reaction period may have to be shortened and the dehydration conducted at a very low temperature; otherwise, water solubility will be lost." That appears in a portion displaced 73 pages from the part relied on by the Examiner as disclosing the tetramethylol-4,4'-dehydroxydiphenylmethane and relates to material formed by the reaction of 1.25–1.35 moles of formaldehyde per mole of phenol. We do not find that statement indicative of obviousness of the claimed condensate. The Examiner and Board apparently had the same opinion, since they made no reference to the statement.

[3] The decision of the Board is reversed.

REVERSED.

ALMOND, *J.*, concurs in the result.

WORLEY, *Chief Judge*, dissenting.

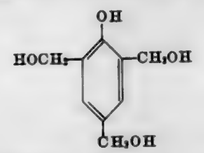
Considering the state of the prior art reflected in the references cited by the Patent Office in this twice-argued appeal, it seems to me the Examiner and Board had ample reason for concluding that the subject matter of appellants' claims is not patentable.

I am particularly concerned with the manner in which the majority treats claims 2 and 3. In substance, those claims recite a water *insoluble*, organic solvent soluble, polymethylol phenol condensate[9] or heavy syrup having a combined formaldehyde-phenol ratio of 2.3 to *2.52* and free of inorganic salts. As the majority observes, the Examiner found those claimed products to be "obvious to one skilled in the art having the tetramethylol-4,4'-dihydroxydiphenyl-methane disclosure of Martin" alone before him or considered further with Amann and Schrader.

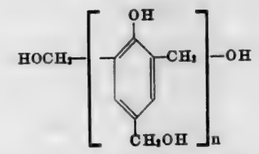
The Martin reference discloses, in pertinent part:

> It is now well established that in addition to the mononuclear phenol alcohols tetramethylol-dihydroxydiphenylmethanes are important products of the *later stages of the reaction between phenol and formaldehyde*. Walker first reported the separation of 3,3',5,5'-tetramethylol-4,4'-dihydroxydiphenylmethane from a

[9] Some background will be helpful in understanding the scope of claims 2 and 3. Appellants react phenol with excess formaldehyde to prepare (at least transitorily or as an intermediate) monomeric trimethylol phenol, having the formula:



That compound, according to appellants' specification and brief, is water *soluble*. It obviously has a combined formaldehyde-phenol ratio of *3.0*. During appellants' synthesis procedure, trimethylol phenol is said to condense further to form compounds of the formula:



Where *n*=2, a "dimer" of trimethylol phenol is obtained, having a combined, formaldehyde-phenol ratio of *2.5*. Further condensation of that "dimer" with other molecules of trimethylol phenol is said in appellants' brief to lead to formation of "trimers," "tetramers," "pentamers" and the like, all possessing a combined formaldehyde-phenol ratio of *less than 2.5*. As appellants' specification states:

> It has been found in carrying out the reaction of phenol with formaldehyde, *as practiced in this invention*, that the product consists of a *mixture* of *monomeric polymethylol phenols* and *low molecular weight condensation products*.
>
> • • • • • • •
>
> it is difficult to obtain a combined ratio of formaldehyde to phenol above 2.5, and *examples* given in this *specification* range in value from 2.45 to 2.52. The corresponding *n* values, therefore, range from 2.08 to 1.92. In other words, the *predominating chain length* is about *two phenol units*.
>
> • • • • • • •
>
> If the degree of condensation is too low the product is too soluble in water and it is impossible to wash it free of salts without severe loss of material. However, *any low condensed product can be used if the inorganic salts are removed by some other means, such as by ion exchange*. On the other hand, if the condensation is carried too far the number of free methylol groups is insufficient to properly cure the lignin and form a water resistant infusible resin. We have found that the degree of condensation corresponding to a combined formaldehyde-to-phenol mole ratio of 2.3 to 2.52 is suitable for the purpose of this invention. This corresponds to an average chain length of 3.3 to 2.0. [Emphasis supplied.]

phenol-formaldehyde reaction mixture in 1935. A few years later Seebach made a detailed study of the compound * * *.

* * * * * * *

Seto has reported the synthesis of the tetramethylol derivatives of 2,2'-[10] and 2,4'-dihydroxydiphenylmethane in addition to the previously known 4,4'-isomer. The tetramethylol derivative of 2,2'-dihydroxydiphenylmethane melts at 132–133° C., of the 2,4'-isomer at 117–118° C., and of the 4,4'-isomer at 145–146° C. Martin had previously obtained a compound melting at 130–132° C. which showed the correct analysis for a tetramethyloldihydroxydiphenylmethane. Although it was never proved, it would appear from the melting point that the compound obtained by Martin may have been the tetramethylol derivative of 2,2'-dihydroxydiphenylmethane.

Tetramethyloldihydroxydiphenylmethane is formed by the self-condensation of the salts of trimethylolphenol in aqueous solution. The reaction occurs by the elimination of water and formaldehyde between 2 moles of the trialcohol and appears to be a first-order reaction dependent on the concentration of trimethylolphenol. This would mean that significant quantities of the tetraalcohol would be formed only in the later stages of a reaction between phenol and formaldehyde after appreciable quantities of the trialcohol had accumulated in the system. *A high ratio of formaldehyde to phenol, e.g., in the neighborhood of 2 or 3 to 1, also favors the formation of the compounds*, but they have been detected even at a ratio of 0.8 to 1. A long reaction period would favor the tetraalcohol; a somewhat shorter reaction period would give more of the trialcohol. Many of these points are well illustrated by the data presented by Freeman and Lewis. [Emphasis supplied.]

Martin also discloses processes for the manufacture of "some of the more common resoles [11] or One-Stage resins," stating:

CASTING RESIN.—For *each mole* of phenol, *2.5 moles of formaldehyde* as formalin solution is employed. The catalyst may be any alkali such as NaOH, KOH, or LiOH. Approximately 15 grams of 10% caustic per mole of phenol is typical with the reaction mixture being held at reflux temperature for 1¼–1½ hours. The resin is then *cooled* and *neutralized* to a pH of 5.5–6.5 with lactic, citric, or tartaric acid. * * * [Emphasis supplied.]

Said the Examiner:

* * * It is to be noted (and emphasized) that the tetramethylol compound relied on in Martin has 4 (four) methylol groups and a methylene bridge (joining the two phenolic nuclei) * * *, has 5 "combined" formaldehyde groups for two phenolic nuclei, this giving a "combined formaldehyde-to-phenol ratio" of 2.50 to 1. It is thus seen that the tetramethylolphenol compound of the prior art meets the quoted recitation from appealed claim 2.

With respect to the claim limitation "and having a degree of condensation such that it is water insoluble but soluble in organic solvents including methanol," the Examiner noted that appellants' specification discloses that their "polymethylol phenol" has a "predominating chain length" of "two phenol units." He concluded:

* * * clearly, the tetramethylol-4,4'-diphenylmethane of Martin has a chain length of *two phenol units* and a combined formaldehyde to phenol ratio of 2.50:1. It is respectfully submitted that no *novel* or *unobvious* polymethylol phenol has been *discovered* or *claimed;* * * * [Emphasis supplied.]

The Board agreed. Disposition of this appeal has not been facilitated by certain seeming inconsistencies between the arguments made in appellants' brief and the content of their specification and claims, and the resultant uncertainty engendered as to just what appellants are claiming. Their argument with respect to Martin is predicated on

[10] The 2,2'-compound corresponds to the "dimer" appellant state is obtained when n=2 in fn. 9, supra. The 2,4'- and 4,4'-isomers, of course, are also included within the scope of the claims.

[11] According to Kirk-Othmer, Encyclopedia of Chemical Technology, vol. 10, pp. 336–337 (1953), resoles are low molecular weight phenol-formaldehyde resins "which are soluble in alkalies, alcohols, ketones, and, *to some extent, water*. They consist mainly of a complex mixture of phenol alcohols with a relatively high hydroxyl content." [Emphasis supplied.]

Martin's asserted disclosure of only dimers of trimethylol phenol whereas, according to appellants' brief, their reactants are condensed "to the point where *n* is equal to 2 to 5" and claims 2 and 3 are purportedly directed to a condensate *mixture* "consisting of dimers to pentamers." With a condensate mixture consisting *only* of dimers to pentamers, it would appear, of course, quite impossible to have a combined formaldehyde to phenol ratio of greater than 2.5. Appellants have not explained how they obtain a condensate having a combined formaldehyde-phenol ratio of greater than 2.5, e.g. 2.52, without the presence of a fair proportion of trimethylol phenol monomer (at least 4%) if one assumes the 2.52 ratio material contains only monomer and dimer or, if one assumes the presence of "trimers" etc. in the "mixture," a substantially higher percentage of monomer corresponding to that required to maintain the claimed ratio at 2.52. In view of that, one also might wonder how the seemingly *necessary* presence of *water-soluble* trimethylol phenol in the condensate is consistent with the claim recitation that the condensate product is water *in*soluble. To me it is evident that: (1) accepting appellants' arguments in the brief at face value, their condensate product of 2.5/1 ratio contains no trimethylol phenol monomer whereupon (*a*) claims 2 and 3 necessarily read directly on the tetramethylol derivatives of 2,2'- or 4,4'-dihydroxydiphenylmethane which Martin discloses to be known compounds and (*b*) discussion of Martin's failure to disclose specific inherent properties of those materials is wholly immaterial,[12] or (2) following the lead of appellants' specification, their condensate product necessarily contains a substantial portion of water-soluble trimethylol phenol and does not therefore distinguish over any conventional A-Stage or resole resin.

With respect to process claim 1 the majority seems to rely heavily on the limitation therein that the reactants are cooled to 10° C. while adding sulfuric acid. In view of the fact that (1) most of the references in the record before us disclose that the reactants must be cooled both to arrest condensation and also during neutralization, and (2) the fact appellants' specification attaches no particular significance to that limitation in any of its examples, it seems to me the Board was correct in finding that limitation to be well within the skill of the art. Appellants certainly do not appear to be in a favorable position to argue its criticality. *In re Cole*, 51 CCPA 919, 326 F.2d 769, 140 USPQ 230 (1964).

With respect to the remaining claims, I am satisfied that the Examiner and Board were correct in concluding that particular subject matter is obvious in view of the prior art. I would affirm.

[12] It is pertinent to note, as the Board and Solicitor point out, that appellants have presented no evidence that the prior art products disclosed by Martin do not have the claimed characteristic properties. Appellants' argument in the brief does not take the place of evidence in the record on that score. *In re Cole*, infra.

U.S. Court of Customs and Patent Appeals

IN RE ALFRED AUFHAUSER

No. 7934. Decided July 18, 1968

[55 CCPA 1477; 399 F.2d 275; 158 USPQ 351]

1. PATENTABILITY—OBVIOUSNESS—DISCOVERY OF SOURCE OF PROBLEM—35 U.S.C. 103.

"Since as early as *Eibel Process Co.* v. *Minnesota and Ontario Paper Co.*, 261 U.S. 45, 67 (1923), the concept of 'the invention as a whole' [within the

context of 35 U.S.C. 103] has comprised the total inventive act. That concept includes not only the remedy claimed but also the discovery of the source of persistent trouble despite the teachings of the prior art. See also *In re Antonson*, 47 CCPA 740, 272 F.2d 948, 124 USPQ 132 (1959); *In re Conover*, 49 CCPA 1205, 304 F.2d 680, 134 USPQ 238 (1962)."

2. SAME—SAME—SAME—SAME.

"* * * when considering what * * * constitutes appellant's 'invention as a whole' within the context of 35 U.S.C. 103, we are required to consider first that which appellant discovered as the causes of the trouble which persisted despite the prior art, and then to consider appellant's remedy."

3. SAME—SAME—35 U.S.C. 103.

"The 'judicial treatment' required to determine the § 103 issue begins with an evaluation of that issue as of the time the invention was made."

4. SAME—AFFIDAVIT—PROBLEM IN THE ART—35 U.S.C. 103.

"Thus, the factual existence of the problem which had existed in the art and appellant's solution therefor, is set forth in appellant's specification and is *factually* corroborated by the McCormick and Jones affidavits. These affidavits treat *factually* the failure of those skilled in the art to solve the problem prior to appellant's invention. These *factual* inquiries bear upon the issue of obviousness before us. *Graham* v. *John Deere Co.*, supra. The Examiner and the Board dismissed the McCormick affidavit as presenting but the 'opinion' of one skilled in the art with respect to the application of the prior art. The Jones affidavit fared little better despite its *factual* showing of tests that blends irradiated, as taught by appellant, were more stable in storage and in use than *blends* not so treated. We think it was error to consider these affidavits so narrowly where our clear obligation is to consider all the evidence bearing on the obviousness issue under section 103."

5. PATENTABILITY—INVENTION—APPLICANT NEED NOT COMPREHEND UNDERLYING SCIENTIFIC PRINCIPLES.

"While appellant theorized that his invention produced cross-linking of the irradiated components, he is not legally required to comprehend the scientific principles on which the practical effectiveness of his invention rests. See Robinson on Patents, § 82 (1890)."

6. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—MATTER BEFORE COURT.

"From statements made by the Examiner, the Board and in the Solicitor's brief, it appears that appellant's parent application was involved in Interference No. 90,236. The Examiner had suggested that an estoppel against appellant resulted from the position he took in that interference. However, the Board expressly stated that no issue of estoppel in any sense is here presented. Thus, we have no authority to consider this issue on the present appeal. 35 U.S.C. 144."

7. PATENTABILITY—PARTICULAR SUBJECT MATTER—"APPLICATION OF MELTED WAX-POLYETHYLENE BLEND TO SOLIDS."

The refusal of certain claims in an application entitled "Application of Melted Wax-Polyethylene Blend to Solids," as unpatentable over the prior art, is reversed.

REVERSED.

Kenyon & Kenyon, *Solon B. Kemon* (*Richard K. Parsell*, of counsel) for appellant.

Joseph Schimmel (*Jack E. Armore*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and Judges RICH, SMITH, ALMOND, and KIRKPATRICK [1]

SMITH, *J.*, delivered the opinion of the court.

Appellant's claims were rejected under 35 U.S.C. 103 as being for an obvious invention. Appellant stabilized a wax-polyethylene blend as a coating for paper or other solid substances. He did this by subjecting a particular blend of these components to a specified dosage of

[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

ionizing radiation using high energy electrons, and applying the irradiated blend while melted to the paper or other solid substance.

Determination of this issue requires application of the guidelines which have been set forth by the Supreme Court in a series of controlling decisions. When these guidelines are applied here they require a reversal of the decision of the Board of Appeals [2] which affirmed the Examiner's rejection of appellant's claims.[3]

In *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), we are admonished by the Supreme Court that the "inquiry" required under section 103 "lends itself to several basic factual inquiries." Thus:

> * * * Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the orgin of the subject matter sought to be patented. As indicia of obviousness or nonobviousness, these inquiries may have relevancy. * * *

The Examiner and the Board appear to have failed to make these "several basic factual inquiries" and this failure underlies what we believe to be the essential error in the appealed decision, for as stated in *Graham*, "The inquiry which the Patent Office and the courts must make as to patentability must be beamed with greater intensity on the requirements of Sec. 103."

One aspect of the Sec. 103 inquiry on which the Supreme Court chose to comment with some particularity in *Graham* has unusual pertinency when applied here, i.e., the evidence of the existence of an unsolved problem in the art. The importance of this consideration was underscored by the further observation of the Court in that opinion that consideration of certain "legal inferences" or "subtests":

> * * * may also serve to "guard against slipping into hindsight," *Monroe Auto Equipment Co.* v. *Heckethorn Mfg. & Supply Co.*, 332 F.2d 406, 412, 141 USPQ 549, 555 (1964), *cert. denied* 379 U.S. 888, 143 USPQ 465, and to resist the temptation to read into the prior art the teachings of the invention in issue.

[1] Since at least as early as *Eibel Process Co.* v. *Minnesota and Ontario Paper Co.*, 261 U.S. 45, 67 (1923), the concept of "the invention as a whole" has comprised the total inventive act. That concept includes not only the remedy claimed but also the *discovery* of the source of persistent trouble despite the teachings of the prior art. See also *In re Antonson*, 47 CCPA 740, 272 F.2d 948, 124 USPQ 132 (1959); *In re Conover*, 49 CCPA 1205, 304 F.2d 680, 134 USPQ 238 (1962).

[2] Thus, when considering what here constitutes appellant's "invention as a whole" within the context of 35 U.S.C. 103, we are required to consider first that which appellant discovered as the causes of the trouble which persisted despite the prior art, and then to consider appellant's remedy.

The strength (as well as an apparent weakness) of appellant's case is found in the relatively simple technical difference between his invention and the prior art. On the record, this difference, however, solved a problem then present in this art. This fact focuses our attention on "economic and motivational rather than technical issues"

[2] The board consisted of Messrs. Rosa and Behrens, Examiners-in-Chief, and Stone, Acting Examiner-in-Chief. Mr. Behrens wrote the opinion of the board.

[3] Claims 1, 2, 4, 5, 6 and 8 in application Serial No. 250,025, filed January 8, 1963 entitled "Application of Melted Wax-Polyethylene Blend to Solids." No claims were allowed. The application is denominated a "continuation" of Serial No. 529,960, filed August 22, 1955, now abandoned.

which are "more susceptible to judicial treatment than are the highly technical facts often present in patent litigation." See *Graham*, supra.

[3] The "judicial treatment" required to determine the § 103 issue begins with an evaluation of that issue as of the time the invention was made. As stated in *In re Rothermel*, 47 CCPA 866, 276 F.2d 393, 125 USPQ 328 (1960):

> It is easy now to attribute to this prior art the knowledge which was first made available by appellants and then to assume that it would have been obvious to one having the ordinary skill of the art to make these suggested reconstructions. While such a reconstruction of the art may be an alluring way to rationalize a rejection of claims, it is not the type of rejection which the statute authorizes. 35 U.S.C. 103 is very specific in requiring that a rejection on the grounds the invention "would have been obvious" must be based on a comparison between the prior art and the subject matter as a whole at the time the invention was made.

Our analysis of the rejection starts with a consideration of the teachings of the prior art, for as stated in *Rothermel*, supra:

> Viewed after the event, appellants' invention may appear to be simple and as such obvious to those of ordinary skills in this art. This, however, is not a basis upon which to reject the claims. Where the invention for which a patent is sought solves a problem which persisted in the art, we must look to the problem as well as to its solution if we are to properly appraise what was done and to evaluate it against what would be obvious to one having the ordinary skills of the art. *Eibel Process Co.* v. *Minnesota & Ontario Paper Co.*, 261 U.S. 45; *Goodyear Tire & Rubber Co., Inc.* v. *Ray-O-Vac Co.*, 321 U.S. 275.

The Prior Art and the Problem it Poses

The prior art cited and relied upon by the Examiner and cited by the Board as sustaining the rejection is as follows:

Thwaites et al., 2,698,309, Dec. 28, 1954.
Newberg et al., 2,706,719, Apr. 19, 1955.
Charlesby (1), "Proc. Roy. Soc." (London), vol. 222A, Feb. 23, 1954, pp. 60–74.
Charlesby (2), "Nucleonics," June 1954, pp. 18–25.
Sun, "Modern Plastics," vol. 32, September 1954, pp. 141–4, 146, 148, 150, 229–233, 236–7.
Martin, "Chemical and Engineering News," vol. 33, April 1955, pp. 1424–1428.

The Board affirmed the specific rejection by the Examiner based "solely upon unpatentability over Thwaites et al. or Newberg et al. each in view of Charles by (1) and (2)." [4]

Thwaites and Newberg each discloses the use of blends of wax and polyethylene which when melted could be applied to paper and cartons. Neither Thwaites nor Newberg discloses irradiation of such blends.

Charlesby (1) discloses the effects of irradiation of paraffins and other hydrocarbon waxes while Charlesby (2) discloses the irradiation of polyethylene.

The record [5] establishes that the use of *blends* of wax and polyethylene, as disclosed by Thwaites or Newberg, was accompanied by problems arising from the separation of the components in the blend. The art does not discuss this problem nor offer a solution to it. While Charlesby (1) and Charlesby (2) were relied upon by the Examiner

[4] The Sun and Martin publications were cited by the Examiner for the teachings of the equivalency of various types of high energy ionizing radiation in terms of results effected in polymerization and crosslinking reactions. That issue is no longer actively pursued here so further comment on these references is unnecessary.

[5] In addition to the application, the record includes the separate affidavits of McCormick and Jones as persons of skill in this art.

and the Board as making appellant's invention obvious, the fact is neither of these references is addressed to a solution for the problem of component separation in the Thwaites and Newberg prior art blends of polyethylene and wax.

Appellant's solution to that problem was to treat a *mixture* or *blend* of a hydrocarbon wax and polyethylene of stated proportions with gamma rays or the like, under controlled conditions of irradiation such that the mixture or blend will remain homogeneous during storage of the blended materials as well as when melted for use in machines for coating paper used in the manufacture of milk cartons, paper cups and the like.

Thus, according to the invention here claimed, the practical problems arising from separation of the components in the Thwaites or Newberg prior art wax-polyethylene blends were overcome by subjecting a wax-polyethylene blend containing from 2% to 25% of normally solid polyethylene and wax having a softening point between 130° F. and 200° F. to a dosage of from about 2 to about 200 megarads [6] of ionizing radiation using high energy electrons and applying the resultant irradiated blend to the paper or other solid supporting substance in a fluid condition at a temperature above the melting point of the blend.[7]

The Claims

The rejected claims, of which claims 5 and 8 have been selected as representative, are as follows:

> 5. In the production of a blend of a hydrocarbon wax and solid polyethylene adapted for use in a process wherein the blend is applied to a solid substance by contacting said substance with said blend while said blend is at a temperature above the melting point of the blend, said hydrocarbon wax having a melting point between about 130° F. and about 200° F. and said polyethylene constituting from about 2% to about 25% by weight of the blend, the improvement which comprises improving the compatibility and homogeneity of said blend for said use by subjecting said blend to about 2 to about 200 megarads of irradiation with high energy electrons.
>
> 8. A method of coating paper with a blend of hydrocarbon wax and solid polyethylene which comprises subjecting a blend of solid polyethylene and hydrocarbon wax having a melting point between about 130° F. and about 200° F., said polyethylene constituting from about 2% to about 25% by weight of said blend, to ionizing radiation with high energy electrons, the dosage being from about 2 to about 200 megarads whereby resistance of the blend to separating out of the polyethylene component of the blend is improved, thereafter applying the blend to a surface of said paper to coat said surface while said blend is at a temperature above its melting point, and cooling the resulting coating to a temperature below said melting point of said blend.

[6] As explained in appellant's specification: "• • • The dosages may vary widely, say, from 2 to 200 megarads. A rad is the energy represented by 100 ergs per gram of composition and the megarad is equal to 1,000,000 rads. The preferred dosage is 60 to 90 megarads."

[7] According to McCormick, the stabilizing effect on such blends as reported by appellant was not "predictable." His affidavit states:

> Mr. Aufhauser found that the phenomena that take place as a result of irradiating a blend of polyethylene with paraffinic wax, or with a mixture of paraffinic wax and microcrystalline wax, result in the greatly enhanced stability and homogeneity of the blend at temperatures above the melting point of the blend. So far as I am aware, this effect of irradiation was not ascertained by others not only as of the filing date of the Aufhauser application but also down to date.
>
> Such stabilizing effect on the melted blend is something that I do not regard as predictable. However, viewed after the accomplished fact, it is believed that the stabilizing effect disclosed in the Aufhauser application may be explained as resulting, at least in part, from imparting enhanced activity to the polyethylene micelles which tends to keep the polyethylene micelles in a state of suspension rather than agglomerating and settling out. It also is believed that the enhanced stability set forth in the Aufhauser application may be due in part to there being some coupling of the hydrocarbon wax principally with the lower molecular weight polymers contained in the polyethylene that is used, this coupling serving to decrease the overall differential as regards molecular weights with the development of a resultant increased intersolubility between the components which have become coupled and the polyethylene polymers that have not.

Claims 1, 2 and 4 set out, in Jepson form, the production of the blend as in claim 5 describing a process wherein the blend is applied to a solid substance. Claim 6 is directed to paper coated with the blend formed as in claim 5, while claim 8 recites a method of coating paper with the blend formed by the process described in claim 5.

We have considered the references in detail in seeking to ascertain whether the art at the time of appellant's invention had addressed itself to the problem which appellant asserts was present, and which the affidavits of McCormick and Jones state as a fact, was an existing practical problem in the art which was solved by appellant's invention. The prior art teachings, when weighed with the positive factual assertions in appellant's application and in the affidavits of McCormick and Jones, convince us that there was at the time of appellant's invention an existing problem due to separation of the wax and polyethylene components in the *blends* thereof which were then in use in this art.

The Rejection

The position of the Examiner restated in summary in his answer on appeal was:

> Claims 1, 2, 4, 5, 6 and 8 are rejected as obvious under 35 U.S.C. 103 in view of Thwaites et al. or Newberg et al., each taken with Charlesby (1) and (2). Each primary reference discloses the procedure for applying molten wax-polyethylene blends to paper and cartons. Charlesby (1) discloses the crosslinking effected by atomic pile irradiation of paraffinic waxes and Charlesby (2) discloses the crosslinking and flexibility effected by atomic pile irradiation of polyethylene. It would be obvious to subject the blends of Thwaites et al. and Newberg et al. to irradiation in view of the combined teachings of the Charlesby (1) and (2) references as the alleged advantages are such as would flow naturally from the teachings of the prior art. • • •

The Board, in affirming, added:

> Appellant, despite the affidavits submitted, does not supply any evidence that shows that the blend in question, when cross-linked by "high energy electrons," is of any different character, or would have been expected to be of a different character from the blend irradiated with sources of ionizing radiation such as those used by Charlesby. Appellant, indeed, recognized that appellant's emphasized results are achieved with gamma rays or radiation from an atomic pile. Charlesby realized increased polyethylene flexibility by irradiation "usually" in a reactor, or with a cobalt-60 isotope but stated that linear accelerators and X-ray machines "have also been used."
>
> • • • Paraffin wax and the higher molecular weight polyethylenes, after all, differ in molecular weight but the prior art recognized that both could be cross-linked by irradiation. (The instant claims, indeed, are not limited to paraffin wax and a "hydrocarbon wax" may be a polyethylene wax.) There was a reasonable expectation that the hydrocarbons of different molecular weight would cross-link with each other because Charlesby stated that molecules of different sizes take part in the cross-linking although the longer molecules have a greater opportunity for linkage.

Opinion

While, as above pointed out, wax-polyethylene blends were known to the art, and while it was also known to the art that *wax* or *polyethylene* could be irradiated individually, the specific issue before us is whether irradiating a *blend* of wax and polyethylene, as taught by appellant, for the purpose of preventing separation of the wax and polyethylene components was obvious from the disclosures of the prior art. The fundamental error of the Board and the Examiner seems to us to have arisen from their analysis of the art as if it contained the

knowledge of appellant's invention. In other words, they proceeded to combine the prior art as if appellant's invention was included therein as a part of the knowledge possessed by one of ordinary skill in the art. Such an analysis does not comport with that required by *Graham* v. *John Deere Co.*, supra.

Instead, here as in *U.S.* v. *Adams*, 383 U.S. 39, 148 USPQ 479 (1966), what appellant had done was to *observe* an existing problem in the art which had not been solved by the prior art and then to *combine* individually old concepts to solve that problem.[8]

Much of the factual material relied upon in our analysis is found in the McCormick and Jones affidavits on behalf of appellant. The Solicitor has cited *In re Umbricht*, 52 CCPA 1586, 347 F.2d 882, 146 USPQ 214 (1965), as authority for disregarding the McCormick and Jones affidavits. His brief states the position:

> • • • Further, the affiant's opinion as to unobviousness has no bearing on the point that enhanced stability is inherent in the use of high energy irradiation. Moreover, the opinion inadequately supported by any substantial evidence, "provides no factual bases to refute the [Board's] legal conclusion of obviousness" • • •

As we shall point out, the affidavits here, as distinguished from the opinion affidavit in the *Umbricht* case, provide *factual* bases which clearly must be considered under the *Graham* case.

The McCormick and Jones affidavits, while containing expressions of opinion, also provide cogent factual evidence of what the Supreme Court in *Graham* termed the "secondary considerations" bearing on a proper resolution of the section 103 issue. The *facts* as stated in these affidavits support the factual statements in appellant's application and require resolution of the 103 issue in favor of appellant.

The McCormick affidavit is that of one who is skilled in the relevant art. He states as a *fact* that the prior art had tried to blend a small amount of polyethylene with a hydrocarbon wax. This *fact* is further evidenced by the disclosure of the Newberg patent. McCormick notes that one of the technical problems encountered in such polyethylene-wax blends arose from the *fact* that the molecular weight of polyethylene in the blend is higher than that of either paraffinic or microcrystalline wax. Appellant's specification also points out as a *fact* that the waxes generally have molecular weights of about 360 to 700 while the polyethylene used generally has molecular weights ranging between from about 5,000 to 20,000. As a result of this disparity between the molecular weights of the wax and polyethylene components of the blend, McCormick states as a *fact* that there is a tendency for the polyethylene micelles to agglomerate and separate out of the blend, pointing out that the higher molecular weight fractions contained in the polyethylene separate out first. In these blends, as McCormick points out, the hydrocarbon wax acts as a solvent for the polyethylene.

The McCormick affidavit also mentions as a *fact* a number of problems presented to the art by the tendency of the polyethylene to separate from the blend. Some of these are: storage problems, particularly with respect to temperature; the tendency of the polyethylene micelles to stratify during storage; and the resultant unsatisfactory operation of the coating machines when operated with such blends.

[8] Since no rejection was made for want of novelty under section 102, we have proceeded on the assumption that appellant's invention was novel, i.e., what he disclosed had not been done before.

One approach of the prior art to the solution of these problems, McCormick points out, was to experiment with the production of polyethylene as regards its molecular weight, its molecular weight range, and its melt index to make it more nearly compatible with the wax component. As McCormick stated:

> * * * Moreover, experimentation was carried out as regards the quantity of the polyethylene used in the blend and further research involved experimentation in connection with the techniques of blending, handling, packaging and shipping as well as the techniques used in the coating operation and the kind and quality of paper stock employed. * * * Attempts to employ chemical cross linking agents were unfruitful and this likewise was the case in connection with attempts to treat the wax or the polyethylene, or both, so as to reduce the falling out tendency of the polyethylene from the wax-polyethylene blends under operating and storage conditions consistent with safe handling.

The McCormick affidavit points out several beneficial results flowing from Aufhauser's invention: lower temperatures could be used for storage and in the coating operation; improved viscosity characteristics (supported by an exhibit) resulted; improved compatibility and homogeneity of blends of hydrocarbon wax and polyethylene; and saving of expense in its production and use.

The practical effect of appellant's invention is described in the Jones affidavit which describes *factually* the problem presented by the tendency of polyethylene to seed out and the elaborate facilities that had been resorted to by both compounders and users in order to minimize such seeding out. It also contains data showing the effectiveness of irradation of the blends according to the invention of the appealed claims in preventing the seeding out of polyethylene from wax-polyethylene blends both during storage and when melted for use on coating machines.

[4] Thus, the factual existence of the problem which had existed in the art and appellant's solution therefor, is set forth in appellant's specification and is *factually* corroborated by the McCormick and Jones affidavits. These affidavits treat *factually* the failure of those skilled in the art to solve the problem prior to appellant's invention. These *factual* inquiries bear upon the issue of obviousness before us. *Graham* v. *John Deere Co.*, supra. The Examiner and the Board dismissed the McCormick affidavit as presenting but the "opinion" of one skilled in the art with respect to the application of the prior art. The Jones affidavit fared little better despite its *factual* showing of tests that blends irradiated, as taught by appellant, were more stable in storage and in use than *blends* not so treated. We think it was error to consider these affidavits so narrowly where our clear obligation is to consider all the evidence bearing on the obviousness issue under section 103.

We also think it significant that the Charlesby (1) and (2) references dealing with irradiation are concerned only with the irradiation of single substances (not blends) in carrying out specific studies directed to the effect of such irradiation on the melting point and solubility of each *single* substance.[9]

From our analysis of these references, we agree with the statement in appellant's brief that the multiple effects of irradiation on bombarded materials are too complex and uncertain "to resolve the deficiences of the prior art compared to appellant's teaching."

[9] While Martin deals with the irradiation of a mixture, the reference is primarily concerned with the initiation of a chemical reaction. It was not relied upon for the point below; we shall not so consider it here.

The Solicitor's contention in support of the position of the Board is that:

> * * * If the art would thus have reasonable grounds for expecting the components to be substantially molecularly joined by cross-linking upon irradiating the blend, it would appear that the stabilization inherently and expectedly flows from that operation especially since the only probable explanation offered in the appellant's disclosure for the stabilization effected by irradiation is that "the ingredients form cross linkages so that they are intimately associated" * * *. The appellant also indicates in his application that "greater flexibility" is a valuable result of the irradiation * * *. Thus, the appellant's "concept" represents an obvious method step to achieve no more than what would have been normally expected by one skilled in the art.

[5] While appellant theorized that his invention produced cross-linking of the irradiated components, he is not legally required to comprehend the scientific principles on which the practical effectiveness of his invention rests. See Robinson on Patents, § 82 (1890).

We reject the Solicitor's position since the suggestion and teaching which the Solicitor relies upon has its origin in appellant's teachings. There is no showing here that appellant's invention was known to the art when he made it. Such hindsight reconstruction of the art does not support a rejection under 35 U.C.S. 103.

From the foregoing, we conclude that the differences between appellant's claimed invention and the prior art are such that the invention, *when considered as a whole* and *at the time it was made*, would not have been obvious under 35 U.S.C. 103.

[6] From statements made by the Examiner, the Board and in the Solicitor's brief, it appears that appellant's parent application was involved in Interference No. 90,236. The Examiner had suggested that an estoppel against appellant resulted from the position he took in that interference. However, the Board expressly stated that no issue of estoppel in any sense is here presented. Thus, we have no authority to consider this issue on the present appeal. 35 U.S.C. 144.

[7] The decision of the Board is reversed.

REVERSED.

U.S. Court of Customs and Patent Appeals

GENERAL TIME CORPORATION *v.* DUNBAR FURNITURE CORPORATION

No. 8003. Decided November 14, 1968

[56 CCPA —; 402 F.2d 806; 159 USPQ 536]

1. TRADEMARK—CONFUSING SIMILARITY—LANHAM ACT.

   "Since the enactment of the Lanham Act, as amended, the test * * * has not necessarily been *confusing similarity* of the goods, but rather whether it is 'likely' that the mark in controversy, when applied to applicant's goods, will cause confusion or mistake or deceive purchasers."

2. SAME—SAME—"DUNBAR" FOR CLOCKS AND FURNITURE.

   "We are of the opinion * * * that persons familiar with opposer's Dunbar furniture, upon encountering appellant's Dunbar clocks, might well suppose that such clocks emanate from, or are sponsored by, opposer."

3. SAME—GOODS—BROAD DESIGNATION OF GOODS IN APPLICATION.

   "Inasmuch as appellant's application of record herein is for the registration of Dunbar for 'clocks,' no justiciable issue is before us as to the likelihood of confusion of that trademark as applied to 'plastic-cased alarm clocks.'"

APPEAL from Patent Office. Opposition No. 43,660.

AFFIRMED.

Lewis S. Garner, Wolfe, Hubbard, Voit & Osann (*H. H. Hulse*, of counsel) for appellant.

Robert G. Irish, Hood, Gust & Irish for appellee.

Before WORLEY, *Chief Judge*, RICH, SMITH, ALMOND, and BALDWIN, *Associate Judges*

BALDWIN, *J.*, delivered the opinion of the court.

This is an appeal from the decision of the Trademark Trial and Appeal Board sustaining an opposition by Dunbar Furniture Corporation to General Time Corporation's application [1] to register the trademark Dunbar, for goods described as "clocks," asserting use since January 1946. Appellee, Dunbar Furniture Corporation, opposed on the ground of likelihood of confusion, based upon its company name and its registered trademark Dunbar, both used since approximately 1922, for furniture.

Opposer has continuously used the surname Dunbar as a trademark in connection with the nationwide sale of furniture and of its manufacture, including contemporary styled upholstered living room furniture, wooden dining room and bedroom furniture, and executive type office furniture.

The applicant manufactures and sells a wide variety of electric and battery operated clocks, including alarm clocks, wall clocks, occasional clocks, and grandfather clocks. These clocks are usually retailed through electrical appliance, drug, variety, and jewelry stores, and through appliance or hardware departments of department stores. Applicant's Dunbar clocks have been advertised in newspapers and in a wide variety of consumer magazines. The opposer's furniture has been extensively promoted, under the mark Dunbar, through advertisements in furniture trade publications and national consumer magazines.

In its decision, the Board pointed out that:

> The record further shows that decorator type clocks are customarily sold and displayed together with furniture in department stores, furniture stores and interior decorating studios; that advertisements and articles appearing in consumers type magazines devoted largely to home furnishings illustrate upholstered and wooden furniture in combination with clocks of one kind or another, including alarm clocks; and that two manufacturers of furniture also manufacture decorator type clocks, and one thereof uses the same mark for both products.

Appellant argues that furniture and clocks are so dissimilar that confusion is not likely. We do not agree on the basis of the record before us. As stated in the decision of the Board:

> • • • it is abundantly clear from the record in this case that most, if not all, of the clocks manufactured by applicant's Westclox Division, including its "Dunbar" alarm clocks, are specifically designed and intended to harmonize with or to complement the furnishings in a home. And, of particular interest in this regard, is a magazine edited by applicant's Westclox Division in collaboration with Good Housekeeping magazine and entitled "Clocks in Home Decoration."

[1] Since the enactment of the Lanham Act, as amended, the test in cases such as this has not necessarily been *confusing similarity* of the goods, but rather whether it is "likely" that the mark in controversy, when applied to applicant's goods, will cause confusion or mistake or deceive purchasers.

Appellant's principal argument is that:

> • • • the mere fact that two products are advertised to harmonize together in interior decoration, and are thus shown together in some advertisements or store displays, is not enough in and of itself to compel the conclusion that confusion of source is likely, when the products are as dissimilar as furniture and clocks. This is important because this is the *sole* basis of the Board's finding of likelihood of confusion.

Although the Board may have dwelled at length upon the harmonization factor in its opinion, the opinion implies that the decision was not based *entirely* on that one factor as appellant argues here. The Board indicates that the harmonization factor is important in the context of appellant's arguments below concerning the unlikelihood of appellant's plastic-cased alarm clocks being displayed or sold with furniture, and in this we agree. [2] We are of the opinion, however, that the record as a whole, supports the Board's conclusion that persons familiar with opposer's Dunbar furniture, upon encountering appellant's Dunbar clocks, might well suppose that such clocks emanate from, or are sponsored by, opposer.

[3] Inasmuch as appellant's application of record herein is for the registration of Dunbar for "clocks," no justiciable issue is before us as to the likelihood of confusion of that trademark as applied to "plastic-cased alarm clocks."

The decision of the Trademark Trial and Appeal Board is affirmed.

AFFIRMED.

[1] Application Serial No. 139,088, filed March 5, 1962.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

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2,641,215, R. S. Danforth, ANCHORS, filed Sept. 30, 1968, D.C., N.D. Calif. (San Francisco), Doc. 50066, *The Eastern Company* v. *West Coast Wire Rope & Rigging Inc.* Consent judgment entered in favor of the plaintiff; defendants enjoined; plaintiff's patent valid, Jan. 24, 1969.

2,699,054, L. H. Conover, TETRACYCLINE, filed Nov. 12, 1963, D.C.N.J. (Newark), Doc. C–936–63, *Chas. Pfizer & Co., Inc.* v. *Zenith Laboratories, Inc.* and *Continental Vitamins.* Transferred to Southern District of New York on Oct. 25, 1968.

2,715,231, O. F. Marston, FLEXIBLE BUOYANT ARTICLE, filed Dec. 6, 1968, D.C., E.D. Va. (Richmond), Doc. 6076–R, *Oliver F. Marston* v. *Kurz GmbH of West Germany and British Industrial Hardware Company, Ltd.*

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3,135,269, E. E. Pauldine, CURLING IRON HAVING DETACHABLE CURLING TUBE; **3,173,429**, same, HEATING ROD AND HAIR CURLER TUBE FOR MOUNTING THEREON, filed Oct. 17, 1966, D.C., N.D. Ill. (Chicago), Doc. 66c1876, *Eugene E. Pauldine* v. *Northern Electric Company.* By stipulation and order complaint and counterclaim dismissed without prejudice, Sept. 6, 1968.

3,173,429. (See 3,135,269.)

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3,191,412, C. E. Duvall, PRESS BRAKE CONTROL, filed Dec. 16, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c2409, *Clarence E. Duvall* v. *Pullman Sheet Metal Works, Inc.*

3,192,546, W. B. Noland, SELF-LOCKING DOCK PLATE, filed Feb. 12, 1969, D.C., W.D. Mich. (Kalamazoo), Doc. CA–137, *Woodford Manufacturing Company, Inc.* v. *T & S Equipment Company, Inc.*

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3,208,405, R. Beer, METHOD OF MAKING A CHEWING CANDY, filed Aug. 22, 1966, D.C.N.J. (Newark), Doc. 843–66, *International Food Patent N.V.* v. *Charms Company.* Stipulation of discontinuance, Jan. 13, 1969.

3,210,767, D. W. Isbell, FREQUENCY INDEPENDENT UNIDIRECTIONAL ANTENNAS, filed May 2, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c730, *University of Illinois Foundation* v. *Gavin Instruments, Inc.* Cause stricken from the calendar without prejudice, Oct. 3, 1968.

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3,222,204, Weber and Tomlinson, PROCESS OF MAKING BEADED COATINGS AND FILMS FROM GLASS BEADS TREATED WITH OLEOPHOBIC SIZING AGENT, filed Oct. 31, 1968, D.C., Minn. (St. Paul), Doc. 3–68–C–281, *Cataphote Corporation* v. *Minnesota Mining & Manufacturing Co.* Notice of dismissal, Feb. 19, 1969.

3,240,460, W. D. Petersen, FURNITURE SHEATH, filed June 1, 1966, D.C., N.D. Ill. (Chicago), Doc. 66c975, *Schlumberger Limited* v. *Douglas Furniture Corporation.* By agreement order suit is dismissed with prejudice, Oct. 24, 1967.

3,241,255, M. S. Hanley, TICKET ASSEMBLY, filed Jan. 27, 1969, D.C., N.D. Ohio (Cleveland), Doc. C69–60, *Sherburne Corporation* v. *Ohio Spring Specialties, Inc.*

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3,263,757, P. G. Kaster, PLOW DRAWN HARROW HITCH, filed Jan. 18, 1968, D.C., E.D. Wis. (Milwaukee), Doc. 68–C–12, *Paul G. Kaster* v. *Kastern Mfg. Corp.* Defendant enjoined, case dismissed, Jan. 22, 1968.

3,266,384, D. Scaramucci, WELL SWAB ASSEMBLY; **3,266,386**, same, SWAB CUP, filed Sept. 19, 1966, D.C., W.D. Okla. (Oklahoma City), Doc. 66–347, *Domer Scaramucci and William A. Moore* v. *Dresser Industries, Inc.* Plaintiff has title to patents. Defendant has not infringed, complaint dismissed with prejudice. Defendant's counterclaim for infringement dismissed with prejudice, Jan. 30, 1969.

3,266,386. (See 3,266,384.)

3,271,498, Rohe and Phelan, METHOD OF INSTALLATION OF MOLDABLE INSERT IN SANDWICH PANEL; **3,282,015**, same, MOLDABLE INSERT FASTENER WITH DUAL POTTING PORTS IN HEAD; **3,292,225**, C. S. Phelan, METHOD FOR INSTALLING MOLDED-IN INSERTS IN SANDWICH PANELS, filed Feb. 11, 1969, D.C., C.D. Calif. (Los Angeles), Doc. 69–265–PH, *Shur-Lok Corporation* v. *The Young Engineers, Inc., Nilo Young and C. Milo Young.*

3,271,774, R. Justice, CATENARY SUPPORTED LOG PERIODIC ANTENNA, filed Dec. 10, 1968, D.C., N.D. Calif. (San Francisco), Doc. 50453, *Granger Associates, Inc.* v. *Technology for Communications International, Inc.*

3,277,881, A. G. Burns, COMBINED TABLE FOR COOKING AND EATING, filed June 11, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1066, *Arthur G. Burns* v. *Benihana Chicago Corporation.* Complaint and counterclaim dismissed per stipulation, Jan. 15, 1969.

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3,310,824, C. C. Beer, VEHICLE WASHER, filed July 11, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c1195, *Sherman Car Wash Equipment Company* v. *Auto Laundry Equipment Sales Co., Inc.* Voluntary dismissal without prejudice, Mar. 8, 1968. Same, filed July 11, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c1196, *Sherman Car Wash Equipment Company* v. *John Kamyes doing business as Des Plaines Car Wash.* Voluntary dismissal without prejudice, Mar. 8, 1968.

3,327,745, Meece and Dew, TREE CUTTER DEVICE, filed Oct. 11, 1968, D.C., S.D. Ga. (Swainsboro), Doc. 467, *Harrington Manufacturing Company, Inc.* v. *Fulghum Enterprises, Inc.*

3,328,824, R. E. Chalfant, BROOM AND HANDLE ATTACHING MEANS THEREFOR, filed Feb. 12, 1969, D.C., W.D. La. (Shreveport), Doc. 14434–A, *Raymond E. Chalfant* v. *Josiah C. Hayes, and Plas-Tex Molders, Inc. and All-America Mfg. Co.*

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3,341,955, Pyke and Pyke, PRODUCING WRINKLE-FREE, PERMANENTLY CREASED GARMENTS, filed Dec. 12, 1968, D.C., Ala. (Montgomery), Doc. 975–S, *Everprest, Inc.* v. *Phillips-Van Heusen.*

3,344,321, W. G. Buhler, ELECTROSTATIC POWDER SPRAYER, filed Dec. 9, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c2360, *Oxy-Dry Sprayer Corporation* v. *Electro Sprayer Systems, Inc.*

3,349,645, E. R. Silvey, SAW CHAIN GRINDING MACHINE, filed Jan. 23, 1969, D.C., Oreg. (Portland), Doc. 69–41, *Katherome A. Silvey and Elmer R. Silvey* v. *Floyd A. Arneson.*

3,374,304, R. E. Ayres, METHOD FOR INJECTION MOLDING, filed Feb. 10, 1969, D.C., Oreg. (Portland), Doc. 69–71, *Richard E. Ayres* v. *Sylvanus R. Hunt, doing business as Snively Wedge Co.*

3,292,225. (See 3,271,498.)

Re. 24,600, H. Ziff, INSULATED BAG, filed Feb. 8, 1968, D.C., E.D. Mich. (Detroit), Doc. 30847, *Henry Ziff* v. *Montgomery Ward & Co. and Hankscraft Company.* Consent judgment without costs, Jan. 22, 1969.

Re. 26,135, J. R. Whitehurst, MEANS FOR FEEDING SLIVERS TO COILERS, filed Nov. 22, 1967, D.C., W.D.N.C. (Charlotte), Doc. 2303, *Ideal Industries, Inc.* v. *Whitin Machine Works, Inc.* Consent order dismissing complaint and counterclaim without prejudice, Jan. 31, 1969.

D. 202,783, R. D. Kahn, FUSED MULTIPLE ELECTRICAL OUTLET BOX WITH MASTER SWITCH AND PILOT LIGHT, filed Dec. 26, 1966, D.C.N.J. (Newark), Doc. C–1275–66, *Pedtro, Inc.* v. *AMD Electronics, Inc.* Order of dismissal, Dec. 27, 1966.

DEFENSIVE PUBLICATIONS

PUBLISHED MAY 27, 1969

Published at the request of the applicant or owner in accordance with Notice of Apr. 11, 1968, 849 O.G. 1221. The abstracts are identified by serial number of the applications and arranged in chronological order. The heading of each abstract of application published herein indicates the number of pages of specification, including claims and sheets of drawing contained in the application as originally filed. The files of these applications are available to the public for inspection and reproduction may be purchased for 30 cents a sheet.

Applications published under the Defensive Publication Program have not been examined as to the merits of alleged invention. The Patent Office makes no assertion as to the novelty of the disclosed subject matter.

782,001
COATING PROCESS

Richard L. Wagner, Wilmington, Del., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware
Continuation of application Ser. No. 513,120, Dec. 10, 1965. This application Dec. 6, 1968. Published May 27, 1969
Int. Cl. B29c *1/14;* B29h *8/00;* B32b *27/00*
U.S. Cl. 264—129
No Drawing. 15 Pages Specification

This disclosure relates to a process for improving the adhesion of organic coatings to plastic articles. A microscopic surface roughness is replicated onto the surface of a plastic by molding the plastic in a metal mold the surface of which has been microscopically roughened. The roughened surface of the resulting molded plastic is then coated with an organic coatings system. The disclosed process results in excellent adhesion of various organic coatings systems to plastic surfaces to which they may not otherwise be adherent.

641,340
PHENOLSULFONATES AS A FILLER IN ANIONIC DETERGENT BARS

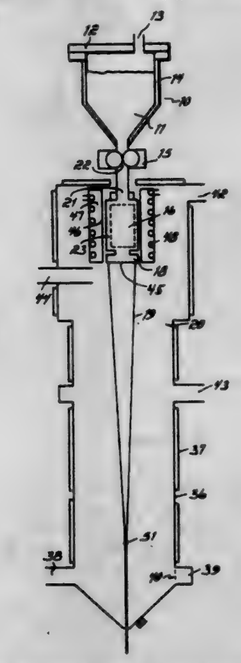
Robert O. Miller and Leonard A. Mattano, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed May 25, 1967. Published May 27, 1969
Int. Cl. C11d *9/32, 1/16, 3/34*
U.S. Cl. 252—121
No Drawing. 9 Pages Specification

Water-soluble phenolsulfonates are effective fillers for toilet bars containing natural and synthetic anionic detergents. As a filler they have improved compatability with the anionic detergent and other ingredients of a commercial bar without diminishing the characteristic lather and feel. The phenolsulfonates in the form of their alkali metal or ammonium salts may be used as fillers for toilet bars containing such anionic detergents as: fatty acid soaps, C_8–C_{22} alkyl sulfates, C_8–C_{16} alkylbenzene sulfonates, sulfonates of alkylphenol-ethylene oxide condensates, fatty acid esters of N-methyl taurine, acyl isethionates and alkyl glyceral ether sulfonates.

802,748
PROCESS FOR MANUFACTURING SPANDEX TYPE YARN

Emmett V. Martin and Colquitt H. Chapman, both of P.O. Box 511, Kingsport, Tenn. 37662
Continuation of application Ser. No. 656,716, July 28, 1967. This application Feb. 17, 1969. Published May 27, 1969
Int. Cl. D01d *5/12;* D01f *7/06;* D02g *3/32*
U.S. Cl. 264—205
2 Sheets Drawing. 29 Pages Specification

A process is disclosed for manufacturing spandex yarn which includes extruding a spinning dope of segmented elastomer through a spinneret plate having a plurality of orifices having a length to diameter ratio of 5 to 200, causing an air stream, preferably at a temperature of from 25° C. to 150° C., to flow across the face of the spinneret plate as the dope is extruded therethrough, and then curing the bundle of filaments thereby obtained by contacting the bundle with a hot gaseous medium which may be at a temperature of from 150° C. to 300° C. The bundle of filaments also may be coalesced into a multifilament yarn and may be heat treated at a temperature of from 50° C. to 250° C., preferably 120° C. to



180° C., at an exposure time of 0.02 second to 24 hours, preferably 0.1 second to 1 minute, while stretching said yarn from about 1.1 to about 6.0 times, preferably 1.25 to 4.50 times. The spandex yarn properties may be improved by exposing it to a water medium, for example, a controlled atmosphere between about 40% and about 75% relative humidity at a temperature between about 20° C. and about 75° C.

776,311
METHOD OF PREVENTING REARRANGEMENT OF BLOCKED COPOLYESTERS

James G. Smith, Charles J. Kibler, and Roger M. Schulken, Jr., all of P.O. Box 511, Kingsport, Tenn. 37662
Continuation of application Ser. No. 678,457, Oct. 26, 1967. This application Nov. 13, 1968. Published May 27, 1969
Int. Cl. C08g *17/06, 51/56*
U.S. Cl. 260—75
5 Sheets Drawing. 36 Pages Specification

Block copolyesters prepared from (A) at least one

glycol and (B) at least one dibasic acid comprising at least 60 mole percent of an acid having two carboxyl radicals attached to a carbocyclic nucleus having from 6–20 carbons per ring, in which copolyesters at least three components are present, one of which can be present as an isomer of one of the other two components, said copolyester if one of the fiber- and film-forming type, having a number average molecular weight between about 8,000 to about 100,000, are treated in the powdered form with steam at a high temperature from the range of from about 100° C. to about 200° C. for a period ranging from ¼ hour to 20 hours whereby the block-type structure is stabilized. In the alternative such block copolyesters are treated with from about 0.005 to 0.5% by weight of an arsenic compound, e.g. arsenic pentoxide. Either alternative method results in a block copolyester having a stabilized form which resists randomization probably because the catalyst has been converted into an inactive form.

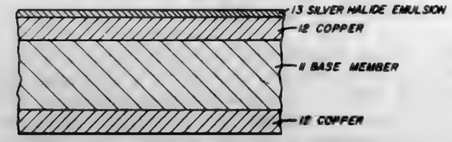
767,845
UNSATURATED, CURABLE POLYESTERS CONTAINING AROMATIC SULFONATE SALT GROUPS
John R. Caldwell, P.O. Box 511, Kingsport, Tenn. 37662
Filed Oct. 15, 1968. Published May 27, 1969
Int. Cl. C08g *17/13*
U.S. Cl. 260—49
No Drawing. 12 Pages Specification

Curable polyesters of (A) a glycol, (B) an unsaturated dicarboxylic acid of 4 carbon atoms, and (C) a compound having the structure:

$$R-Z-R'$$
$$|$$
$$(SO_3M)_n$$

wherein Z is an aromatic ring, R is a group capable of forming an ester linkage, R′ is R or H, M is a metallic element, and n is a number having a value of 1 or 2, are useful as anti-static finishes for polyester fibers and films and for improving the basic-dyeability of said fibers and films.

783,313
PRINTING PLATE ELEMENT
Thomas I. Abbott, % Kodak Park Division, Rochester, N.Y. 14650
Filed Dec. 12, 1968. Published May 27, 1969
Int. Cl. G03c *1/36, 5/30*; G03f *7/06*
U.S. Cl. 96—36.3
1 Sheet Drawing. 10 Pages Specification



A stable, presensitized printing plate comprises a colloid layer presensitized with silver halide on a metal plate having a copper or copper-containing surface. The light sensitive layer is desensitized against non-selective development by migrating copper ions by a densensitizer such as benzotriazole, ethylene diamine tetraacetic acid and others.

789,377
PHOTOGRAPHIC DEVELOPER AND PROCESS
William E. Lee, % Kodak Park Division, Rochester, N.Y. 14650
Filed Jan. 6, 1969. Published May 27, 1969
Int. Cl. G03c *5/30*
U.S. Cl. 96—66
No Drawing. 14 Pages Specification

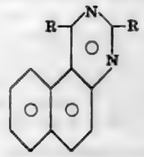
A photographic developer for high contrast elements comprises an alkaline development activator, a silver halide developing agent, sulfite ions and a sulfite ion buffer, which is a complex of sulfite ions with a trinitroaryl compound, such as 2,4,6-trinitrobenzoic acid, the complex having an absorption peak between about 450 and 600 millimicrons. A suitable developer is a lith developer, for example, which is an aqueous alkaline solution containing a silver halide developing agent, such as hydroquinone; sulfite ions, such as from sodium sulfite and sodium bisulfite; and 2,4,6-trinitrobenzoic acid, the trinitrobenzoic acid and sulfite compounds forming a complex in situ which is a sulfite ion buffer in the developer. This can be used in a process, such as a continuous process, for developing images in an exposed photographic element, such as a photographic element employed in the graphic arts.

793,188
DETERGENT COMPOSITION AND METHOD OF USING THE SAME
Paul Sosis, 14—01 Hopper Ave., Fairlawn, N.J. 07410, and Joseph G. Conte, 20 Saddlewood Drive, Parsippany, N.J. 07054
Filed Jan. 22, 1969. Published May 27, 1969
Int. Cl. C11d *1/14, 3/04*
U.S. Cl. 252—161
No Drawing. 9 Pages Specification

Incorporation of at least 25 parts per million of a divalent heavy metal ion into heavy duty detergent compositions formulated from mixtures of alkali metal straight-chain primary alkyl sulfates, alkali metal linear alkyl aryl sulfonates and detergency builders produces a detergent composition exhibiting low foam characteristics which also possesses excellent soil removal properties. The divalent heavy metal ions are preferably in the form of the alkaline earth metal halide salts.

794,405
DERIVATIVES OF BENZO[f]QUINAZOLINE AS ANTIFOGGANTS FOR PHOTOGRAPHIC MATERIALS
Norman W. Kalenda and Dorothy J. Beavers, both % Kodak Park Division, Rochester, N.Y. 14650
Filed Jan. 27, 1969. Published May 27, 1969
Int. Cl. G03c *1/34*
U.S. Cl. 96—109
No Drawing. 13 Pages Specification

Photographic silver halide materials are stabilized against fog with benzo[f]quinazolines having the general formula:

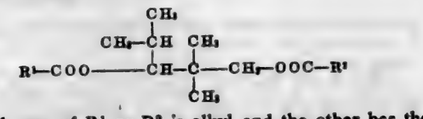


where each R is —H, —NH_2, —NHR′, —NR'_2, —SH, —SR′, —OH, —OR′, —NO_2, —COOH, —COOR′, or halogen, each R′ being alkyl, e.g., methyl, ethyl, butyl, and the like. Examples of suitable antifoggants are 1,3-diaminobenzo[f]quinazoline, 1-hydroxybenzo[f]quinazoline, 1-mercaptobenzo[f]quinazoline, and 1-hydroxy-3-aminobenzo[f]quinazoline.

Silver halide emulsions and elements stabilized as described can be chemically sensitized, e.g., with noble metal sensitizers alone or in combination with sulfur or selenium sensitizers. They can contain spectral sensitizers, incorporated color-forming couplers, incorporated developing agents, other antifoggants, hardeners, plasticizers, coating aids, vinyl polymers, and other suitable photographic addenda such as described in U.S. Patent 3,297,446 of Dunn issued Jan. 10, 1967 (columns 4–9).

794,416
TRIESTERS AND THEIR USE AS PLASTICIZERS
Lloyd P. Foster, P.O. Box 511, Kingsport, Tenn. 37662
Filed Jan. 27, 1969. Published May 27, 1969
Int. Cl. C08f *45/36*; C07c *69/66*
U.S. Cl. 260—31.6
No Drawing. 5 Pages Specification

Novel triesters of the formula:



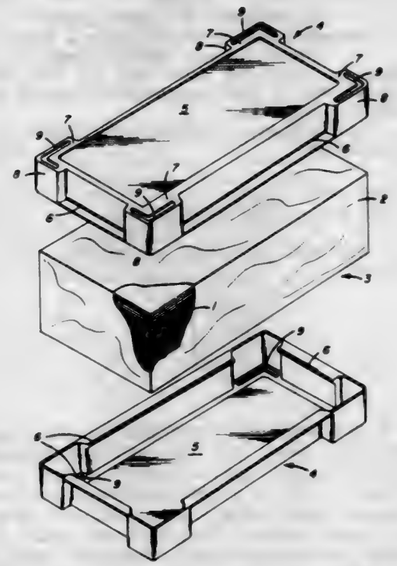
in which one of R^1 or R^2 is alkyl and the other has the formula R^3COOCH_2— in which R^3 is alkyl are useful as plasticizers for polymeric resinous materials, particularly polyvinyl chloride. The novel triesters are manufactured by reacting a glycol monoester with glycolic acid and by then reacting the resulting product with an alkanoic acid.

801,536
ENLARGEMENT PRINT FRAME AND MAILER
George E. Daddis, Penfield, and Edward A. Ehlers and Leonard S. Mattioli, Rochester, N.Y. (all of 1669 Lake Ave., Rochester, N.Y. 14650)
Filed Feb. 24, 1969. Published May 27, 1969
Int. Cl. B65d *11/20, 5/52, 85/30*
U.S. Cl. 206—45.2
1 Sheet Drawing. 5 Pages Specification



A package (1) for 8″ x 10″ photographic enlargement prints, or the like, which is used for handling, mailing, or as a frame. The package includes a tray (2) having a rectangular base panel (3) and side and end walls (4) (5) extending from the edges of the base panel at generally right angles thereto. The tray (2) receives a stack of prints (8) and a cardboard cover panel (7). Locking flanges (6) on the upper marginal edges of the side and end walls of the tray overlie the marginal edges of the cover panel to hold the panel (7) and prints (8) within the tray (2). The entire tray is made of a clear plastic material, e.g. oriented polystyrene, which is thermoformed to the desired tray configuration. For handling and mailing, an envelope (10) may be attached to the package. This is accomplished by insertion of one end of the envelope into a slot (9) in the cover panel (7) and wrapping of the envelope flap (10′) at the other end around the marginal portion of the cover panel (7) which underlies a locking flange (6). If desired, the package can be converted to a frame for one of the enlargement prints. To do so, the print is placed in the tray (2) so that it is visible through the base panel (3) of the tray (2). The cardboard cover panel (7) is used as a backing to hold the print in place. A portion of the cover panel may be bent outwardly to provide a support leg whereby the frame can be placed in an upright position.

801,566
PACKAGE AND METHOD
Arthur C. Rissberger, Jr., Webster, and Adrian C. Runions, Rochester, N.Y. (both % 1669 Lake Ave., Rochester, N.Y. 14650)
Filed Feb. 24, 1969. Published May 27, 1969
Int. Cl. B65d *85/30*; B65b *11/00, 51/10*
U.S. Cl. 206—62
2 Sheets Drawing. 9 Pages Specification



A method is disclosed for packaging a plurality of flat articles, e.g., microfiche, tabulating cards, slide transparencies, microfilm cards, enclosed substacks of any of these which form a stack (1). The stack (1) is enclosed with a 1½ mil sheet of polyolefin material (2) which is heat-shrunk around the stack to form a relatively rigid subassembly (3). The shrunk enclosure protects the stack from moisture, dust, and the like. Protective caps (4) are applied to opposite ends of the subassembly (3). The protective caps (4) are vacuum-formed of high-impact polystyrene sheet having a thickness of .025 inch. The caps (4) each include a panel (5) for engaging and protecting the surface of the subassembly (3). Elements (6), extending from the panel (5), grasp the sides and ends of the subassembly to hold the cap (4) in place. Elements, also extending from the panel (5), define walls (7) which overlie the perimeter of the subassembly (3) in spaced relationship with the surface thereof. Likewise, these elements define walls (9) which surround the corners of subassembly (3) in spaced relationship therewith. The walls (7) (8) serve to protect the edges and corners of the subassembly (3) from damage due to impact, abrasion, or the like, which might result from rough handling during shipping and/or storage.

REISSUES

MAY 27, 1969

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

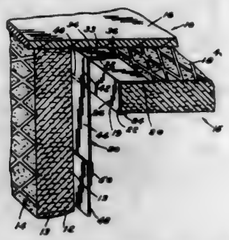
26,582
PLASTERING SPLASH APRON

Joseph Van Bael, 37426 Lakeshore Drive, Mount Clemens, Mich. 49406

Original No. 3,290,838, dated Dec. 13, 1966, Ser. No. 322,328, Nov. 8, 1963. Application for reissue June 30, 1967, Ser. No. 653,601

Int. Cl. E04c *1/04*; E04h *14/00*; E04b *7/18*

U.S. Cl. 52—99 15 Claims



1. A protective splash apron [for use during the plastering of the ceiling of a room or the like] comprising an elongated angle shape casement bead having a horizontal flange, a strip of flexible material having the upper longitudinal edge portion superimposed over the top surface of said horizontal flange, fastening means for operatively connecting said upper longitudinal edge portion to said horizontal flange, said fastening means comprising an elongated adhesive element secured along one longitudinal edge to the upper longitudinal marginal edge portion of said strip of material and secured along the other longitudinal edge to said casement bead, the remaining portion of said strip of material hanging freely along the outer surface of said vertical flange and terminating a predetermined distance below the bottom edge portion of said vertical flange, a [reusable] sheet of flexible material, and means for detachably connecting said sheet to the lower *longitudinal* marginal edge *portion* of said strip of material at a point below said casement bead, said means comprising an elongated strip of adhesive material secured along one longitudinal edge portion to the lower *longitudinal* marginal edge *portion* of said strip of material and secured along the other longitudinal edge portion to the upper portion of said sheet of flexible material, said strip of material being [provided with longitudinally arranged perforations] *severable at a tear zone located* laterally and directly opposite *from* an intermediate portion of said vertical flange to permit the portion of said strip of material below [the perforations] *said tear zone* to be readily removed from the [other] *upper* portion of said strip of material [after the ceiling has been plastered].

26,583
WRITING DEVICE

Marcel Joseph von Arx, Montgeron, France, assignor to Rotary Pen Corp., Kenilworth, N.J., a corporation of New Jersey

Original No. 3,262,427, dated July 26, 1966, Ser. No. 497,594, Oct. 6, 1965, which is a continuation of application Ser. No. 235,763, Nov. 6, 1962. Application for reissue Nov. 2, 1967, Ser. No. 684,892

Claims priority, application France, Nov. 9, 1961, 878,435; Dec. 22, 1961, 882,949

Int. Cl. B43k *27/12*

U.S. Cl. 401—31 5 Claims

2. A writing device comprising a casing; a plurality of elongated writing units; said writing units being mounted in said casing for aixal movement along the axis of said casing and being separately movable between a writing position and a retracted position in said casing; spring means biasing each writing unit to its retracted position in said casing; abutment means fixed longitudinally relative to said casing positioned between said writing units; locking means on each of said writing units engageable by said abutment means when said writing units are moved into their writing positions for restraining said units against



retraction by said spring means; and camming means integrally formed on each writing unit; the camming means of one of said writing units cooperating directly with an integral portion of another of said writing units when said other writing unit is in its writing position upon movement of said one writing unit from its retracted position toward its writing position to move the locking means of said other writing unit clear of said abutment means so as to cause a spring-biased retraction of said other writing unit to its retracted position.

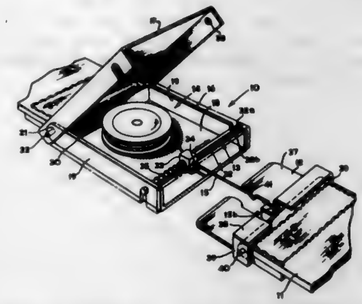
26,584
SEPARABLE FASTENER

Peter Marvin Spence, 328 Main St., Markham, Ontario, Canada

Original No. 3,195,202, dated July 20, 1965, Ser. No. 310,546, Sept. 23, 1963. Application for reissue July 14, 1967, Ser. No. 661,145

Int. Cl. A44b *11/00*

U.S. Cl. 24—230 10 Claims



A buckle including a pair of end members, one for attachment to each end of a bracelet. The first end member includes a slide member that is insertable into the second end member and can be releasably locked thereto by a latch in the second end member. The second end member contains a retractor to which is attached one end of a flexible strand, the other end of the strand being secured to the slide member. The strand extends through an aperture in the latch and is adapted to bias the latch transversely of the strand into latching engagement with the slide member.

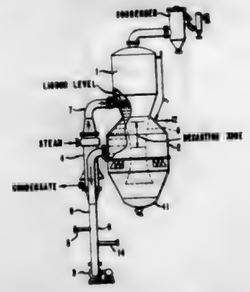
26,585
CONCENTRATION OF PHOSPHORIC ACID

Hans Svanoe, North Warren, Pa., assignor to Struthers Scientific and International Corporation, New York, N.Y., a corporation of Delaware

Original No. 3,118,731, dated Jan. 21, 1964, Ser. No. 849,345, Oct. 28, 1959, which is a continuation of application Ser. No. 493,312, Oct. 4, 1965. Application for reissue Oct. 2, 1967, Ser. No. 672,394

Int. Cl. C01b *25/18*

U.S. Cl. 23—165 5 Claims



A process is described for preparation of concentrated phosphoric acid from dilute phosphoric acid by treating calcium sulfate and fluosilicates in the dilute acid by adding calcium phosphate to the solution, concentrating the acid by evaporation to a supersaturated state and then precipitating the supersaturation on suspended crystals of calcium sulfate and fluosilicates which are separated from the more concentrated acid.

26,586
ELECTROKINETIC WEIGHING APPARATUS

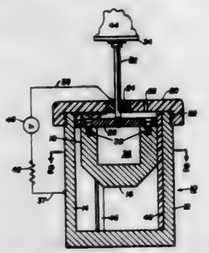
Donald L. Klass, Barrington, Ill., and Robert M. Haines, Placentia, and Robert B. McEuen, La Habra, Calif., and Thomas W. Martinek, Danville, Ill., assignors, by mesne assignments, to Union Oil Company of California, Los Angeles, Calif., a corporation of California

Original No. 3,196,963, dated July 27, 1965, Ser. No. 332,484, Dec. 23, 1963. Application for reissue Sept. 21, 1966, Ser. No. 586,917

The portion of the term of the patent subsequent to July 27, 1982, has been disclaimed

Int. Cl. G01g *9/00*

U.S. Cl. 177—1 19 Claims



An apparatus for determining the rate of movement of an object comprising (1) two spaced members having electrically conducting opposing surfaces, one of said surfaces being movable relative to the other, (2) a shear-responsive liquid, which exhibits electrokinetic properties when sheared, confined between the spaced members, (3) movable support means, for supporting the object, operatively connected to the movable member so as to cause movement of the movable member in response to the rate of movement of the object and (4) electrical circuit means responsive to the electrokinetic property of the liquid connected to the electrically conducting opposing surfaces. The invention also relates to a method for determining the rate of movement of an object utilizing the apparatus.

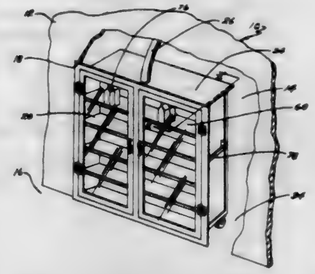
26,587
MILK HANDLING SYSTEM

Oliver H. Thompson, 716 Cherry Ave., Big Rapids, Mich. 49307

Original No. 3,237,721, dated Mar. 1, 1966, Ser. No. 327,385, Dec. 2, 1963. Application for reissue Feb. 16, 1968, Ser. No. 709,153

Int. Cl. E04h *3/04*; A47f *3/04*; F28d *5/00*

U.S. Cl. 186—1 10 Claims



A handling, hauling, and merchandising system and method employing a store cooler area inside the store, with a customer access opening, cooling duct means in the area, conveyance floor surface in the area to receive at least one wheeled hauling and display vehicle with shelves on its frame, and means to retain cooling air flow over the shelves such that the vehicle is loaded as at a dairy, and taken to the store cooler area where the vehicle itself is actually temporarily used as part of the display until replaced by another such multi-purpose vehicle.

26,588
FLOODLIGHTING OF ATHLETIC FIELDS

Samuel M. Neely, 511 N. Mayo, Compton, Calif. 90221

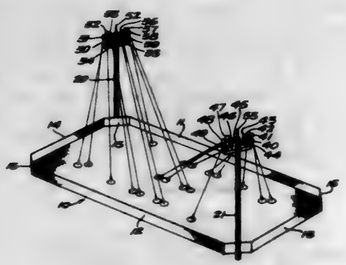
Original No. 3,305,678, dated Feb. 21, 1967, Ser. No. 141,753, Sept. 29, 1961. Application for reissue Feb. 20, 1967, Ser. No. 627,563

Int. Cl. F21p *5/00*

U.S. Cl. 240—3 10 Claims

A convertible floodlighting system and method for illuminating athletic fields by clusters of individually adjustable floodlamps mounted on supporting structures distributed close to the playing area and selectably usable to light a hockey rink located in a corner of the playing field without interfering with the use of the playing field generally for use in playing other games such as softball requiring much larger areas unobstructed by floodlight supporting structures. The system and method are readily convertible to use all of the lamps to illuminate a softball field and to use the lights from a pair of the supports to light a hockey ring from its diagonally opposed corners. When the invention system is employed to illuminate only a hockey rink, both ends and both sides of the rink remain clear of light supporting

structures and a clear and unobstructed view is available to spectators and the individual floodlamps are adjusted to cast beams in a cross-cross pattern extending to the remote half of the rink to minimize the possibility of the puck being obscured by a player's shadow.



26,589

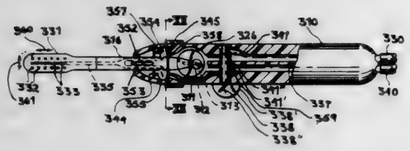
ORAL TREATMENT APPLIANCE

Isaac I. Murov, Shrub Oak, N.Y. (Mohegan Lake, N.Y. 10547), Morton J. Schloss, Scarsdale, N.Y. (210 E. 68th St., New York, N.Y. 10021), and Francis V. Panno, Lanhmont, N.Y. (444 E. Boston Post Road, Mamaroneck, N.Y. 10543)

Original No. 3,214,775, dated Nov. 2, 1965, Ser. No. 282,979, May 24, 1963. Application for reissue Feb. 16, 1967, Ser. No. 632,832

Int. Cl. A47j *21/02, 23/02;* **A61h** *9/00*

U.S. Cl. 15—22 **32 Claims**



The oral treatment appliance involves means for irrigating oral tissue with a jet of liquid, usually water, that is mechanically oscillated at a relatively rapid rate to change the target area of the jet as it is manually moved to direct the jet over selected areas of the oral tissue. Brushing or massaging of the oral tissue may be simultaneously carried out by suitable means.

The appliance for the oral treatment comprises a handle housing a power drive for an appliance which is movably mounted on the handle. The appliance includes a head, such as a brush, massager or irrigator, and a rod operably connected to the drive for longitudinal, transverse and/or angular motion. A bore having a long portion going through the rod and a short portion venting from the head is connected to a source of liquid, such as a water faucet, which preferably also drives a liquid motor such as a rotor.

26,590

COMPOUND OF BETAINE AND CHLORAL AND METHOD FOR PREPARING SAME

Vladimir Petrow, Alan Jeffery Thomas, and Oliver Stephenson, London, England, assignors to The British Drug Houses Limited (of 1964), London, England

No Drawing. Original No. 3,028,420, dated Apr. 3, 1962, Ser. No. 33,637, June 3, 1960. Application for reissue Feb. 6, 1964, Ser. No. 348,838

Int. Cl. C07c *101/12, 101/10;* **A61k** *24/00*

U.S. Cl. 260—501.13 **4 Claims**

A compound of the empirical formula $C_7H_{14}O_4NCl_3$ derived from betaine and chloral having hypnotic and sedative properties, and process for its preparation.

26,591

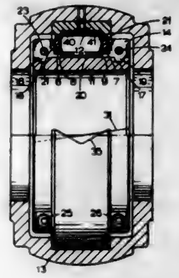
SPLIT ROLLER BEARINGS

Sydney Kay, deceased, late of King's Lynn, Norfolk, England, by Sydney Pitfield Kay, executor, Bexley, England, assignor to Cooper Roller Bearings Company Limited, Norfolk, England, a British company

Original No. 3,166,363, dated Jan. 19, 1965, Ser. No. 217,211, Aug. 15, 1962. Application for reissue Feb. 10, 1967, Ser. No. 626,349

Int. Cl. F16c *33/46, 33/58, 33/30*

U.S. Cl. 308—236 **3 Claims**



A split roller bearing assembly is disclosed having an inner race member split into two parts along lines of separation that are at an angle to the axis of the bearing. Each inner race part comprises a combination of a track portion on which the rollers bear, and a clamping portion of like construction at each side of the track portion, whereby the assembly is symmetrical about the transverse axis of the rollers.

26,592

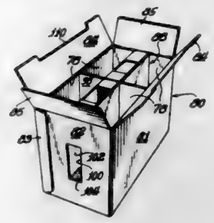
CONTAINER FOR FROZEN PRODUCT

Jan G. Cummings, Altona, and Richard N. Maskell, Downers Grove, Ill., assignors to Container Corporation of America, Chicago, Ill., a corporation of Delaware

Original No. 3,352,472, dated Nov. 14, 1967, Ser. No. 576,287, Aug. 31, 1966. Application for reissue Aug. 12, 1968, Ser. No. 753,816

Int. Cl. B65d *5/56, 5/40, 5/62, 5/60, 25/14*

U.S. Cl. 229—14 **11 Claims**



This invention relates to a container for holding a normally liquid product in a frozen state, and more particularly, to an improved container that provides for quick-freezing of the product, and further that permits sampling of the product even while in the frozen condition.

26,593

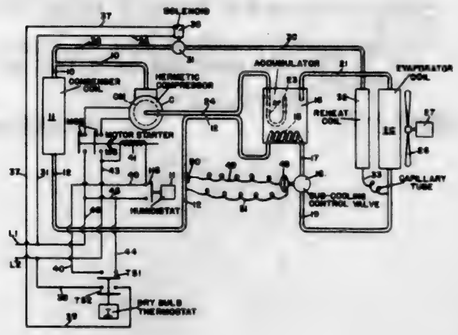
AIR CONDITIONING SYSTEM INCLUDING REHEAT COILS

Rodney F. Lauer, Naples, Fla., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Original No. 3,316,730, dated May 2, 1967, Ser. No. 519,901, Jan. 11, 1966. Application for reissue June 5, 1968, Ser. No. 741,818

Int. Cl. F25b *41/00;* **F24f** *3/14*

U.S. Cl. 62—160 **6 Claims**



In an air conditioning system in which air is chilled for dehumidification to a temperature too low for comfort, a reheat coil downstream with respect to the evaporator coil, is connected when reheat is required, to the compressor of the system so as to act as an auxiliary condenser coil for heating the air chilled by the evaporator coil. The reheat coil discharges refrigerant liquid through an expansion device into the evaporator coil which is fed by the main condenser coil through a subcooling control valve operating as an expansion valve.

26,594

MACHINE FOR ROLL-FORMING AN ANNULAR WORKPIECE INCLUDING A SEPARATE ROTATABLE CORE

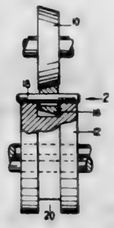
Isaac Marcovitch, Johannesburg, Transvaal, Republic of South Africa, and Jacob Marcovitch, Johannesburg, Transvaal, Republic of South Africa (% Genpat, P.O. Box 31524, Braamfontein, Transvaal, Republic of South Africa); said Isaac Marcovitch assignor to said Jacob Marcovitch, Johannesburg, Transvaal, Republic of South Africa

Original No. 3,345,845, dated Oct. 10, 1967, Ser. No. 388,587, Aug. 10, 1964. Application for reissue Aug. 1, 1968, Ser. No. 753,813

Claims priority, application Republic of South Africa, Aug. 12, 1963, 63/3,621; Jan. 22, 1964, 64/299; Mar. 20, 1964, 64/1,323

Int. Cl. B21b *17/00, 19/04;* **B21c** *45/00*

U.S. Cl. 72—80 **12 Claims**



A machine for profiling annular workpieces by pressure between a core which is loosely threaded through a workpiece to contact its inner face, and a surface which contacts the outer face. The ends of the core are supported by, and roll on, another surface. The core is thus not fixed in bearings but is free to advance through the machine. An anvil ring may surround the workpiece to limit its diametral spread and prescribe the profile of its outer face. The surfaces defining the space or throat in which profiling takes place may be provided by rotating rollers, or reciprocating elongated bodies, or the like.

PLANT PATENTS

GRANTED MAY 27, 1969

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,889

POINSETTIA PLANT

Jack S. Sweet, St. Petersburg, Fla., assignor to Earl J. Small Orchids, Inc., Pinellas Park, Fla., a corporation of Florida

Filed Feb. 13, 1967, Ser. No. 615,854

Int. Cl. A01h *5/02*

U.S. Cl. Plt.—86 **1 Claim**

1. A new and distinct variety of poinsettia plant substantially as illustrated and described, characterized by a compactly formed, vivid red bract involucre having very broad bracts widened and toothed as in an oak leaf on the lower layer and with very broad ovate bracts on short petioles in dense overlap about tiny center growth bracts ringing tightly set flowers with nectar caps and stamens of vivid yellow, the entire bract involucre being of thick, leathery, polyploid type cell structure and having as part of its natural growth, thick, and long lasting leaves set close together on an extremely sturdy upright stem of naturally large caliper with short internodes, the whole presenting a complete inflorescence in coherent planular formation, with densely overlapped and intersupporting vivid red bract involucre on a self supporting heavy trunk.

PATENTS

GRANTED MAY 27, 1969

GENERAL AND MECHANICAL

3,445,860
DETACHABLE COVER FOR HELMETS AND THE LIKE
Fred Rodell, % N.E.W.S. Enterprises, Inc., 2627 Kipling, Houston, Tex. 77006
Filed Apr. 17, 1967, Ser. No. 631,220
Int. Cl. A42b *1/08, 1/02*; A42c *5/00*
U.S. Cl. 2—3 5 Claims



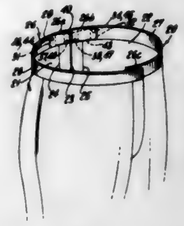
A detachable cover for crash helmets and the like is described. It includes a cap of pliable material that fits over the outside surface of the helmet. The cap has panels made of an elastic fabric so that the cap may be stretched over the helmet. The cap is held on the helmet by a plurality of elongated, thin, flat sided strips of flexible plastic which can bend sideways but not edgewise. The longitudinal edges of the strips are attached to the cap along its edges for tucking under the edge of the helmet into position adjacent the inner surface of the helmet after the edges of the cap are stretched over the brim of the helmet. The strips will bend readily sideways into engagement with the concave inner surface of the helmet adjacent the edge or brim. Being stiff and relatively unbendable edgewise, the strips will resist being pulled out of engagement with the inside surface of the helmet by the pull of the elastic material of the cap.

3,445,861
POT HOLDER WITH VACUUM CUP HANDLE
Morris L. Slimovitz, % Morris Manufacturing Co., P.O. Box 219, Newbern, Tenn. 38059
Filed Apr. 29, 1966, Ser. No. 546,337
Int. Cl. F16b *47/00*
U.S. Cl. 2—20 3 Claims



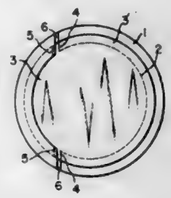
A flat pot holder body including two outward layers and filler material contained therebetween. A suction cup handle including a flanged inner portion is disposed and secured between the layers, an outer diverging portion projecting outwardly through an opening in one of the layers.

3,445,862
TROUSER ADJUSTERS
William Parsont and Rosalie S. Wilson, Forest Hills, N.Y., assignors of one-tenth to Michael J. Parsont, Forest Hills, N.Y.
Continuation-in-part of application Ser. No. 422,111, Dec. 30, 1964. This application Jan. 5, 1967, Ser. No. 607,498
Int. Cl. A41d *27/00*
U.S. Cl. 2—237 18 Claims



A trouser adjuster for reducing or eliminating sagging at the rear portion of the garment. An elastic lifting member is attached to the inside rear portion of the waistband for effecting a lifting of the seat of the trousers upon an operative encirclement of the waistband portion about the body of the wearer.

3,445,863
ONE-WAY VALVE DEVICE SUITABLE FOR USE AS A HEART VALVE
Juro Wada, 19 Nishi 4-chome, Kita 21-joh, Sapporo-shi, Hokkaido, Japan
Filed Nov. 30, 1966, Ser. No. 598,032
Claims priority, application Japan, Dec. 8, 1965, 40/75,171, 40/99,436
Int. Cl. A61f *1/22*; F16h *15/03*
U.S. Cl. 3—1 8 Claims



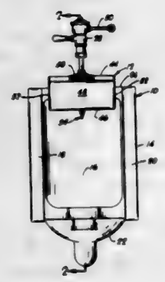
1. A one-way valve device comprising a base member provided with an opening therein and a swingable valve plate having a size slightly larger than said opening of said base member so as to permit said valve plate to completely cover said opening in close contact therewith, said base member provided with a cutout on each side of the periphery of said opening at positions opposite with respect to a center line of said opening of said base member and spaced apart from the line passing the center of area of said opening at right angle to said center line, said valve plate also provided with corresponding cutouts on the periphery thereof so that said cutouts of said valve plate are engaged with said cutouts of said base member, respectively, when said valve plate is placed in alignment with said base member thereby permitting said valve plate to be swung with respect to said base member about an axis defined by the engagement of said cutouts so as to open and close said opening, at least one of said base member and swingable valve plate provided with stepped portions at least in the regions of said cutouts to provide stepped location of the edges of said cutouts so that said valve plate can completely cover the opposing peripheral surface of the opening of said base member when said valve plate is in its closed position.

3,445,864
FLUSH TANK VALVE BALL AND ROD COUPLING INSERT
Charles E. Justis, Sr., 825 Greenwood Ave., Jenkintown, Pa. 19046
Filed Oct. 6, 1966, Ser. No. 584,752
Int. Cl. E03d *1/34*
U.S. Cl. 4—56 7 Claims



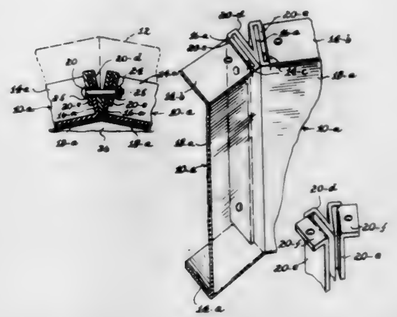
The flush tank valve ball comprises a hollow body substantially ovate in vertical, axial cross sectional configuration and an upper or head portion and a downwardly extending tail portion. The tail portion is receivable in the open end of the flush tank drain pipe. The head portion has a wide encircling flange extending generally in a plane normal to the body axis and defines a plane separating the head portion from the tail portion. The underside of the flange curves outwardly and downwardly and forms a downwardly opening annular sealing surface concave in transverse cross section.

3,445,865
COMBINED ASHTRAY AND DEODORANT CONTAINER
Joseph F. Rumsey, Jr., 1608 Elmhurst, Oklahoma City, Okla. 73120
Filed May 2, 1966, Ser. No. 546,851
Int. Cl. E03d *13/00*
U.S. Cl. 4—109 1 Claim



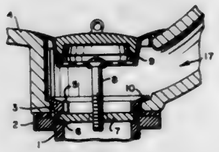
A wall mounted urinal basin with a deodorant-ashtray combination incorporated therein. The basin has a top wall adjacent which the deodorant-ashtray is detachably secured. The deodorant-ashtray includes a hollow container having side walls, a bottom wall and an upper wall having an opening therein in which an ashtray is removably positioned. The ashtray and hollow container each have imperforate bottom walls, and the ashtray carries outwardly extending flanges which close the opening in the top wall of the container.

3,445,866
SWIMMING POOL CONSTRUCTION
Eugene H. Shields, 45 Hartman Drive, Hamilton Square, N.J. 08690
Continuation-in-part of application Ser. No. 407,815, Oct. 30, 1964, now Patent No. 3,317,927. This application May 4, 1967, Ser. No. 636,043
Int. Cl. E04h *3/18*; E04g *11/06*
U.S. Cl. 4—172 10 Claims



A swimming pool construction including a plurality of wall panels having end portions in right angular relation with said panels and including shims made of sheet metal or extruded plastic material in open V-shape in cross-section in various tapers for insertion between the end portions of opposed pairs of panels for arranging and maintaining them in generally curving formation.

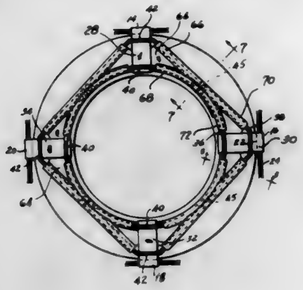
3,445,867
CONTAINER FOR LIQUIDS AND MEANS FOR DISCHARGING LIQUIDS THEREFROM
Walther Löffler, Friedrich-Ebert-Str. 43, Markkleeberg-Mitte Bezirk, Leipzig, Germany
Filed July 21, 1966, Ser. No. 566,897
Int. Cl. E03c *1/26*
U.S. Cl. 4—288 4 Claims



A drainage assembly for tubs and the like, enabling the drain pipes to be cleaned effectively. A valve seat which is adapted to receive a valve or a plug to close a drainage outlet is connected with a discharge pipe by a connecting means which is in turn releasably connected with the discharge pipe by a retaining means. This retaining means includes bayonet slots or threaded bosses situated at diametrically opposed parts of the discharge pipe to releasably hold the connecting means operatively engaged with the discharge pipe. When the connecting means is removed, the valve seat can be removed, and

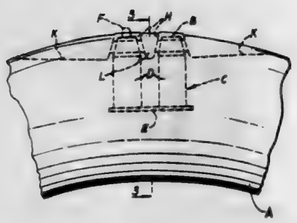
the location of the retaining means at the diametrically opposed regions of the drainage pipe gives free access to the interior of the latter for cleaning purposes.

3,445,868
LIFE RING
Leonard P. Frieder, Clarks Green, and Edgar G. Baker, Carbondale, Pa., assignors to Gentex Corporation, New York, N.Y., a corporation of Delaware
Original application July 27, 1965, Ser. No. 475,185, now Patent No. 3,353,197, dated Nov. 21, 1967. Divided and this application June 27, 1967, Ser. No. 667,308
Int. Cl. B63c 9/10
U.S. Cl. 9—311 **4 Claims**



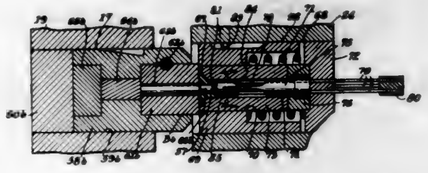
A life ring comprising an annular body of soft and resilient buoyant material surrounded by a line and having means for attaching the line to the body at spaced points therearound. First fabric tunnels extending between adjacent connecting means within the body receive a first continuous length of tension-resisting material. Second fabric tunnels extending between adjacent connecting means within the body receive respective second lengths of tension-resisting material. The lengths of tension-resisting material are secured to the attaching means.

3,445,869
LIFEBELTS AND THE LIKE
Charles R. Tyrer, Huyton, England, assignor of one-half to R. Perry & Company Limited, Birkenhead, Cheshire, England, a British company
Filed Feb. 15, 1967, Ser. No. 616,379
Int. Cl. B63c 9/10
U.S. Cl. 9—340 **11 Claims**



A liferaft or like annular buoy having a rigid plastic-moulded shell filled with inert synthetic foam and provided with circumferentially-spaced eyes, inset relatively to its circular profile, through which is threaded a closed loop of rope. Each such eye may be buried in the cross-section of the buoy between rope-receiving grooves therein, or may form part of a strap secured around a recessed part of the buoy, and is preferably bifurcated to receive a locating enlargement of the rope.

3,445,870
PIERCING AND SLOTTING OF DRIVE RIVETS
Robert F. Kolec, Whittier, Calif., assignor to Olympic Screw & Rivet Corporation, Downey, Calif., a corporation of California
Filed Mar. 27, 1967, Ser. No. 626,307
Int. Cl. B21k 1/58
U.S. Cl. 10—20.5 **9 Claims**



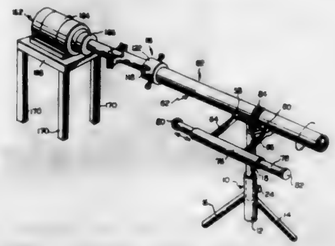
Forming of drive rivets in progressive four-blow headers of the four-die type with a set of dies which progressively pre-form a length of malleable metal stock in the first die (by a first blow) into a blank with an upset head having an end socket, final-form said head while deepening said socket in a second die (by a second blow), form a plurality of longitudinal slots (preferably three) in the shank end of said blank in a third die (by a third blow) and, before ejecting the finished rivet from the fourth die, by extrusion lengthening the shank and the slots therein while simultaneously further deepening the socket so that it extends into the slotted end of the rivet shank; or in progressive four-blow headers of the two-die type with a pair of dies which progressively pre-form a length of such stock in a first die (by a first blow) into a blank with an upset head having an end socket and with a plurality of longitudinal slots in the blank shank, final-form the upset head while the blank remains in the first die (by a second blow), place the blank thus formed in a second die by a third blow and, before ejecting the finished rivet from said second die, by extrusion lengthening the shank and the slots therein while deepening the mentioned socket so it extends into the slotted end of the rivet shank.

3,445,871
APPARATUS, REAMER AND METHODS FOR WORKING PIPE
Donald E. Blake, 761 Chestnut Ridge Road, Morgantown, W. Va. 26505
Filed Apr. 3, 1967, Ser. No. 627,694
Int. Cl. B23g 1/44, 1/52, 1/50
U.S. Cl. 10—107 **12 Claims**

An apparatus for use in combination with pipe working tools for the cutting, reaming and threading of pipe of larger diameters, i.e., diameters in excess of 2" and particularly diameters in the range of 2½"–6". The apparatus rotatably supports and establishes a driving connection between a pipe and a portable rotary power source such as a power vice and, being so supported and driven, the pipe may be cut, reamed and threaded in one work set-up.

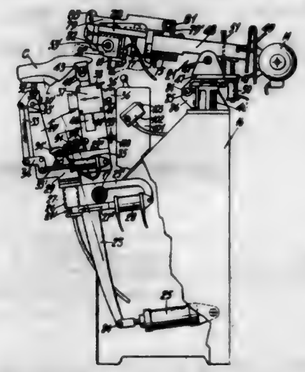
The pipe is rotatably supported on a head or platform by means of a roller vise, and the head in turn is rotatably mounted on a stand for rotation about two axes. A tool support arm is carried by the rotatable head and moves in unison with the head upon movement of the head about its axes. An adapter ring and universal joint drivingly connect one end of the pipe to the rotary power source. The universal joint eliminates the need of alignment between the axis of rotation of the pipe and the axes of rotation of the power source and, as the pipe is rotatably driven, the rotatable head moves about its axes in response to any eccentric rotation of the pipe and thereby affords automatic alignment between the rotating pipe and the roller vise.

A conventional pipe cutter is used in combination with the apparatus to cut the pipe, and the pipe is reamed by a novel reamer which can be selectively adjusted to ream pipe of several different sizes. Threading is accomplished by the use of a conventional geared threader.



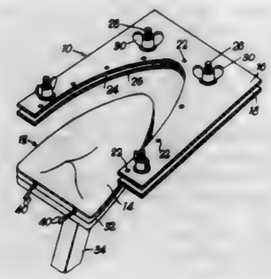
Methods are also provided for the cutting, reaming and threading of pipes of such larger diameters wherein a portable rotary power source such as a power vise may be employed to rotatably drive the pipe. The methods involve establishing a universal driving connection between a pipe to be worked and a rotary power source, rotatably securing the pipe in a vise means supported for rotation about multiple axes, and then rotatably driving the pipe and applying cutting, reaming and threading tools to the portion thereof to be worked. The methods when combined constitute another method of sequentially cutting, reaming and threading a pipe in a single work set-up using a portable rotary power source, such as a power vice, to rotatably drive the pipe.

3,445,872
AUTOMATIC MACHINE FOR MANUFACTURING FOOTWEAR
Giuseppe Pisaroni, Cascine Olona di Settimo Milanese, Milan, Italy
Filed Jan. 9, 1967, Ser. No. 608,124
Claims priority, application Italy, Jan. 21, 1966, 13,282/66; June 8, 1966, 18,822/66
Int. Cl. A43d 21/08, 23/02
U.S. Cl. 12—8.3 **18 Claims**



The combination in a single shoemaking machine of a front unit to support the shoe for pivotal movement about horizontal and vertical axes, a tool carrier and motor assembly mounted on a forwardly extending horizontal bar on top of the machine for pivotal movement on horizontal and vertical axes, a motor-driven vibrator unit at one side of the machine and a contact and counter unit at each side of the machine.

3,445,873
METHODS AND APPARATUS FOR FORMING AND PREFORMING SHOE UPPER FOREPARTS
Alfred Alexander Staden, Kettering, England, assignor to Shoe and Allied Trades Research Association
Filed Nov. 17, 1965, Ser. No. 508,211
Claims priority, application Great Britain, Nov. 18, 1964, 46,885/64; June 30, 1965, 27,758/65
Int. Cl. A43d 95/00, 11/12
U.S. Cl. 12—146 **20 Claims**



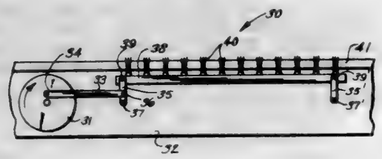
A shoe upper forepart blank is deformed to facilitate lasting by being clamped at its margins in taut condition while a mould, having a shape intermediate the original flat shape of the blank and the shape to be had after lasting, is thrust into the clamped blank preferably while imparting rocking movement to the mould, the final shape of the forepart being obtained by a lasting operation, and the intermediate shape of the mould being determined by partially flattening a thin shell originally corresponding to the eventual shape of the shoe upper forepart while keeping the margins of the shell substantially in one plane.

3,445,874
PROCESS OF MAKING MOULDED COMPOSITIONS PARTICULARLY FOR FOOTWEAR
Shlomo Brauner, 46 Yahalom St., Ramat-Gan, Israel
Filed Apr. 20, 1964, Ser. No. 361,239
Claims priority, application Israel, June 13, 1963, 19,408
Int. Cl. A43d 65/00
U.S. Cl. 12—146 **4 Claims**



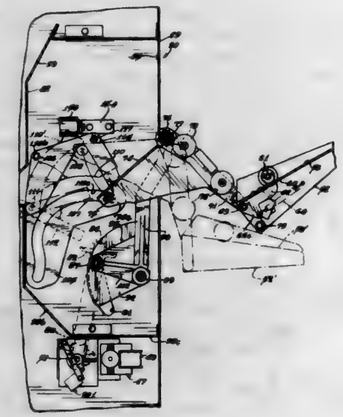
A process of making moulded self-supporting articles, particularly orthopedic middle soles or heels for footwear, comprises introducing into the mould a mixture consisting essentially of cork and rubber latex, the cork constituting 65–85% of the rubber and cork ingredients by dry weight, the upper particle size of the cork being 2–3 mm.; moulding the mixture at a temperature of 200–220° C. at a pressure of 60–100 atmospheres for a period of 3–6 minutes; and removing the moulded article from the mould.

3,445,875
SHOE CLEANING DEVICE
Ida M. Bohannon, Prince Rupert, British Columbia, Canada (Box 9, Winfield, British Columbia, Canada)
Filed Mar. 18, 1966, Ser. No. 537,611
Int. Cl. A47l *23/06;* A46b *13/02*
U.S. Cl. 15—36 1 Claim



A device for cleaning the bottom of shoes, the device including a rotatable flat brush which moves upwardly through a grating to clean the shoe sole of a person standing thereupon.

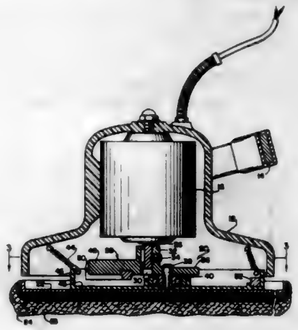
3,445,876
BOWLING BALL POLISHING MACHINE
Robert Torresen, Muskegon, Mich., assignor to Brunswick Corporation, a corporation of Delaware
Original application Mar. 22, 1965, Ser. No. 441,551, now Patent No. 3,341,982, dated Sept. 19, 1967. Divided and this application Apr. 25, 1967, Ser. No. 633,457
Int. Cl. A46b *13/02;* A63d *5/10;* A63b *47/04*
U.S. Cl. 15—97 8 Claims



A bowling ball polishing machine have a motor driven door mechanism for automatically moving balls into the interior of the machine and into engagement with a buffing and polishing wheel. Control means are provided for selecting polishing cycles of different duration, and for effecting automatic loading and unloading of balls into and from the machine.

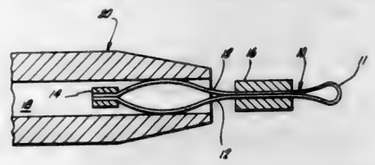
3,445,877
POLISHING MACHINE
Harry E. Stout, 10 Dartmouth St., Somerville, Mass. 02143
Filed July 26, 1966, Ser. No. 568,032
Int. Cl. A47l *11/02, 1/02*
U.S. Cl. 15—98 7 Claims

A power-driven buffing machine is provided with a drive mechanism which produces a rotating oscillating action of a buffing head to produce a smooth, unstreaked finish on the worked surface. The drive mechanism includes a crank arm connected to the motor drive shaft, a pivotal connection between the buffing head and the crank arm eccentric thereto, resilient elements such as coil springs connecting the head to the housing to limit



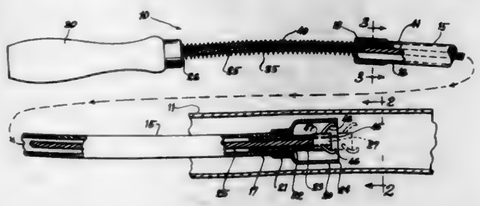
the rotary movement of the head and magnetic elements, in the preferred mode, which cyclically impart an angular thrust to the head causing it to oscillate back and forth about its eccentric axis.

3,445,878
CLEANING TOOL
Vernon E. Stephens, 7422 Cherokee Drive, Downey, Calif. 90240
Filed Mar. 6, 1967, Ser. No. 621,041
Int. Cl. F28g *3/12;* B08b *9/00, 1/00*
U.S. Cl. 15—104.1 2 Claims



A tool made of spring wire for engaging and cleaning the interior surface of an orifice such as in a cutting or welding torch.

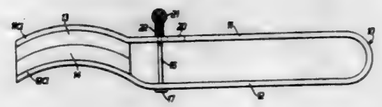
3,445,879
CLEANING DEVICE FOR FRAGILE FLEXIBLE HOSE
Robert L. Taylor, 909 Spruce Drive, La Crescent, Minn. 55947
Filed Jan. 12, 1968, Ser. No. 697,507
Int. Cl. B08b *9/06;* A47l *25/00*
U.S. Cl. 15—104.1 7 Claims



An elongated cleaning device for insertion into an obstructed fragile flexible hose, such as a vacuum cleaner hose, the cleaning device having a blunt forward end free of any tendency to puncture the hose. The forward end of the device includes a guard member in which

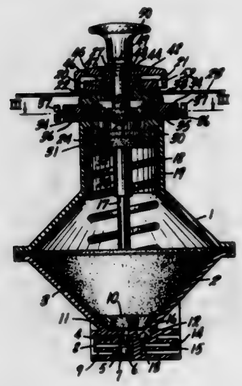
is positioned an obstruction engaging member. When an obstruction is encountered by the guard member, the obstruction engaging member is moved forwardly of the guard member and rotated to engage the obstruction, after which the cleaning device and engaged obstruction are withdrawn from the hose. In some cases the obstruction simply is broken up so it is free to move within the hose.

3,445,880
BLIND CLEANING APPLIANCE
Arthur Richard Warner, 23 The Vale, Chelsea, London SW. 3, England
Filed May 10, 1967, Ser. No. 637,405
Int. Cl. A47l *17/00*
U.S. Cl. 15—210 9 Claims



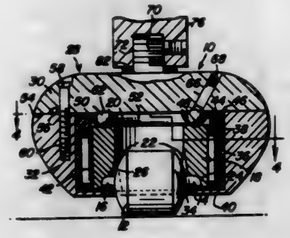
A Venetian blind cleaning tool comprises a U-shaped unitary member of which the ends carry cleaning members shaped to fit the slats and are resiliently biased away from each other. A releasable catch is provided to retain the cleaning elements in contact with the blind slat when in use.

3,445,881
RECIPROCATING PUMPS FOR USE WITH WINDSHIELD WASHERS
Henri Charles Molenaar, Stevinstraat 177, The Hague, Netherlands
Filed Apr. 3, 1967, Ser. No. 627,819
Claims priority, application Netherlands, Apr. 4, 1966, 6604455
Int. Cl. A47l *1/02;* B60s *1/10;* H01h *21/04*
U.S. Cl. 15—250.02 6 Claims



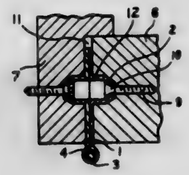
A windshield washer pump having contacts actuated first toward the end of its suction stroke to energize a windshield wiper motor and then towards the end of its discharge stroke to break one circuit and close another circuit in quick sequence for arresting the motor in a parking position of the wiper blades. The pump actuator carries a switch member having a contact element disposed between nonconductive sloping cam surfaces and slidable to engage selectively two pairs of circuit terminals to close one or the other of the two circuits. The circuit terminals are biased into engagement with said spring member and cooperate with its sloping cam surfaces to effect a snap action movement thereof towards the end of the pump discharge stroke to break the one circuit and close the other circuit in quick sequence.

3,445,882
CASTER WHEEL
Paul P. Miano, Box 246, Garyville, La. 70051
Filed Nov. 1, 1966, Ser. No. 591,170
Int. Cl. B60b *33/08;* B65 *29/00*
U.S. Cl. 16—21 4 Claims



A body defining a downwardly opening recess partially closed by a lower inwardly projecting annular flange and including a cylindrical support member captively journaled in the recess by roller radial thrust bearing means interposed between the support member and the walls of the recess and annular thrust bearing means disposed between the upper end of the support member and the closed upper end of the recess. The lower end of the cylindrical support member includes downwardly opening and aligned diametrically opposed semicylindrical recesses and a wheel including opposite side outwardly projecting stub axle portions is rotatably received within the lower end of the cylindrical support member with its stub axle portions journaled in the semicylindrical recesses and captively retained therein by means of the annular lower end wall or flange of the body above which the lower peripheral portions of the stub axle portions are at least slight spaced.

3,445,883
HINGES, BUTT TYPE
Charles Thomas Lowe, 5165 Torrey Road, Flint, Mich. 48507
Filed Feb. 28, 1967, Ser. No. 619,899
Int. Cl. E05d *7/00*
U.S. Cl. 16—128 1 Claim



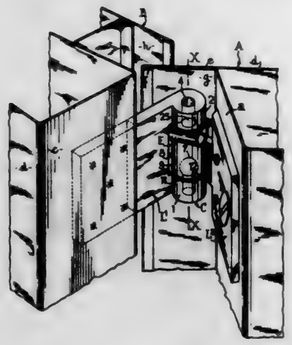
A butt-type hinge comprised of a pair of hingedly connected wings, each of the wings having a plurality of cylindrical bosses extending therefrom and adapted to be snugly received in counterbored holes in the door and door jamb so that the bosses serve to support the least part of the weight of the door.

3,445,884

HINGE, IN PARTICULAR FOR AN AUTOMOBILE VEHICLE DOOR

Marcel Dangauthier, Paris, France, assignor to Societe Industrielle et Commerciale des Automobiles Peugeot, Paris, France

Filed May 10, 1967, Ser. No. 637,536
Claims priority, application France, May 13, 1966, 61,463
Int. Cl. E05d 9/00, 15/00, 11/04
U.S. Cl. 16—128 11 Claims



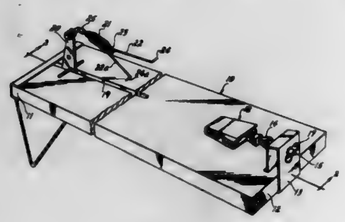
A hinge in which an elastically compressible means is disposed in the pivot axis between the upper branch of the fork portion of the first hinge part and an extension portion of the second hinge part so as to maintain in axial engagement a ball element provided on the lower branch of the fork portion and a bearing portion on extension portion, abutment means being provided to limit the possible axial compression of the compressible means to a value sufficient to allow disengagement of the latter but insufficient to allow total axial disengagement of the bearing portion from the ball element.

3,445,885

FISH-HOLDING DEVICE

Albert Reitz, Tucson, Ariz.
(Rte. 1, Box 64, Coolidge, Ariz. 85228)

Filed Nov. 17, 1966, Ser. No. 595,204
Int. Cl. A22c 25/08
U.S. Cl. 17—70 1 Claim



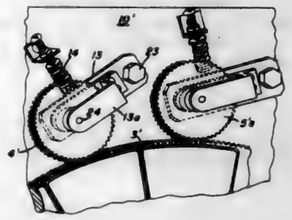
A table for cleaning fish having a clamp member located at one end of the table to engage the tail of the fish, a pair of spring-loaded elongate shafts having outwardly turned ends which can be inserted within the fish's mouth to engage therein and, in turn, being carried by an upstanding member which is adjustably positionable on the table to accommodate fish of various lengths.

3,445,886

APPARATUS FOR TRANSVERSELY STRETCHING MOVING FILM

Jean E. Lemoine and Marcel F. Catinat, both of Kodak-Pathe, 30 Rue de Vignerons, Vincennes, Val-de-Marne, France

Filed Dec. 1, 1965, Ser. No. 510,796
Claims priority, application France, Dec. 3, 1964, 997,210
Int. Cl. B29c 17/02
U.S. Cl. 18—1 7 Claims



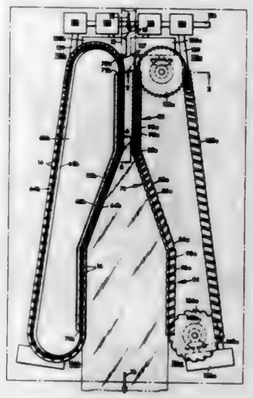
An apparatus is provided for transversely stretching a film which comprises a pair of rotatable drive gears each having gear teeth about the periphery thereof, said gears being disposed at an angle with respect to one another such that they diverge in the direction of film movement so as to spread and stretch the film in the transverse direction.

3,445,887

SCREW FEED BIAXIAL STRETCHING MACHINE

Hsue C. Tsien, Livingston, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

Filed Nov. 17, 1966, Ser. No. 595,113
Int. Cl. B29d 31/00
U.S. Cl. 18—1 2 Claims



A biaxial web stretching machine for sheet plastic and the like, having a plurality of individual and independently movable web gripping means which are conveyed about a pair of endless circulating pathways. The pathways include cooperative opposed parallel infeed portions, divergent stretch portions and parallel outfeed portions, all of which have associated with a plurality of underlying gripper advancing screw feed means. The screw feed means are interconnected with universal joints and include thread means overlying the universal joints to provide a smooth

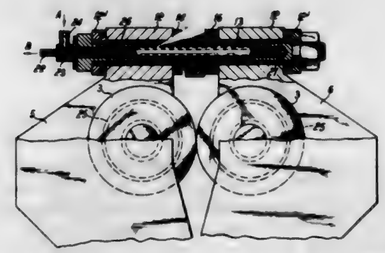
and positive transition of each of the individually movable gripper meanes between the interconnected screw feed means. Sprocket means are employed at either end of each of the feed pathways for transferring the gripper means to a return screw means and removing the gripper means from the return screw means to recycle the gripper means through the stretching zone. Each of the respective sprocket means is geared to drive its associated screw feed means on the outlet side thereof so that accurate timing between the sprocket means and the screw feed means to which each respective sprocket delivers its gripper means is assured.

3,445,888

GRANULATING DEVICE

Heinz Otto Wilhelm Woltzel, Stuttgart-Feuerbach, Germany, assignor to Werner & Pfleiderer, Stuttgart-Feuerbach, Germany, a corporation

Filed Jan. 20, 1967, Ser. No. 610,653
Claims priority, application Germany, Jan. 21, 1966, W 40,768
Int. Cl. B02c 4/02
U.S. Cl. 18—9 7 Claims



The invention relates to a granulating device in which a pair of grooved rollers coact to granulate the material therebetween. Each roller is journalled in a mounting member which is pivotally supported at one end. A releasable tensioning means pulls the other ends of the mounting members toward each other thereby securing the rollers in a predetermined operational position in reference to each other. The purpose of this arrangement is that the relative position of the rollers remains unchanged during operation and that when the rollers are temporarily separated from each other for purpose of servicing and the device is then reassembled the rollers will automatically reoccupy the same relative position. However, it has been found that expansion or contraction of the tensioning means due to changes in the temperature thereof as may occur, intentionally or accidentally, during operation will affect said predetermined operational position. The present invention resides in providing temperature compensating means for controlling the operational temperature of the tensioning means so that the relative operational position of the rollers and thus the working pressure remains substantially constant.

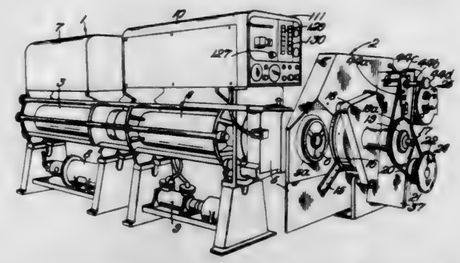
3,445,889

EXTRUDING METHODS AND APPARATUS

John Harold Barwell, Cambridge, and Donald James Lanham, Swavesey, England, assignors to Barwell Engineering Ltd., Cambridge, England, a British company

Filed Mar. 28, 1966, Ser. No. 542,443
Claims priority, application Great Britain, June 29, 1965, 27,566/65
Int. Cl. B29f 3/06
U.S. Cl. 18—12 15 Claims

Extruding apparatus utilizing a hydraulic cylinder having means for applying a constant predetermined pressure to said cylinder for extruding material at a constant rate and a knife mounted for rotation past the extruding nozzle so that the knife passes the nozzle at a constant



predetermined repetition rate but travels faster as it passes the nozzle than at other points of the cycle.

3,445,890

TWO-STAGE EXTRUDER

Eugene E. Heston, Akron, John F. Stroup and William S. McCormick, Cuyahoga Falls, and Heinrich J. Wurgler, Uniontown, Ohio, assignors to NRM Corporation, Akron, Ohio, a corporation of Ohio

Filed Dec. 8, 1966, Ser. No. 600,123
Int. Cl. B29f 3/02
U.S. Cl. 18—12 12 Claims



A multi-stage extruder including a first stage provided with a transition section at the downstream end of the first stage preceded by a metering section and compression section for supplying semi-fluxed material to the transition section, such transition section having a first helical flight defining a first helical channel through which the material is advanced from the metering section, and a second helical flight defining a second helical channel, which second helical flight gradually diverges from the first helical flight to cause a progressively decreasing axial width in the first channel and a progressively increasing axial width in the second channel, and a clearance between the wall of the cylinder and the crest of the second helical flight providing restricted communication between the first and second channels for flow of material from the first channel into the second channel; and a second stage downstream of the first stage.

3,445,891

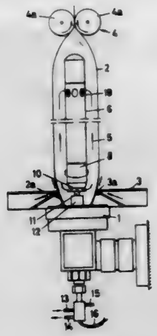
APPARATUS FOR MANUFACTURING FILM FROM THERMOPLASTIC RESINOUS FILM-FORMING MATERIALS

Jon Thordarson, Reykjalundur, Reykjavik, Iceland

Filed Oct. 24, 1966, Ser. No. 589,135
Claims priority, application Norway, Oct. 27, 1965, 160,235
Int. Cl. B29d 23/04
U.S. Cl. 18—14 5 Claims

Apparatus is described for the continuous extrusion of thermoplastic seamless tubing which is immediately cooled following extrusion by a radially directed cooling gas against the internal surface of the tube. To insure that the cooling gas stream is uniform thus minimizing irregularities in the tube, the nozzle means having an

annular radially directed outlet passage is rotatably mounted so that any irregularities in the cross section



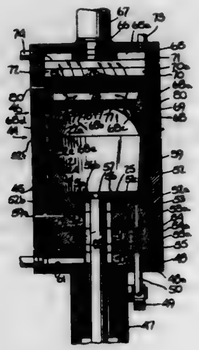
of the air stream or in the nozzle means itself are cancelled out through rotation of the nozzle means.

3,445,892

PLASTIC LINERS IN RECEPTACLES

Stephen W. Amberg, St. James, N.N.Y., and Ralph G. Amberg, Monticello, Ind., assignors, by mesne assignments, to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio

Filed Dec. 4, 1964, Ser. No. 415,930
Int. Cl. B29c *17/00*
U.S. Cl. 18—19 **16 Claims**



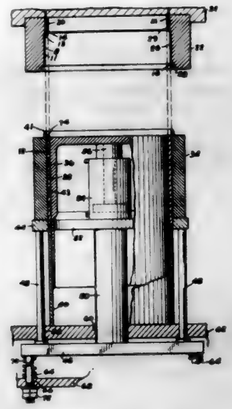
Method of forming an unseamed plastic film liner for a receptacle such as a deep-draft receptacle, by partially prestretching the film area in direction generally perpendicular to its plane, and then fully stretching the film in opposite direction into conforming relation with the interior of the receptacle, using heat and fluid pressure. Laminate of lower softening temperature plastic material on liner commensurately bonds liner to receptacle. Upper and lower cavity die socket apparatus for controlling shape of liner material and application of heat and fluid pressure to liner material during said forming. Receptacle having "skip seal" joint at bottom plug, and unseamed plastic film interior liner bonded thereto using other plastic material, and using said method.

3,445,893

APPARATUS FOR COMPACTING A METAL POWDER BRAKE TRACK

Charles Robert Talmage, New Canaan, Conn., assignor to Motor Wheel Corporation, Lansing, Mich., a corporation of Michigan

Continuation of applications Ser. No. 342,159 and Ser. No. 342,121, Feb. 3, 1964. This application Apr. 10, 1967, Ser. No. 629,732
Int. Cl. B21d *53/50*
U.S. Cl. 18—36 **9 Claims**



For purposes of summarizing this disclosure and not by way of limitation, a steel brake drum shell is lined with sintered iron by compacting ferrous powders directly into the shell. The shell with the compact therein is then heated to sinter the ferrous powders and bond the track to the shell. The shell has a cylindrical body open at the front end thereof. The back end of the shell may be either open, partially closed by a radial flange to which a drum back is to be attached, or substantially closed by an integral back portion of the shell. The ferrous powders are compacted into the shell by a press having an upper die that retains the shell therein with the front open end of the shell opening downwardly. A lower set of dies includes a core die axially movable into the shell to form a brake track mold. The press is constructed so that the core can either move through the back or bottom thereon depending on whether the back is open, partially closed or substantially closed. The lower dies are arranged to form an annular receptable for receiving ferrous powders to be compacted into the shell. The bottom of the receptacle is closed by an annular punch movable relative to other parts of the lower die. When the press is operated, the punch transfers the ferrous powders from the receptacle to the mold and compacts the powders therein in direct contact with the shell.

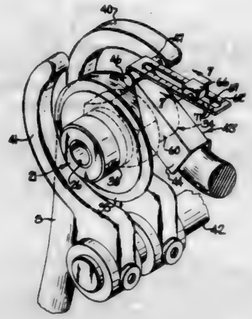
3,445,894

CREEL STOP MOTION RESPONSIVE TO SLIVER WEIGHT VARIANCES

James Arthur F. Rayfield, Stanley, and Joe R. Whitehurst, Kings Mountain, N.C., assignors, by mesne assignments, to The Warner & Swasey Company, Cleveland, Ohio, a corporation of Ohio

Continuation-in-part of application Ser. No. 362,797, Apr. 27, 1964. This application Feb. 3, 1967, Ser. No. 613,859
The portion of the term of the patent subsequent to Feb. 28, 1984, has been disclaimed
Int. Cl. D01g *31/00*
U.S. Cl. 19—.25 **6 Claims**

A stop motion characterized by detector fingers riding upon moving slivers and being of such weight as to drop from an inoperative to an operative position when the weight per unit length of a respective sliver drops a predetermined amount below a desired standard, or the sliver becomes unduly slack, parted or exhausted, to stop the machine to which the slivers are being directed.

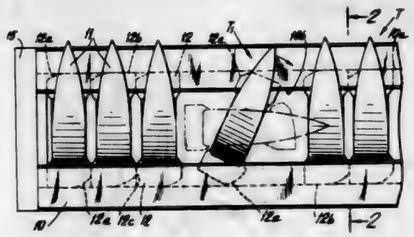


3,445,895

PICKER TOOTH

Hooshang Barbod, El Segundo, Calif., assignor to Crompton & Knowles Corporation, Worcester, Mass., a corporation of Massachusetts

Filed July 12, 1967, Ser. No. 652,940
Int. Cl. D01b *1/00*; D01g *19/00*
U.S. Cl. 19—97 **3 Claims**



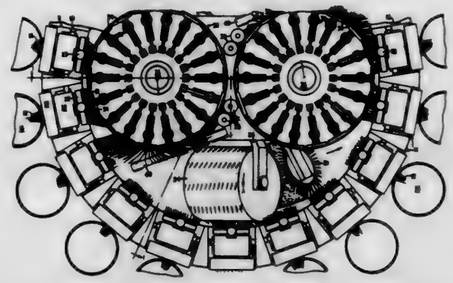
A mass of fibers can be shredded by a series of picker teeth having respective bases closely received in an enlarged portion of a longitudinal slot in a picker bar, each tooth also having a shank extending through a reduced portion of the slot and joining the base to the pointed working part of the tooth located outside the bar. Each base has opposite end surfaces closely opposing and slidable along the respective side walls of the slot's enlarged portion, and the base also has opposite side surfaces extending transversely of the slot, the width of the slot's reduced portion being greater than the width of the base between its opposite side surfaces but less than the length of the base between its opposite end surfaces. Each base also has opposite corners rounded on a radius such as to permit rotation of the tooth to a position in which the length of its base extends lengthwise of the slot instead of transversely thereof. Substantial movement of the bases lengthwise of the slot is prevented by means which are releasable to permit removal of at least one end tooth while its base extends transversely of the slot, whereby a remote defective tooth can be rotated to allow its base to be withdrawn through the slot's reduced portion.

3,445,896

COMBING MACHINES FOR WOOL AND OTHER TEXTILE FIBRES

Malcolm Chaikin, 26 Martin Road, Centennial Park, New South Wales, Australia; Alexander Douglas Dircks, 18 Woolwich Road, Hunters Hill, New South Wales, Australia; and Desmond Michael Rokfalussy, 213 Carrington Road, Coogee, New South Wales, Australia

Filed Nov. 29, 1966, Ser. No. 597,597
Claims priority, application Australia, Dec. 9, 1965, 67,734/65
Int. Cl. D01g *19/10*
U.S. Cl. 19—123 **7 Claims**



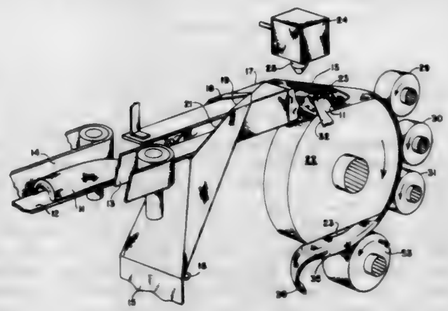
A combing machine is formed of a plurality of feeding mechanisms disposed in an annular arrangement with the means for drawing and combing the fibres disposed inwardly from the feed mechanisms. Initially, a combing means is provided to rotate relative to the feeding means combing the forward ends of the fibres. Then clamping and withdrawing means including other combing means are provided for drawing the fibres radially inward and combing them as they are removed from the feed mechanisms.

3,445,897

METHOD OF MAKING SANITARY NAPKINS AND THE LIKE

Norman J. Franz, Colerain Township, Hamilton County, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

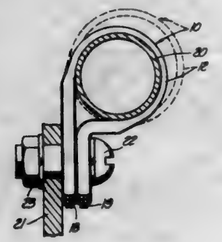
Filed Feb. 23, 1967, Ser. No. 618,149
Int. Cl. A61l *15/00*; A61f *13/18*
U.S. Cl. 19—144.5 **7 Claims**



A method of making sanitary napkins having arcuately-shaped cores by folding the core longitudinally, whereby it assumes an essentially flat and straight form. An outer wrapper of fabric material is folded around the core such that the longitudinal edges of the wrapper are overlapped. The folding pressure on the core is then released thereby

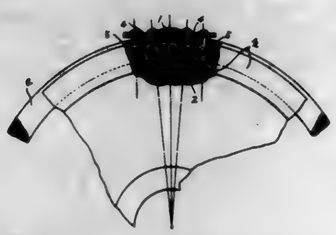
allowing the core to reassume its original shape. An adhesive applied to the overlapped edges adheres the outer wrapper to maintain the components in assembled relationship.

3,445,898
HEAT SHRINKABLE CABLE CLAMP
Roger S. Goodrich, Fulton County, Ga., assignor to Raychem Corporation, Menlo Park, Calif., a corporation of California
Filed Oct. 19, 1967, Ser. No. 676,414
Int. Cl. F16l *3/12*
U.S. Cl. 24—16 10 Claims



A clamp for use with cable, wire bundles, or the like of differing sizes and having a heat recoverable portion for engaging the object to be supported and a rigid, nonrecoverable portion for connection to a wall or other surface.

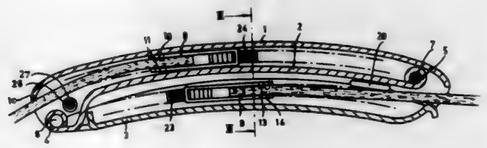
3,445,899
METHOD OF JOINING AN ENDLESS BELT TOGETHER AND DEVICE THEREFOR
Masaru Koga, 21, 14, Fujigaoka-cho, Suita-shi, Osaka-fu, Japan
Filed Apr. 3, 1967, Ser. No. 627,741
Int. Cl. F16g *3/07*
U.S. Cl. 24—37 5 Claims



Any belting for a V-belt or a plain belt is cut into predetermined lengths. Then, said belting is curved in a loop form, and its end portions are brought into contact with each other, and along the end portions, their faces and backs are brought into contact with a face joint and a back joint respectively. Inclined pins fit from the face joint into the back joint and secure the end portions firmly. The inclined pins are inclined substantially radially with the center of the axis of the pulley as their center. In addition, vertical pins fit from the face joint into the belt in a direction at right angles to the surface of the belt which is moving forward in a rectilinear direction.

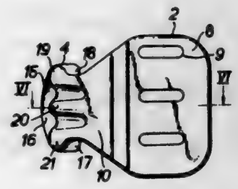
The inclined pins perform a natural connecting operation against a pull when the connecting part comes forward on the pulley and its form is curved. And when the connecting part moves forward in a rectilinear direction, the vertical pins perform a natural connecting operation. Thus, each kind of pin takes a share in performing its own connecting operation. There is no unnatural, unbalanced pull between the belt and a joint metal fitting.

3,445,900
BRACELET CLASP
Emile Currat, 9, Chemin du Centurion, 1227 Carouge, Geneva, Switzerland
Filed Dec. 29, 1967, Ser. No. 694,688
Claims priority, application Switzerland, Jan. 6, 1967, 210/67
Int. Cl. A44b *21/00*
U.S. Cl. 24—71 7 Claims



Bracelet clasp made of three elements pivoted one to the other and able to be folded over one over the other in order to become superimposed in closed position, the extreme elements having a U-shaped cross section fitted with adjustable securing means on one of the extremities of the bracelet.

3,445,901
FASTENERS
Helmut Kamper, Hannover, Germany, assignor to Brero & Co., Ipsach, Bern, Switzerland, a Swiss company
Filed Feb. 1, 1967, Ser. No. 613,193
Claims priority, application Germany, Feb. 2, 1966, K 58,305
Int. Cl. A44b *11/25*
U.S. Cl. 24—201 2 Claims

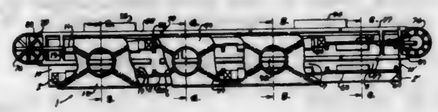


A two-part fastener for detachably securing two clothing parts together including a hammerhead-shaped member and a complementary recessed member. Each member has a set of contact faces, the faces being disposed at the corners of a trapezium. The hammerhead-shaped member has three ribs which serve to reinforce the neck of the hammerhead and act as centering guides.

3,445,902
METHOD AND APPARATUS FOR RECONDITIONING PILE FIBERS
Sherman Rosenberg, Leawood, Kans., Harold W. Smith, Kansas City, Mo., and Walter D. Hodge, Roeland Park, Kans., assignors, by mesne assignments, to Beloved Toys, Inc., Kansas City, Mo., a corporation of Missouri
Filed Dec. 13, 1965, Ser. No. 513,350
Int. Cl. D06c *29/00;* B08b *3/10, 5/00*
U.S. Cl. 26—2 5 Claims

The method and apparatus for cleaning and reconditioning various articles having pile fibers wherein such article is moved to a series of confined areas in sequence

and created by first jetting air against the fibers of the article to remove loose foreign matter and then directing steam thereon to heat and dampen the pile fibers and then directing hot air around the article to dry same and then subjecting the article to chilled air to reduce the temperature and shock the fibers into remaining upright. The apparatus has a series of compartments arranged in a series with a conveyor for moving articles through the



chambers, the chambers being arranged with walls providing ducts with blowers whereby in the first chamber air jets are directed therein against the article, and in the second chamber steam is directed therein, the third chamber has hot air directed therein, and the fourth chamber has chilled air directed therein. The first chamber being connected to an exhaust system for removing air therefrom and aid in effecting flow around the articles passing therethrough.

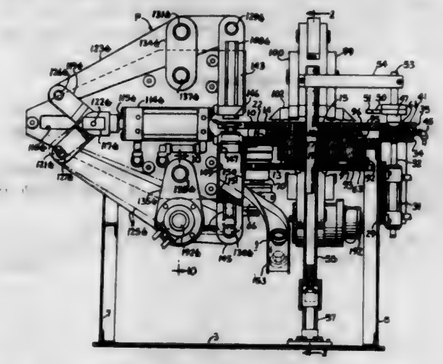
3,445,903
METHOD AND DEVICE FOR MANUFACTURING CYLINDRICAL CAPACITORS
Sven Linderholm and Birger Diser, Ludvika, Sweden, assignors to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden
Filed Oct. 13, 1965, Ser. No. 495,382
Claims priority, application Sweden, July 19, 1965, 9,489/65
Int. Cl. H01g *13/02;* H01d *17/28;* B21d *51/10*
U.S. Cl. 29—25.42 1 Claim



In a method of manufacturing condenser bushings comprising a number of cylindrical capacitor plates, the circumferential length of each such plate is somewhat greater than the corresponding circumference of the bushing so that the two ends of the plate overlap each other. Before the plate is wound into the bushing, the plate end which is first rolled up is provided with perforations, thereby forming flaps from the plate material. These flaps penetrate the insulating layer and make contact with the other end of the plate when this is completely wound around the bushing.

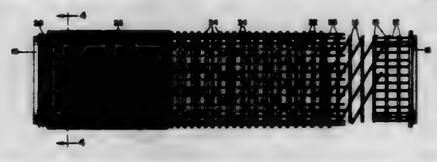
3,445,904
APPARATUS FOR MAKING FORGINGS
George Harrison, Berwyn, and Nelson K. Harrison, Riverside, Ill., assignors, by mesne assignments, to North American Rockwell Corporation, Pittsburgh, Pa., a corporation of Delaware
Filed Oct. 6, 1966, Ser. No. 584,695
Int. Cl. B23p *23/04*
U.S. Cl. 29—33 13 Claims

A machine for casting and forging metal pieces in which the casting metal is caused to engage a support adjacent to the casting mold and, following casting, the cast piece is separated from the mold and carried by the support to a forging station for the forging operation and is there-



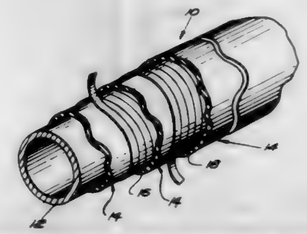
after carried by the support to the trimming station where the forged part is separated from the trim part.

3,445,905
DANDY ROLL
John A. Spencer, South Hadley Falls, Mass., assignor to H. M. Spencer, Inc., Holyoke, Mass., a corporation
Filed Aug. 31, 1966, Ser. No. 576,314
Int. Cl. B21b *27/02, 31/08*
U.S. Cl. 29—121 3 Claims



In a cylinder roll for papermaking machines, a cylindrical supporting structure for a wire mesh covering comprising, a plurality of longitudinally-spaced coaxial circular head members, a plurality of circumferentially-arranged supporting members extending between said head members and arranged parallel to the axis of said head members and connected thereto, a spirally-wound thin gauge winding wire of rectangular cross section having longitudinally-spaced outwardly projecting notches, and a wire mesh covering outwardly spaced from said supporting members and supported by said winding wire.

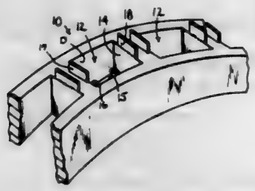
3,445,906
CONSTRUCTION OF ROLL FOR MACHINERY
Paul J. Mitchell, Jr., Griffin, Ga., assignor to S W Industries, Inc., Newton, Mass., a corporation of Massachusetts
Filed Sept. 7, 1966, Ser. No. 577,724
Int. Cl. B60b *7/04, 9/00;* B21b *31/08*
U.S. Cl. 29—127 4 Claims



A rubber covered roll comprises a dimensionally stable core and a relatively hard elastomeric covering having

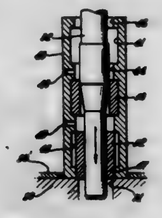
encapsulated therein one or more plies of circumferentially extending strands. The strands, which are inert, have greater tensile strength than the elastomer. The elastomer is rubber having a preferred hardness in the range of 0 to 15, 1/6" Plastometer, and a best hardness in the range of 0 to 5, 1/6" Plastometer.

3,445,907
ROLLER RETAINING METHOD FOR ROLLER BEARING SEPARATORS
Daniel F. Greby, Buena Park, Calif., assignor to Industrial Tectonics, Inc., Ann Arbor, Mich., a corporation of Michigan
Filed Feb. 16, 1967, Ser. No. 616,668
Int. Cl. B21h *1/12*; **B21d** *53/12*; **B23p** *13/02*; **F16c** *33/46*
U.S. Cl. 29—148.4 **4 Claims**



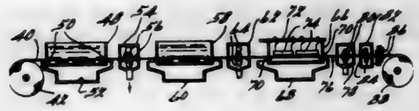
A method of making roller bearing pockets in a solid ring retainer, which comprises the steps of first providing a solid ring having an external, circumferential rib thereon, then drilling circular openings radially from one side to the other side of the solid ring spaced circumferentially along the central circumference of the ring, then broaching the ring to form the circular openings into openings each having planar sides and having its circumferential sides spaced a distance slightly less than the diameter of said roller, then restraining the circumferential ends of the rib portion and removing the central portion between the restrained ends leaving tabs having sides facing said openings coplanar with said circumferential sides of said openings, then burnishing said openings into an opening having its circumferential sides spaced a distance slightly greater than the diameter of said roller so that the surface of a bearing is tangent to said circumferential sides.

3,445,908
METHOD OF MAKING BEARING MEMBER
Frederick A. Straub, 4222 Los Nietos Drive, Los Angeles, Calif. 90027
Filed Aug. 2, 1966, Ser. No. 569,674
Int. Cl. B21d *53/10*; **F16c** *13/02, 33/00*
U.S. Cl. 29—149.5 **4 Claims**



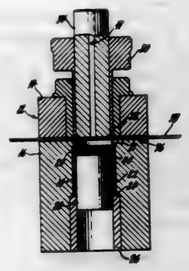
A method providing an inner bearing surface in a bearing member, which may be employed as the inner member of sleeve or spherical type bearings, by plastically expanding bearing material inserts into a shallow annular recess within the bearing member bore so as to temporarily expand the bearing member within its elastic limit so as to permanently deform the bearing material insert and relieving the expansion force so that the bearing member may spring back tightly around the permanently expanded insert.

3,445,909
METHOD OF MAKING BEARING MATERIAL
Austin H. Beebe, Jr., Ann Arbor, Mich., assignor to Federal-Mogul Corporation, a corporation of Michigan
Filed Nov. 2, 1966, Ser. No. 591,583
Int. Cl. B21d *53/10*
U.S. Cl. 29—149.5 **9 Claims**



The method of making a bearing component which comprises depositing an overplate of a soft bearing metal on one or both face surfaces of a metallic bearing substrate and thereafter compacting the overplated substrate in a manner to fill any surface pores and indentations on the face of the substrate with the overplate, and providing a substantially continous non-porous residuary film of the overplate thereon, and whereafter the resultant composite material is subjected to further metal working operations for fabricating a bearing component therefrom.

3,445,910
METHOD OF MANUFACTURING A WIRE CLOTH REGENERATOR
Harry I. Duryee, Birmingham, and John C. Steiner, Warren, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 9, 1966, Ser. No. 578,301
Int. Cl. B21d *39/00*; **B23p** *15/16, 17/00*
U.S. Cl. 29—157.3 **6 Claims**



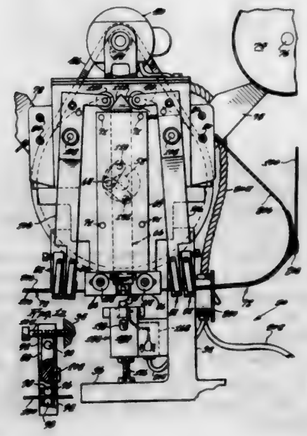
A method for fabricating a wire cloth regenerator in which a housing having an inturned flange on its lower end and an open upper end is placed beneath a punch. A strip of wire is fed between the punch and the open upper end of the housing and a plurality of discs are individually and successively punched from the wire strip and pushed into the housing. The open upper end is subsequently deformed to lock the plurality of discs within the housing.

3,445,911
METHOD OF MAKING TAPERED SPRING LEAF
Alex F. Stamm, Rochester, Mich., assignor to North American Rockwell Corporation, a corporation of Delaware
Filed Aug. 22, 1966, Ser. No. 574,200
Int. Cl. B21f *35/00*
U.S. Cl. 29—173 **6 Claims**



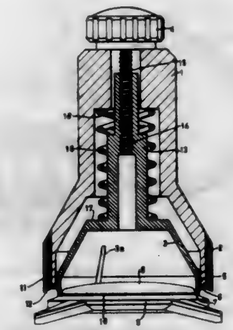
A method of making a vehicle spring beam comprising forming a steel beam of constant width from end to end and a relatively thick center portion from which the opposite ends taper toward the ends in decreasing cross section, laterally compressing the beam center portion to reduce the width of the beam at that region while retaining the beam width in the remainder of the beam and to displace metal to materially increase the thickness of the center portion, and welding axially aligned trunnion pins upon the beam at opposite sides of the thickened center portion.

3,445,912
SEMIAUTOMATIC WIRE-FED DUAL TOP STOP PRODUCTION AND SECUREMENT MACHINE FOR SLIDE FASTENERS
Morris Perlman, 1326 38th St., Brooklyn, N.Y. 11218
Filed May 17, 1966, Ser. No. 550,737
Int. Cl. A41h *37/06*; **B21d** *53/50*; **B29d** *5/00*
U.S. Cl. 29—207.5 **4 Claims**



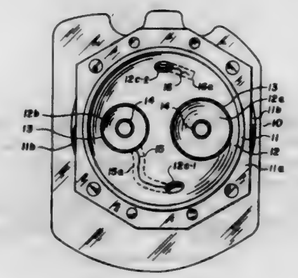
A semiautomatic wire-fed dual top stop production and securement machine for slide fasteners comprising a flat wire feed unit adjacent each side of a hammer unit comprised of a ram and driver assembly comprising movable parts for cutting simultaneously staples with spaced apart pointed ends and bending the staples to form U-shaped top stops, means for piercing the tapes simultaneously, and then bending the staples simultaneously to overlap their ends to secure them to slide fastener stringers supported on portions of the clincher dies.

3,445,913
APPARATUS FOR EXTRACTING WATCH GLASSES
Ervin Piquerez, Bassecourt, Switzerland
Filed May 16, 1966, Ser. No. 550,388
Claims priority, application Switzerland, May 18, 1965, 6,938/65; Sept. 13, 1965, 12,680/65; Oct. 12, 1965, 14,046/65; Feb. 24, 1966, 2,675/66
Int. Cl. B23p *19/04*
U.S. Cl. 29—210 **5 Claims**



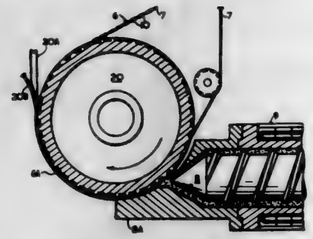
This disclosure concerns appartus for extracting from a watch case a watch glass which has gripping means distributed along its periphery, such as a groove or projections, which includes grasping means such as a sleeve having a central opening of a diameter greater than the diameter of the glass and adapted to engage the gripping means on the glass, with means for exerting an axial force distributed about the periphery of the glass in a direction perpendicular to the force for extracting the glass by bearing against the watch case.

3,445,914
METHOD OF REPAIRING AIRCRAFT CYLINDER HEADS
George A. Altgelt, San Antonio, Tex., assignor to Chrome Plate, Inc., San Antonio, Tex., a corporation of Texas
Continuation-in-part of application Ser. No. 468,779, July 1, 1965, now Patent No. 3,246,392. This application Apr. 18, 1966, Ser. No. 543,321
Int. Cl. B23p *7/04, 17/00*
U.S. Cl. 29—402 **13 Claims**



A method of repairing damaged aluminum castings comprising the steps of preheating a casting to a temperature ranging from 250° to 1,000° Fahrenheit dependent upon the thickness of the portion undergoing repair, heating the damaged portion until such portion begins to become fluid, welding the damaged portion with inert gas shielding to provide complete fusion with the casting and stress relieving the casting.

3,445,915
METHOD OF PRODUCING FOLDED THERMOPLASTIC STRIPS FOR SLIDING CLASP FASTENERS
Eric Engel Cuckson, Penrith, New South Wales, and Arthur Llewelyn Jones, Glenbrook, New South Wales, Australia, assignors to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed Oct. 21, 1966, Ser. No. 588,436
Int. Cl. B29d 5/00
U.S. Cl. 29—408 3 Claims



A method for producing a strip of interconnected thermoplastic interlocking elements for a sliding clasp fastener, wherein thermoplastic material is continuously extruded from an extrusion nozzle onto a plurality of juxtaposed pairs of spaced yarn threads which are advanced past the extrusion nozzle on a roller, such that transverse elements are cast on the periphery of the roller bonded to each pair of yarn threads, whereafter a continuous backing strip is cut from the thermoplastic material extruded onto the roller and each strip is removed from the roller by drawing up its respective pair of yarn threads. In order to form stringers, each strip is folded along its length to bring the pair of yarn threads into confronting relation at one longitudinal edge of the strip and a mounting tape is introduced within the fold of each strip and secured thereto by stitches passing over the transverse elements and through the mounting tape.

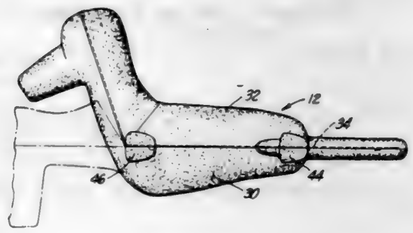
3,445,916
METHOD FOR MAKING AN ANATOMICAL CHECK VALVE
Rudolf R. Schulte, 3328 Calle Fresno, Santa Barbara, Calif. 93105
Filed Apr. 19, 1967, Ser. No. 632,019
Int. Cl. B23p 17/00; A61f 1/22; F16k 15/14
U.S. Cl. 29—458 2 Claims



This invention relates to a method for making an anatomical check valve such as a valve for the heart. The valve permits flow in one direction and prevents it in the other. This method enables a thin body to be made with the necessary structural accuracy and integrity required for survival of a patient in which it is implanted.

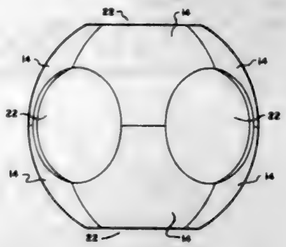
3,445,917
METHOD OF MANUFACTURING STUFFED TOYS
Seymour Adler, Los Angeles, Calif., assignor to Mattel, Inc., Hawthorne, Calif., a corporation of California
Filed Sept. 14, 1965, Ser. No. 487,121
Int. Cl. B32b 31/00; A63h 3/02
U.S. Cl. 29—463 7 Claims

A stuffed toy made by molding stuffing members from pieces of foamed polymer, each member having a flat surface splitting a body and appendages. The surfaces are adhered together with wire at their interface extending from the body into the appendages. The stuffing is then covered with a stretch fabric and appendages are bent to



a natural position on the body. In one form a notch is molded in one stuffing member to facilitate bending and in another form the stuffing is cut in to the wire to permit turning an appendage about the axis of the wire.

3,445,918
METHOD OF FABRICATING A SPHERICAL VESSEL
Nicholas D. Romanos, Chattanooga, Tenn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Dec. 30, 1966, Ser. No. 606,357
Int. Cl. B23k 31/02, 1/20; B65d 7/04
U.S. Cl. 29—471.1 10 Claims



A method of fabricating a spherical vessel wherein the structural elements that make up the vessel are circular discs that are dished to the curvature desired to form the vessel. The disc are weldedly assembled into a skeletal spherical structure and circular cuts are made around paths that intersect the loci of attachment between adjacent discs. The circular openings created thereby are then filled by other, similarly formed circular discs to complete the vessel. In one form of the invention the skeletal structure is provided by connecting discs in edge-to-edge relation. In another form, it is provided by spacing the discs and interconnecting them by connectors having the desired curvature.

3,445,919
METHOD OF USING A SOLDER CONTACT FLUID
Saba A. Saba, Fountain Valley, Calif., assignor to Electronic Engineering Company of California, a corporation of California
Filed July 11, 1968, Ser. No. 744,234
Int. Cl. B23k 35/22
U.S. Cl. 29—471.1 10 Claims

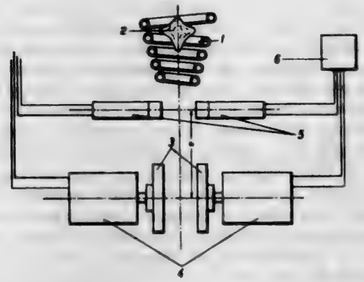
Molten solder, or solder to be melted, is contacted during processing thereof with a hydrophilic, but otherwise unctuous, organic material having a flash point

substantially greater than the temperature at which the solder is processed. The organic material is an oil-in-water emulsifier exemplified by a higher fatty acid ester of a polyhydric alcohol, the ester having one or more



substituents thereon of sufficient hydrophilic nature to cause the ester to be hydrophilic. A specific material is the higher fatty acid ester of sorbitan substituted with polyoxyethylene.

3,445,920
ALUMINUM BASE ALLOY PRODUCTION
Paul Esslinger, Stuttgart, Heinrich Winter, Eschborn Taunus, and Walter Wolf, Frankfurt am Main, Germany, assignors to the Federal Republic of Germany as represented by the Secretary of Defense, Bonn, Germany
Filed May 5, 1966, Ser. No. 547,939
Claims priority, application Germany, May 11, 1965, B 81,854
Int. Cl. C21d 7/14; B22d 19/00
U.S. Cl. 29—472.3 4 Claims



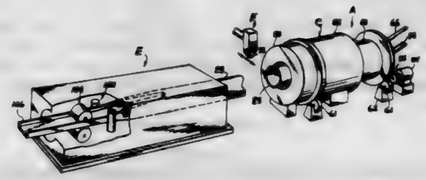
An aluminum base alloy is produced by melting the alloy and passing it between closely spaced cooling and forming surfaces which compact the molten alloy into a thin sheet having a thickness of 1 mm. or less.

3,445,921
METHOD OF MAKING A PRINTED CIRCUIT BOARD MASTER
Albert C. Leenhouts, Granby, Conn., assignor to The Superior Electric Company, Bristol, Conn., a corporation of Connecticut
Filed Dec. 15, 1966, Ser. No. 602,012
Int. Cl. B23p 3/00; B41m 3/08; H05k 3/20
U.S. Cl. 29—527.2 11 Claims



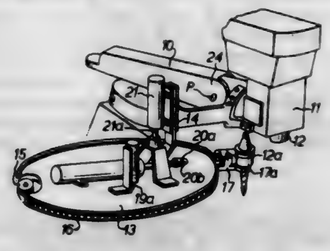
A master for making printed circuits is made by forming the desired pattern in one surface of a light pervious body by machining grooves, the width of which correspond to the desired pattern width, and rendering the remainder of the body opaque to light.

3,445,922
METHOD AND APPARATUS FOR THE FORMING OF LONGITUDINAL STRUCTURAL SHAPES FROM CAST TUBE
George R. Leghorn, 1027 20th St., Santa Monica, Calif. 90403
Filed Feb. 11, 1966, Ser. No. 538,506
Int. Cl. B23p 17/00; B21d 5/08, 51/00
U.S. Cl. 29—527.6 30 Claims



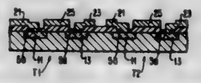
The forming a structural members such as I-beams, channels, plates and the like wherein a tubular section is first formed by a suitable process (e.g. by centrifugal casting) and such tubular section is then collapsed to form the selected structural section.

3,445,923
MACHINE TOOLS
Victor Horace Balding, Beavers Wood, Ringland Road, Taverham, Norwich, Norfolk, England
Filed Jan. 23, 1967, Ser. No. 610,983
Int. Cl. B23q 3/155
U.S. Cl. 29—568 6 Claims



The working tools are each mounted in an arbor which are mounted spaced apart around an endless carrier such as a chain with hydraulic means for automatically bringing the tools successively from the carrier into the quill of the machine for a working operation and back to the carrier which then moves to bring the next tool into position.

3,445,924
METHOD FOR FABRICATING INSULATED-GATE FIELD EFFECT TRANSISTORS HAVING CONTROLLED OPERATING CHARACTERISTICS
George Cheroff, Peekskill, and Frederick Hochberg, Yorktown Heights, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed June 30, 1965, Ser. No. 468,481
Int. Cl. H01g 13/00; H01l 7/00
U.S. Cl. 29—571 7 Claims



A method for fabricating electrical circuit components, field effect transistors, for example, in which the operating characteristics of the field effect devices are tailored by eliminating or passivating, surface traps along the conduc-

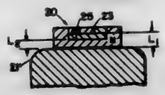
tion channel. A layer of an active metal, aluminum, for example, is deposited on the surface of an insulator, the latter being disposed in overlying relationship with the surface of a field effect transistor which has spaced source and drain regions. The active metal is disposed between the source and drain region. The transistor is subjected to heating for a time and temperature sufficient to passivate or eliminate surface traps. By heating for a temperature in a specified range, varying degrees of passivation can be attained. Where each of a plurality of devices requires a different operating characteristic, separate metallizations and heat treatments are carried out for each device. Heating in the absence of metallization does not alter the operating characteristic of the insulated gate field effect transistor.

3,445,925

METHOD FOR MAKING THIN SEMICONDUCTOR DICE

Israel A. Lesk, Scottsdale, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed Apr. 25, 1967, Ser. No. 633,631
Int. Cl. H01l 7/54
U.S. Cl. 29—577 **3 Claims**



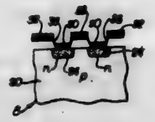
A process for making thin semiconductor devices wherein the semiconductor wafer starting material is initially lapped to a very thin value. Glass and a dummy substrate are then sandwiched to the wafer for further processing and to prevent breakage of the wafer when semiconductor devices such as transistors are constructed therein. Then the glass and dummy substrate are removed, leaving thin semiconductor dice having a very low thermal resistance to heat emanating from PN junctions therein.

3,445,926

PRODUCTION OF SEMICONDUCTOR DEVICES BY USE OF ION BEAM IMPLANTATION

David B. Medved, Los Angeles, and Louis A. Garasi, North Hollywood, Calif., assignors to Electro-Optical Systems, Inc., Pasadena, Calif., a corporation of California

Filed Feb. 28, 1967, Ser. No. 619,461
Int. Cl. H01l 7/54; B23k 9/00
U.S. Cl. 29—578 **8 Claims**



An exemplary method for producing a semiconductor component or device by the use of ion beam implantation. The surface of a silicon substrate is provided with a temporary chemically-removable layer. An ion beam is directed against a selected surface area of the layer to generally simultaneously and automatically (1) type-convert by ion implantation a region of the substrate below the area and (2) sputter away a portion of the layer to provide a contact-forming cavity above the converted region. An electrically-conductive chemically-resistant film is applied to the entire pretreated surface, with a contact portion of the film occupying the cavity, an intermediate portion of the film overlying the removable layer surrounding the cavity, and a thin annular portion of the film interconnecting the other portions. The removable layer is then removed as with a suitable etchant solution, and the intermediate and connecting film portions are removed to leave a diode device having an accurately positioned contact.

3,445,927

METHOD OF MANUFACTURING INTEGRATED SEMICONDUCTOR CIRCUIT DEVICE

Hans Ullrich, Munich, and Erhard Sussmann, Poing, Germany, assignors to Siemens Aktiengesellschaft, Berlin, Germany, a corporation of Germany

Filed June 27, 1966, Ser. No. 560,409
Claims priority, application Germany, June 29, 1965, S 97,877
Int. Cl. B01j 17/00; H01l 5/00
U.S. Cl. 29—578 **7 Claims**



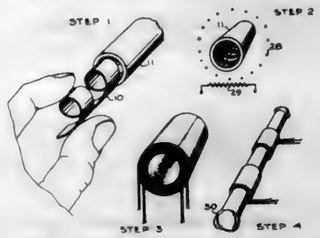
Described is a method of producing an integrated circuit with several electrical components arranged in a single semiconductor body. One main surface of a semiconductor disc is coated, from a gaseous phase, with an insulating layer, and the opposite main surface of the semiconductor disc is coated in at least two completely separated regions, with an insulating protective layer, for example SiO_2. A doping substance from the gaseous phase is indiffused into the free semiconductor surface between the individual regions of protective layer and produces the opposite conductance type to that of the semiconductor disc, which is impermeable to said regions of protective layer. The doping material is diffused into the exposed portions of the semiconductor surface to such a depth that the conductance type of the semiconductor material beneath the exposed semiconductor surface reverses everywhere into the opposite type while only beneath the regions of protective layer remain regions of the original conductance type of the semiconductor disc, which are completely separated from each other by regions of opposite conductance type but bordered by protective layer following at least a partial removal of protective layer. These regions are further processed into components of integrated circuits.

3,445,928

MAGNETOMETER METHOD OF MANUFACTURE

John C. Beynon, Los Angeles, Calif., assignor to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware

Original application Feb. 9, 1962, Ser. No. 172,291, now abandoned. Divided and this application Mar. 25, 1966, Ser. No. 538,478
Int. Cl. H01f 41/02
U.S. Cl. 29—606 **5 Claims**



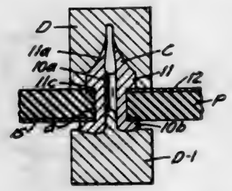
A method of fabricating a magnetometer sensing element which method includes the steps of: (1) forming a thin elongated strip of magnetically saturable material into a resilient helix; (2) disposing said helix within the bore of a hollow cylinder of non-magnetic material so as to permit said helix to expand and resiliently bear outwardly against the inner wall of said cylinder; (3) exposing said cylinder and helix to temperatures sufficient to anneal the material of said helix; and (4) positioning windings on the exterior of said cylinder.

3,445,929

METHOD OF CONNECTING A TERMINAL TO A PRINTED CIRCUIT PANEL

Nicholas L. Wolf, 353 5th St. S., Sauk Rapids, Minn. 56379

Filed Aug. 3, 1966, Ser. No. 570,007
Int. Cl. B41m 3/08; H05k 3/20
U.S. Cl. 29—625 **2 Claims**



1. The method of ataching and reforming a terminal connector to a printed circuit panel having a predetermined circular pin aperture therein which consists in:

utilizing a terminal connector of a construction having a tubular body made integrally from a metal having high electro-conductivity, inherent resiliency and fair ductility, and provided with an outer reduced end of cylindrical shape and external diameter to closely fit said circular pin aperture, said body having an enlarged head having an under flange of annular shape for electrical connection against metal surrounding said pin aperture, said head being slotted diametrically to form opposed, parallel gripping jaws, and said body being further dimensioned in length to cause its outer end to project beyond said panel when inserted in said aperture;

positioning said body in said pin aperture and thereafter simultaneously applying force in opposite directions axially of said body to said head and to said outer end of said body, causing said outer end to be flared and riveted against one surface of said panel while simultaneously deforming opposed portions of said jaws inwardly by said force to thereby provide opposed, inwardly extending surfaces on said gripping jaws adapted to frictionally engage a terminal pin therebetween.

3,445,930

ONE-PIECE PLUGBOARD PLUG CONNECTOR

Bernard Edward Shlesinger, Jr., Annandale, Va., assignor to AMP Incorporated, Harrisburg, Pa.

Application July 26, 1965, Ser. No. 474,932, now Patent No. 3,275,973, dated Sept. 27, 1966, which is a continuation-in-part of application Ser. No. 321,125, Nov. 4, 1963. Divided and this application June 16, 1966, Ser. No. 558,043
Int. Cl. H02g 15/00
U.S. Cl. 29—629 **20 Claims**

A blank for a one-piece plug connector comprising a sheet metal piece of generally rectangular configuration including a body having front and rear end portions, and an intermediate portion; an elongated strip extending parallel to one side of the body and running from at least the intermediate portion toward the front portion and junctured behind the front portion; the front end portion including a strike-out means; the strike-out means being in advance of the juncture of the elongated strip, and the



elongated strip extending forward of the front end portion.

3,445,931

CUTLERY DRESSING TOOL

Lester O. Knudson, 713 W. Washington St., Lewistown, Mont. 59457

Filed June 29, 1966, Ser. No. 561,605
Int. Cl. B26b 1/00
U.S. Cl. 30—287 **7 Claims**



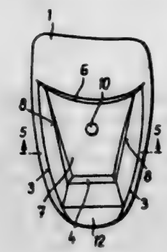
A cutlery dressing tool which combines a knife having a handle and blade with a cutting edge extending over one edge of the same which cooperates with a cutting attachment generally C-shaped in form and having curved bifurcated form with knife edges over partial extent of the same which cooperate with the cutting edge of the knife to provide a shear type cutting action.

3,445,932

ARTIFICIAL TOOTH

Karl Alfred Küpper, Sackingen, Germany, assignor to Vita Zahnfabrik H. Rauter K.G., Sackingen, Germany

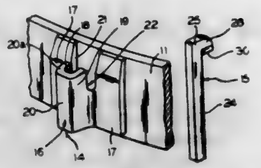
Filed Sept. 23, 1966, Ser. No. 581,623
Claims priority, application Germany, Sept. 27, 1965, V 29,401
Int. Cl. A61c 13/08, 13/00
U.S. Cl. 32—10 **10 Claims**



This invention provides an artificial tooth structure having a tooth body including a cavity for receiving a support core structure. The artificial tooth structure includes an elevation located in the cavity between wing-like ribs located on the rear portion of the said body.

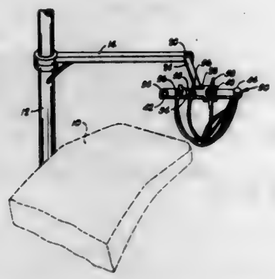
The elevation includes a plateau and longitudinal grooves disposed between the plateau and the said wing-like ribs. At least one transverse step is located on the elevation and is contiguous to the said plateau. The support core structure has corresponding stepped surfaces in abutting relationship to the surfaces within the said cavity.

3,445,933
ORTHODONTIC LOCK PIN
Peter C. Kesling, Green Acres, La Porte, Ind. 46350
Filed Jan. 10, 1968, Ser. No. 696,881
Int. Cl. A61c 7/00
U.S. Cl. 32—14 10 Claims



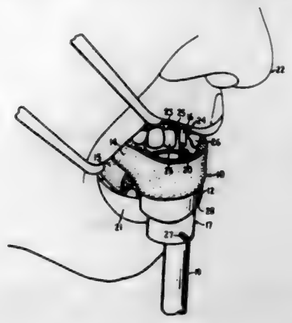
An orthodontic lock pin for use with a bracket mounted on a band to lock an arch wire to a tooth, wherein the lock pin includes a knife-edge facing the wire to facilitate tipping of the tooth during orthodontic treatment without interfering in any way with the desired function of the bracket.

3,445,934
DENTAL OPERATORY AND VALVE USED THEREIN
William H. Harris, 4513 S. Pennsylvania, Oklahoma City, Okla. 73119
Filed May 23, 1966, Ser. No. 552,027
Int. Cl. A61c 17/00, 19/00; F16k 5/04
U.S. Cl. 32—22 15 Claims



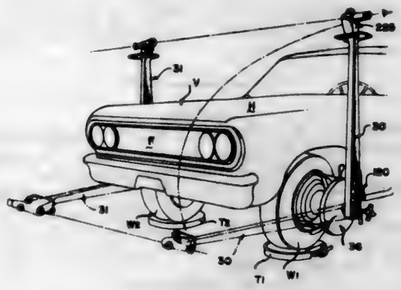
A dental operatory which includes a vertical standard and an instrument support member connected to the standard through a universal joint and arms which permit universal movement of the instrument support member. The instrument support member detachably supports a plurality of air driven, water receiving instruments and a fluid distributing valve. The valve has an axially bored, cyclindrical valve housing and rotatably surrounds a central core. The valve housing and core both contain axially extending, parallel passageways opening at coplanar end faces disposed on one side of the instrument support member, and selectively communicable through registering radial passageways in housing and core. A valve operator knob is disposed on the opposite side of the instrument support member from the coplanar end faces and openings therein so that in rotating the core to operate the valve, the dentist encounters no interference from flexible fluid conduits connected between the openings to the valve passageways and the dental instruments.

3,445,935
JIG TO BE USED IN DENTISTRY
Kenneth H. Marshall, 85 The Bulwark, Castlecrag, New South Wales, Australia
Filed Feb. 6, 1968, Ser. No. 703,360
Claims priority, application Australia, Mar. 21, 1967, 19,252/67
Int. Cl. A61c 3/00, 13/12
U.S. Cl. 32—40 16 Claims



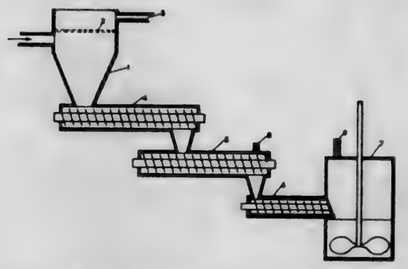
The production of a dental drilling jig used for preparation of a tooth for a jacket crown or the like, which comprises a disposable assembly of a guide cylinder and surrounding stationary cam sleeve set together in a frame of self-setting material carrying teeth impression of the patient for positioning of the jig within the patient's mouth, and a barrel with an offset bore for carrying dental-drilling apparatus rotatable and slidable within the guide cylinder and controlled by the cam.

3,445,936
VEHICLE WHEEL ALIGNMENT TESTING APPARATUS AND METHOD
Edward D. Wilkerson, 280 E. North Field Road, Livingston, N.J. 07039
Filed Apr. 30, 1965, Ser. No. 452,048
Int. Cl. G01c 15/00; G01b 5/255
U.S. Cl. 33—46 32 Claims



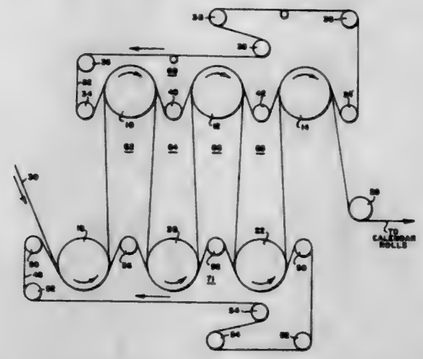
This invention relates to a novel vehicle wheel testing apparatus, and in particular, to a novel wheel aligner by means of which the camber, caster, toe in, steering geometry and general alignment of the wheels of a vehicle may be readily and easily determined. The testing apparatus includes a pair of identical posts each of which carries a viewing head for determining camber and toe-in when the posts are in either vertical or horizontal planes, as well as a device for determining caster. Each sight head includes a sight tube movable by screws in vertical and horizontal planes with each screw carrying indicia means for indicating camber and toe-in dependent upon sight tube movement when the support posts are disposed either vertically or horizontally.

3,445,937
PURIFICATION OF PIGMENTS
James Dennis Groves, Redcar, England, assignor to British Titan Products Company Limited, Billingham, England, a corporation of the United Kingdom
Filed Aug. 11, 1966, Ser. No. 571,859
Claims priority, application Great Britain, Aug. 11, 1965, 34,309/65
Int. Cl. F26b 3/06, 17/20
U.S. Cl. 34—33 5 Claims



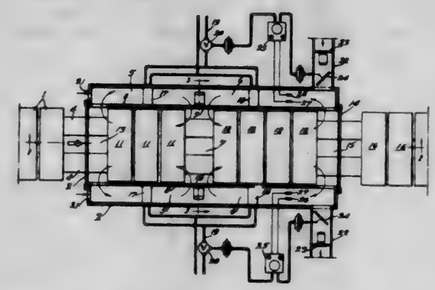
A method for the removal of occluded gases, such as halogen, from solid particulate material, such as titanium dioxide, wherein a carrier gas, such as air, is passed in countercurrent relation to the solid particulate material. The solids are moved with mixing agitation and the carrier gas passing therethrough strips the occluded gases from the solid materials. A sealed screw conveyor may be suitably employed for carrying out the process.

3,445,938
VENTILATION SYSTEM FOR A PAPERMAKING MACHINE
Raymond C. Clark, Orange, Conn., assignor to Huyck Corporation, Stamford, Conn., a corporation of New York
Filed Apr. 27, 1967, Ser. No. 634,337
Int. Cl. F26b 13/08
U.S. Cl. 34—116 12 Claims



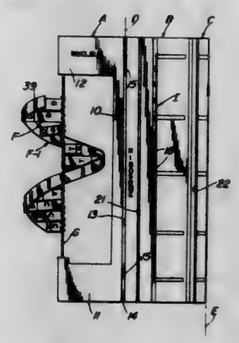
The present invention is directed to an improved apparatus for removing or purging the moist air from the tent-like pockets of the dryer section of a papermaking machine. More specifically, the present invention provides improved means for supplying fresh air into these tent-like pockets, the result being to force the moist air therein to the lateral edges of the machine where such air may be removed from the machine.

3,445,939
APPARATUS FOR THE CIRCULATION OF A GASEOUS MEDIUM THROUGH A DRYING CHANNEL
Lars Malmquist, Huddinge, Sweden, assignor to Aktiebolaget Svenska Flaktfabriken, Stockholm, Sweden
Filed Aug. 30, 1967, Ser. No. 664,403
Claims priority, application Sweden, Sept. 9, 1966, 12,169/66
Int. Cl. F26b 3/04, 15/18
U.S. Cl. 34—223 3 Claims



A dryer for lumber of varying lengths stacked in packages for conveyance through the dryer in a direction perpendicular to the length of the pieces of lumber. Drying medium is introduced into the dryer at an intermediate point along the length of travel of the material by axial fans having their axes perpendicular to the longitudinal vertical center plane of the drying channel. The drying medium is recirculated heated air, and the condition of the medium is controlled by heat exchangers in the return passages, fresh air inlets at one end and moist-air outlet at the other end, all controlled by sensors in the respective return channels.

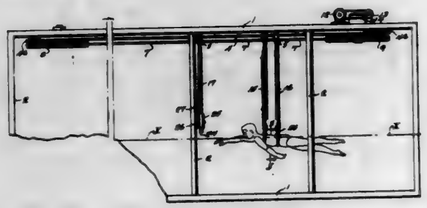
3,445,940
RNA PROTEIN SYNTHESIS MODEL
Paul Dziulak, Powers Lake, Wis. 53159
Filed Dec. 28, 1966, Ser. No. 605,434
Int. Cl. G09b 23/26, 23/28
U.S. Cl. 35—20 7 Claims



The disclosure is directed to a combination of structural elements which form a visual model for teaching complex genetic phenomenon, herein particularly RNA protein synthesis with subsequent formation of cytoplasm.

Hinger mounting boards are employed, one bifurcated to receive a rod therebetween for carrying a plurality of helically arranged hosts of snap-on blocks in one or more series. The second board also carries a rod for receiving one series of blocks from the first board to represent messenger RNA phenomenon. Still a third board carries magnetic means and/or mechanical grooving for retaining a third series of blocks thereon in a detachable manner. Detachable and automatically releasable means is employed to join the second and third series of blocks; pivoting motion of the second and third boards initiates automatic release of one series of blocks completely while maintaining connection with the other series in a detachable manner.

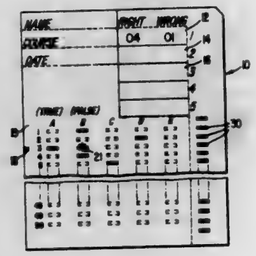
3,445,941
APPARATUS FOR TEACHING SWIMMING
Russell P. Eaves, R.F.D. 14, Box 236A, Richmond, Va. 23201, and Lucille E. Burke, 597 Bourne Ave., Somerset, Ky. 42501
Filed Oct. 27, 1966, Ser. No. 589,899
Int. Cl. A63b *69/12*
U.S. Cl. 35—29 **2 Claims**



The equipment comprises a tramway supported above a pool of water, on which tramway run rollers carrying hangers from which the amateur swimmers are suspended. The suspension means is flexible and extensible, so that the body of the swimmer can rise and fall in the water, but cannot sink below a certain depth.

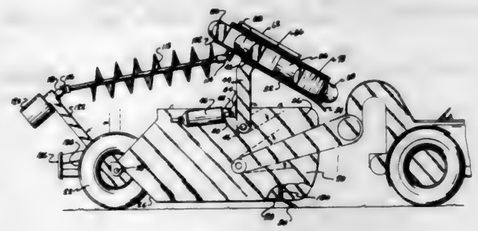
On one of the hangers in front of the one supporting the swimmer is mounted a visual indicator operated by a cord attached to the suspension means adjacent the swimmer's body, so that the indicator shows at all times the relative depth to which the body is submerged.

3,445,942
MULTIPLE PRINTOUT TEST GRADING MACHINE
Leo L. Azure, Jr., Richland, Wash., assignor to Automata Corporation, Richland, Wash.
Filed Dec. 16, 1968, Ser. No. 780,369
Int. Cl. G09b *3/00*
U.S. Cl. 35—48 **13 Claims**



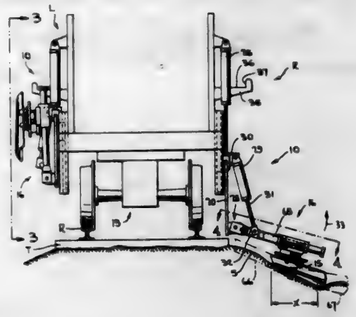
Apparatus and a method for grading and scoring an answer sheet having indicia applied thereto representing sets of answers to problems of the multiple choice type. Separate total scores for each set of answers are accumulated and printed on the answer sheet in displaced positions after successive grading and scoring operations are performed on each set of answers.

3,445,943
LOADING DEVICES FOR CARRYALLS
William N. Crum, 81271 Interstate 10, Indio, Calif. 92201
Filed May 6, 1966, Ser. No. 558,186
Int. Cl. B60p *1/04, 1/42*
U.S. Cl. 37—9 **4 Claims**



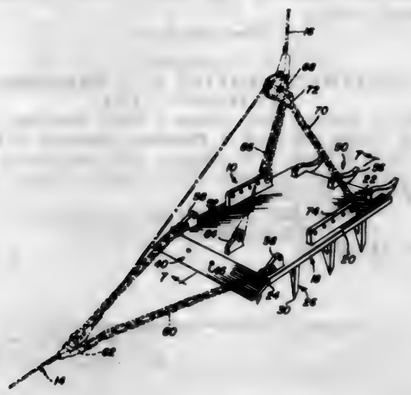
Apparatus for assisting the loading of a conventional carryall including a material elevating device attached to the pivoted apron thereof and operating to deliver overhead to the carryall, and an overhead auger pivoted to the apron and the coverall for leveling the material and movable to an out-of-the-way position during the dumping operation.

3,445,944
SHOULDER SHAPER ASSEMBLY
Martin J. Speno, Syracuse, N.Y., assignor to Frank Speno Railroad Ballast Cleaning Co., Inc., Ithaca, N.Y., a corporation of New York
Filed Jan. 10, 1967, Ser. No. 608,423
Int. Cl. E02f *5/22, 3/00;* **E01c** *19/48*
U.S. Cl. 37—105 **8 Claims**



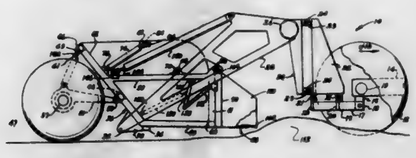
A rail shoulder shaper carried by a car for movement along the railway track for operation on the shoulder of the roadbed. Vertically adjustable support means are carried by the car to support a wing member extending laterally and in turn carrying a blade for operation on the shoulder. The wing member is swingable about a horizontal axis under the actuation of suitable power means. Such axis is defined by a torsion resisting bar which also provides a vertical connection between the wing member and the support means.

3,445,945
LAND CLEARING DEVICE
Mason C. Howell, P.O. Box 217, Plant City, Fla. 33566
Filed Nov. 8, 1966, Ser. No. 592,853
Int. Cl. E02f *3/48, 3/60*
U.S. Cl. 37—116 **8 Claims**



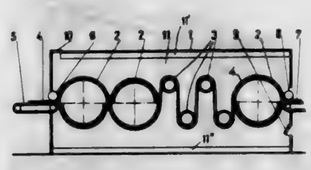
A flat rectangular base plate having a plurality of elongated parallel chopping blades depending perpendicularly therefrom and orientated transversely thereacross. Outwardly extending tooth-like members are mounted on the front edge of the base plate at spaced points therealong for use as raking and lift means, and a cutting blade is mounted along the rear edge of the base plate whereby upon an orientation of the base plate with the cutting blade downwardly directed, a cutting of logs or the like can be effected through a sequential raising and lowering of the base plate. Mounting lugs are provided on top of the base plate for engagement with an appropriate overhead support, and spring-loaded cleanout bars are provided between the chopping blades.

3,445,946
EARTH HANDLING EQUIPMENT HAVING RECEPTACLE AND SHOVEL
Lewis G. Striggow, 1115 Marion Drive, Holly, Mich. 48442
Filed Oct. 21, 1965, Ser. No. 505,601
Int. Cl. E02f *3/62*
U.S. Cl. 37—126 **6 Claims**



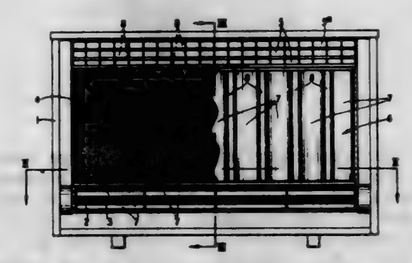
An earth handling apparatus which may be used for any of many functions including earth digging and loading, spreading, dumping, horizontal surface grading, slope surface contouring, and surface compacting. The apparatus includes an earth carrying receptacle pulled by a tractor and supported for upward swinging movement by a pair of arms connected to a hitch of the tractor. A first power means such as a piston-cylinder device controls the vertical position of the receptacle. A shovel is positioned in front of the receptacle to collect earth, and normally the earth flows back into the receptacle where it is carried and isolated from earth subsequently handled by the shovel. A second power means is operative to swing the shovel upwardly in an arc to overturn the same so that when heavy terrain is encountered the contents of the shovel can be dumped into the receptacle. The receptacle and shovel can be tilted by third power means when the apparatus is to be used for slope contouring. A bottom wall of the receptacle can be adjusted by still another power means to provide an opening from the receptacle for metered discharge of earth from the receptacle.

3,445,947
PROCESS AND DEVICE FOR DRYING AND IRONING TOWS AND OTHER STRANDS OF MATERIAL OR SLIVER-TYPE MATERIAL
Heinz Fleissner, Frankfurt, Germany, assignor to Anstalt fur Patentdienst, Vaduz, Liechtenstein
Filed Jan. 28, 1966, Ser. No. 523,730
Claims priority, application Germany, Jan. 28, 1965, A 48,256
Int. Cl. D06f *61/04, 65/10, 67/00*
U.S. Cl. 38—2 **30 Claims**



Method and apparatus for drying and ironing endless filament groups and other strands of material which utilizes a drying chamber including a plurality of cylindrical conveying means, at least one of which is a sieve drum and another of which is a heated calender roll. The various conveying means are disposed within the drying chamber in such a manner that each is in contact with the material being treated over a substantial portion of its peripheral surface, thus effecting a stretching or ironing of the material. The drying of the material is effected by a combination of evaporation of the liquid from the material by contact heat conduction between the heated calender rolls and the material with evaporation of moisture by means of circulating currents of a treatment medium through the sieve drums.

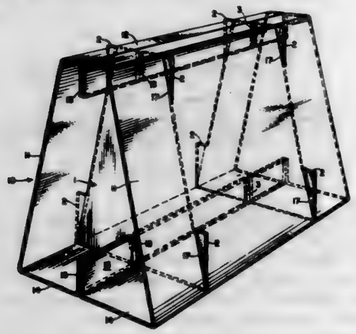
3,445,948
ELECTRICAL ILLUMINATION DEVICES
Arthur William Moss, Painswick, and Norman Jones and Kenneth Carpenter, Walsall, England, assignors to H. Frost & Company Limited, Walsall, England, a British company
Filed June 6, 1966, Ser. No. 555,557
Claims priority, application Great Britain, June 8, 1965, 24,130/65
Int. Cl. G09f *13/34*
U.S. Cl. 40—106.54 **7 Claims**



An electric illumination device comprising a light source including lamp means and light moving means in which moving light from said light source is viewed through a light-diffusing viewing screen while reflector

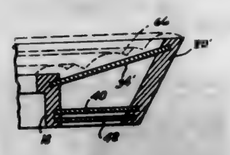
means for reflecting light from the light source forward onto the rear face of the viewing screen comprises forwardly presented troughs each extending upwardly in its longitudinal direction and having a front reflecting surface with colored upwardly extending surface in interjacent relationship with said reflecting surfaces to contrast with the latter, said upwardly extending surfaces being illuminated from the light source so as to appear as colored illuminated strips in the lighting effect imparted by the device.

3,445,949
ARTICLE OF MANUFACTURE AND CONSTRUCTION THEREOF
John J. Rohde, 2901 Penrose Drive, Richmond, Va. 23255
Filed Dec. 19, 1966, Ser. No. 602,749
Int. Cl. G09f *1/00, 19/00;* **B31d**
U.S. Cl. 40—124.1 **2 Claims**



The present invention relates to a lightweight, substantially rigid, easily assembled and disassembled article of manufacture and to the construction thereof. More specifically, the present invention relates to articles of manufacture preferably composed of several interlocking pieces of corrugated flute board which may be utilized, among other articles, as a sawhorse or a road sign.

3,445,950
WARP-FREE FRAME MEMBERS AND FRAME ASSEMBLIES THEREOF
Alvin R. Gerik, 531 E. 5th Ave., Anchorage, Alaska 99501
Filed June 27, 1967, Ser. No. 649,261
Int. Cl. G09f *1/12, 3/18*
U.S. Cl. 40—155 **13 Claims**



A knock-down frame member of warp-free construction adapted to be assembled with similar members of selected lengths to provide a frame for pictures, posters, and the like, and comprising a pair of elongated side strips spaced apart and standing on edge with their lower and upper edges respectively parallel to one another, a pair of aligned grooves one on each said side strip near the upper edge and extending the full length thereof, a facing plate connecting said side strips with its edges adhesively secured in said pair of grooves, one or more additional pairs of aligned grooves in said side strips near their bottom edges and reinforcing plates connecting the side strips with their edges glued in said additional aligned pairs of grooves, said reinforcing plates being preferably placed in pairs at each end of the side strips, the ends of said side strips, facing plate, and preferably said reinforcing plates being beveled to enable miter joint assembly with similar frame members into a picture frame.

3,445,951
BAYONET ADAPTER AND MAGAZINE EXTENSION TUBE
John J. Bechard, Ilion, Walter L. Dahl, Herkimer, James S. Martin and Clark S. Workman, Mohawk, N.Y., and David J. Sankey, Wilmington, Del., assignors to Remington Arms Company, Inc., Bridgeport, Conn., a corporation of Delaware
Filed July 27, 1967, Ser. No. 656,418
Int. Cl. F41c *21/16, 27/02*
U.S. Cl. 42—86 **6 Claims**



A bayonet adapter for tubular magazine autoloading firearms including a magazine extension tube which provides a tubular magazine as long as the barrel. The adapter is arranged to surround both the barrel of the firearm and the magazine extension tube. The magazine extension extends to the muzzle end of the barrel and the adapter can be arranged to accommodate any standard bayonet.

3,445,952
TELESCOPIC FISHING ROD
David H. Ferman, 6623 Maplewood Drive, Mayfield Heights, Cleveland, Ohio
Filed July 10, 1967, Ser. No. 652,309
Int. Cl. A01k *87/00;* **F16b** *7/10*
U.S. Cl. 43—18 **1 Claim**



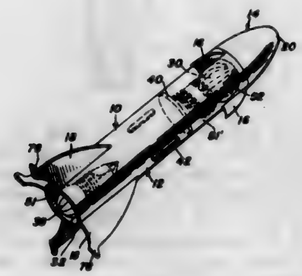
A telescopic fishing rod comprising a handle, butt section and end section, wherein the handle and base of the butt section are provided with coacting means for preventing relative rotation therebetween. The other end of the butt section is provided with a flange having an opening of non-circular cross-section. The end section is telescopically received in the butt section, and has a cross-section corresponding to that of the opening for preventing rotation of the end section relatively to the butt section. The end section has a flange on its base to abut the butt section flange and prevent its removal. The end section flange is of polygonal cross-section, having only its corners touching the inner wall of the butt section.

3,445,953
FISH LURE
John J. Dailey, Box 834, Anna Maria, Fla. 33501
Filed Oct. 10, 1966, Ser. No. 585,475
Int. Cl. A01k *85/08, 85/00, 79/02*
U.S. Cl. 43—42.06 **4 Claims**



A life-like, fish-like lure of molded, resilient plastic having a flexible flat scoop extending forwardly from the head portion and unevenly set scoops mounted on either side of and to the rear of said flat scoop and a plurality of undercut depressions on the body portion in the general formation of fish scales and an imbedded fish hook in close proximity to an integrally formed, flexible plastic bottom plane guard for said fish hook. Fin and tail portions on the fish-like lure are weighted along their rear edges by reason of greater thickness than the main area of the fin and tail portions.

3,445,954
TOY ROCKET
Franklin W. Wahl, Huron, S. Dak., assignor of fifteen percent to Owen A. Mann, Miller, fifteen percent to John H. Weideman, Orient, and nineteen percent to Edward M. Parsen, Miller, S. Dak.
Filed Apr. 8, 1966, Ser. No. 541,365
Int. Cl. A63h *33/20*
U.S. Cl. 46—86 **13 Claims**



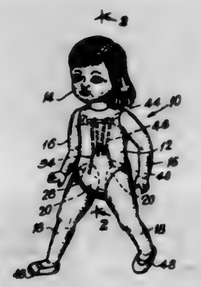
A rocket simulating body having a nosepiece supported from its forward end for ready upward separation from the body. A first parachute is tethered to the nosepiece and completely enclosed within the rocket and a second parachute is tethered to the body and lightly frictionally retained in a rearwardly opening cavity of the body. The second parachute is ejected in response to air pressure thereby decelerating the rocket body and releasing the nosepiece and the first parachute due to their forward momentum, whereby both rocket body and nosepiece are lowered by their respective parachutes.

3,445,955
CHANGEABLE FEATURE FIGURE TOY
John W. Ryan, Los Angeles, Joseph Kossoff, Hawthorne, Louis L. Mucciante, Palos Verdes Peninsula, and Jack L. Lemkin, Torrance, Calif., assignors to Mattel, Inc., Hawthorne, Calif., a corporation of California
Filed Feb. 9, 1967, Ser. No. 614,922
Int. Cl. A63h *13/02*
U.S. Cl. 46—135 **8 Claims**



A doll having a compressible body is provided with soft, flexible eye openings, cheeks and a normally open mouth. A water reservoir is mounted in an upper portion of the head and has a bottom wall in which a vent, two water outlets and a water inlet are provided for connection to pressurized air in the body, the eye openings and the mouth, respectively. Fixed members depend from the reservoir into engagement with the face above the eye openings and above the doll's upper lip. A combined cheek and mouth animator is pivotally connected to the reservoir and may be swung to push the doll's lower lip and cheeks outwardly and upwardly. Squeezing the body swings cheek-mouth animator and pressurizes reservoir forcing water out eye openings.

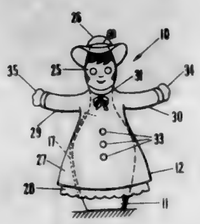
3,445,956
WALKING DOLL
Lawrence Doppelt, Great Neck, and Augustin Rodriguez, Brooklyn, N.Y., assignors to Goldberger Doll Mfg. Co., Inc., Brooklyn, N.Y., a corporation of New York
Filed June 9, 1966, Ser. No. 556,365
Int. Cl. A63h *11/14*
U.S. Cl. 46—149 **6 Claims**



A doll with a walking mechanism. The doll has a pair of legs pivoted to a torso. Each leg has a pin with an end rotatable in a central opening at the top of the leg. The

top of the leg has a radial slot in which the pin is received. The upper end of the pin is connected to a rubber band anchored higher in the torso. The pin can either lie in the slot or shift out of it.

3,445,957
BOWLING PIN DOLL
Louise Broadtman Spahr, 54 Howard St., Gretna, La. 70053
Filed June 1, 1966, Ser. No. 554,408
Int. Cl. A63h *3/50, 3/00, 3/36*
U.S. Cl. 46—151 **9 Claims**



A doll construction is provided having a centrally located upright bowling pin-shaped support defining a head portion, an enlarged body portion and a narrow neck portion. An elastic foundation is snugly fitted over and conforms to the body portion. A costume is attached to the foundation for movement therewith so that the costume can be removed from or positioned on the support along with the foundation by utilizing stretching action of the foundation.

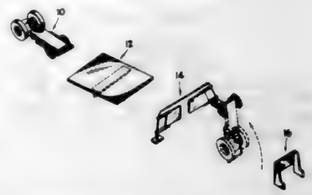
3,445,958
TOY VEHICLE WHEEL
Robert G. Johnson, 22109 110th Ave. W., Edmonds, Wash. 98020, and Truxton B. Troxell, 16014 Sunnyside Ave. N., Seattle, Wash. 98133
Filed Apr. 20, 1966, Ser. No. 543,972
Int. Cl. A63h *11/10*
U.S. Cl. 46—221 **3 Claims**



A resilient foamed plastic wheel has an unrestrained periphery constituting a rolling surface which is locally deformable about irregularities in surfaces over which it rolls. A sleeve to receive a vehicle axle is shorter than the axial extent of the wheel and extends through a central wheel aperture. Flanges on opposite ends of the sleeve compress axially the foamed material encircling the sleeve.

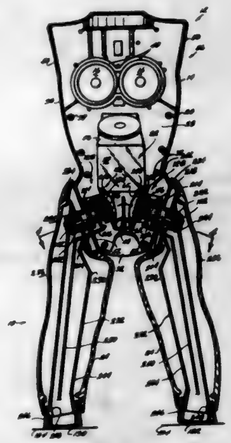
3,445,959
REVERSIBLE RACE CAR
Gordon A. Barlow, Evanston, Leonid Kripak, Villa Park, and Harry Disko, Park Ridge, Ill., assignors to Marvin Glass & Associates, Chicago, Ill., a partnership
Filed Jan. 25, 1967, Ser. No. 611,769
Int. Cl. A63h *17/40, 29/22*
U.S. Cl. 46—244 **7 Claims**

A self-propelled toy racing car having its rear driving wheels arranged so that the car can pivot about the axis of such wheels, and having a spring means adapted to strike the supporting surface and turn the car over. A reversible motor and switch means are arranged for cooperation with the spring means to reverse the rotation



of the drive wheels when the car is turned over. Further, there is provided means for determining the distance of the forward travel of the car before actuating the spring means to overturn the car and reverse its travel.

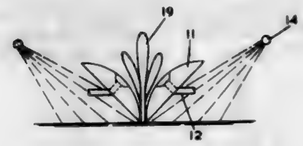
3,445,960
WALKING TOY
John W. Ryan, Bel Air, Calif., assignor to Mattel, Inc., Hawthorne, Calif., a corporation of California
Original application Aug. 4, 1965, Ser. No. 477,146, now Patent No. 3,267,608, dated Aug. 23, 1966. Divided and this application Aug. 19, 1966, Ser. No. 573,570
Int. Cl. A63h *13/02, 11/00*
U.S. Cl. 46—247 **13 Claims**



A motor driven walking doll with a torso, leg support swingable on the torso on a fore-and-aft axis, legs pivoted to the support for fore-and-aft swinging, and means drivingly connecting the motor to the support and to the legs and operating at such speed, related to the inertia of the parts, as to produce lifelike walking movements with minimum power and while maintaining the torso substantially upright at all times.

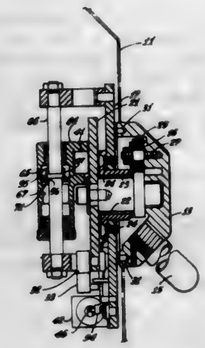
3,445,961
AGRICULTURE SPRAYING MACHINES
James Edward Elsworth, Fernhurst, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
Filed Apr. 27, 1967, Ser. No. 634,287
Claims priority, application Great Britain, May 16, 1966, 21,570/66
Int. Cl. B05c *15/06, 1/28;* **A01g** *25/00*
U.S. Cl. 47—1.7 **6 Claims**

A spraying machine is provided with a pair of crop guards which are gently biased toward one another so as to shield crops in a row. Each crop guard is in the form of a dished disc made from a semi-rigid material, and



each crop guard is mounted so as to be rotatable by contact with the ground.

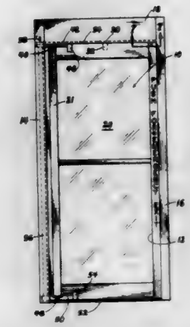
3,445,962
TURNSTILE MECHANISM
Henry L. Byland, Deerfield, Ill., and Bradford Bates, Santa Monica, Calif., assignors to Advance Data Systems Corporation, Beverly Hills, Calif., a corporation of New York
Filed Sept. 21, 1966, Ser. No. 587,635
Int. Cl. E06b *11/08*
U.S. Cl. 49—47 **12 Claims**



A turnstile mechanism is disclosed being operable by energizing a solenoid which removes a locking pawl from engagement with a roller attached to a plate being movable with the turnstile barrier arms. A second roller engages a dampening assembly during rotation of the barrier arms while a second locking pawl remains in a locking-ratchet position to prevent rotation of the barrier arms in the reverse direction. The barrier arms are attached to a hub which is mounted by resilient bushings so as to cushion movement thereof.

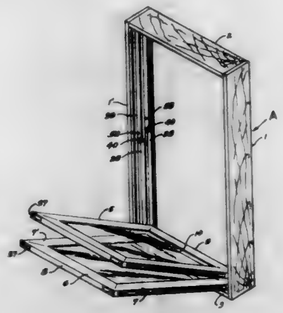
3,445,963
PANIC BREAKAWAY BALANCE DOOR
James E. Gilbert, Larry O. Kroutil, and Gary G. Ingham, Oklahoma City, Okla., assignors to Roto-Swing Door Co., Inc., Oklahoma City, Okla., a corporation of Oklahoma
Filed July 21, 1967, Ser. No. 659,553
Int. Cl. E05c *15/02, 11/52*
U.S. Cl. 49—141 **11 Claims**

A balanced door structure having panic breakaway features whereby the normal balanced operation of the door during opening may be altered in emergency situations to a conventional pivotal action about a vertical pivot axis extending along one side edge of the door. Manual pressure against the face of the door in a direction opposite from the normal opening direction thereof brings the breakaway action elements into operation for overcoming



the normal balanced type opening of the door and providing for the conventional pivotal opening thereof.

3,445,964
TILT-IN WINDOW SASH
Edwin E. Foster, 1801 Camp Craft Road, Austin, Tex. 78746
Filed Oct. 17, 1967, Ser. No. 675,899
Int. Cl. E05d *15/22, 13/10*
U.S. Cl. 49—183 **13 Claims**

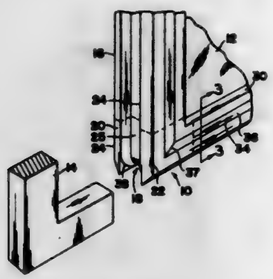


A window comprising upper and lower slideable sashes having slide members pivotally mounted at their lower ends upon such sashes for travel within guideways provided on the window jambs; there being latch elements for engaging the sashes and the slide members at the upper ends of the latter so that upon unlocking action the sashes will be freed for pivotal movement about an axis passing transversely through their lower ends. A sash counter-balance is engageable with the slide members.

3,445,965
RESILIENT CORNER GASKET
Peter V. Paulus, Port Clinton, Ohio, assignor to The Standard Products Company, Cleveland, Ohio, a corporation of Ohio
Filed Mar. 13, 1967, Ser. No. 622,721
Int. Cl. E06b *1/00*
U.S. Cl. 49—479 **3 Claims**

A corner gasket having a frame-receiving channel, with a cross-web forming the bottom of the channel and a pair of wings having terminal sealing lips forming the side

walls of the channel. Curvilinear pressure concentrating ridges are provided on the side walls around the corner



of gasket, and have a radius of curvature defined in terms of the thickness of the cross-web and the distance from the bottom of the channel to the sealing lips.

3,445,966

ABRASIVE BLASTING APPARATUS

Ralph W. Moore, Hagerstown, Md., assignor to The Pangborn Corporation, Hagerstown, Md., a corporation of Delaware

Filed June 30, 1966, Ser. No. 561,987
Int. Cl. B24c 3/00, 3/02
U.S. Cl. 51—9 3 Claims



An abrasive blasting apparatus includes a blast wheel having a plurality of radial vanes which are supplied with abrasive particles so that upon rotation of the wheel the particles are centrifugally projected from the vanes substantially normal to the axis of rotation of the wheel. Confined feed means for feeding the particles and the drive means for rotating the wheel are both disposed on the same side of the wheel.

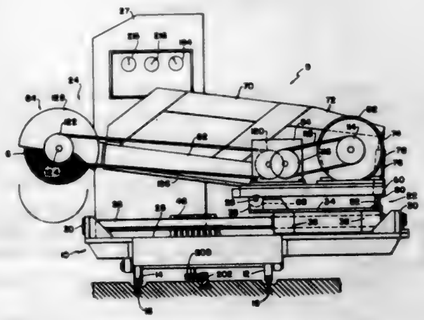
3,445,967

CONTROL FOR GRINDING MACHINE

Arthur C. Reppenhagen, Owosso, Mich., assignor to MWA Company, Owosso, Mich., a corporation of Delaware

Filed Dec. 12, 1966, Ser. No. 600,885
Int. Cl. B24b 7/02
U.S. Cl. 51—34 7 Claims

Briefly described, the machine comprises a grinding wheel movable at opposite directions across the surface of a metal billet or slab. Relays are provided to effect reversal of the grinding wheel. Operating current to these relays is controlled by Zener diodes. One of the diodes is responsive to voltage of one polarity and given magnitude to deliver operating current to its relay, and the other diode is responsive to a voltage of the opposite polarity and given magnitude to deliver operating current to its relay. Two sources of voltage, one positive and the



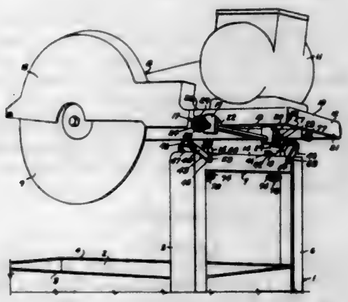
other negative, are applied to the Zener diodes. One voltage source passes through a resistance which varies as the grinding wheel moves. Thus, for example, the voltage applied to the diodes from this source may vary from say +18 volts to zero volts. The second voltage source is applied to one diode through one selectively variable resistance and is applied to the other diode through another selectively variable resistance.

3,445,968

PIVOTAL MOUNTING FOR THE CUTTING HEAD OF A MASONRY OR METAL SAW

Victor H. Haase, Grandview, Mo., assignor to Robert G. Evans Company, Kansas City, Mo., a corporation of Missouri

Filed Nov. 29, 1966, Ser. No. 597,734
Int. Cl. B24b 7/00, 9/00
U.S. Cl. 51—99 5 Claims



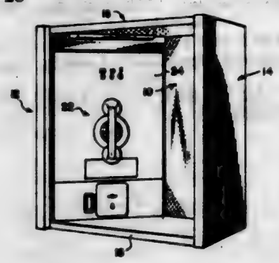
A bearing means for positively clamping and retaining a pivoted cutting head of a machine of the type used in cutting masonry, tile, brick, metals, and the like, for easy removal and replacement of the head on the frame of the machine and for retaining the head with the abrasive disk firmly in alignment with the cut to be made while the head is pivoted thereon to bring the abrasive disk into and out of contact with the work.

3,445,969

TELEPHONE BOOTH

Percival H. Sherron, Jamaica, N.Y. (% Sherron Metallic Corporation, 1201 Flushing Ave., Brooklyn, N.Y. 11237)

Filed Sept. 12, 1966, Ser. No. 578,711
Int. Cl. E04h 14/00, E04f 19/02
U.S. Cl. 52—28 2 Claims



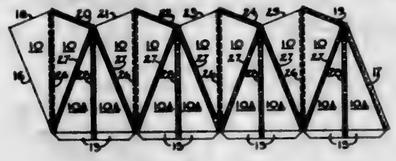
A wall mounted telephone booth of the open stall type having a diagonal panel extending from the front end of one side wall to a medial portion of the rear wall and a telephone unit mounted behind the diagonal panel to be protected against vandalism, various walls of the booth being provided with acoustic insulation.

3,445,970

RIGHT TRIANGULAR BUILDING COMPONENTS

Donal P. Nelson, 3728 Bryant Ave. S., Minneapolis, Minn. 55409

Continuation-in-part of application Ser. No. 378,678, June 29, 1964. This application Sept. 18, 1967, Ser. No. 668,606
Int. Cl. E04b 1/348, 1/32, 7/08
U.S. Cl. 52—71 2 Claims



The device is a collapsible building structure constructed of components of rigid sheet material, right triangular in shape, connected together and arranged in courses one above the other. Long and short sides form the right angle of a component. The components in the respective courses are connected together in pairs along their long sides and the pairs are connected together along their hypotenuse. The courses are connected together by joining the corresponding short sides of the pairs in adjacent courses together forming elongated diamond-shaped panels extending in the direction of the longitudinal axis of the building structure and arcuately arranged about said axis.

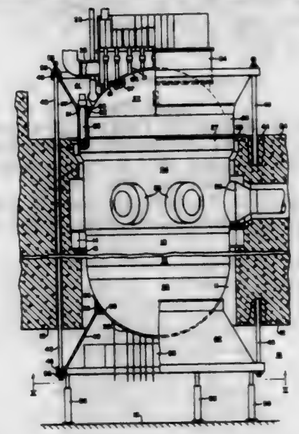
3,445,971

HIGH PRESSURE VESSEL HOLD-TOGETHER STRUCTURE

Walter E. Desmarchais, Monroeville, and Howard E. Braun, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 2, 1967, Ser. No. 620,075
Int. Cl. E04b 1/32; E04h 7/14; F25j 1/00
U.S. Cl. 52—80 9 Claims

A structure which will hold a high pressure nuclear reactor vessel together in the event of a major vessel fracture and prevent the generation of missiles which might cause a breech in the system secondary containment. The structure concept is predicated upon the principle that for every force there is an equal and opposite reaction. The thrust forces on the vessel fragments



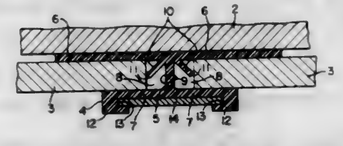
are so connected to one another by a yoke or clamp structure that the net external force on the connected parts is zero.

3,445,972

PANEL ASSEMBLY

Vernon R. Carr, Akron, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

Filed Aug. 26, 1966, Ser. No. 575,935
Int. Cl. E04b 1/68, 1/92
U.S. Cl. 52—98 4 Claims



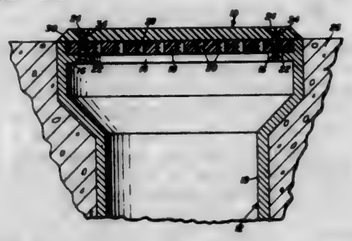
A panel assembly connected together by elongated extruded moldings having opposed channels for receiving the marginal edges of panels. Each channel has a resilient expansion web, integral with the molding, which engages the edge of a panel placed therein and spaces it in such manner within the channel that upon expansion of the panel, the expansion web will bend or break to permit the panel edge to move farther into the channel and prevent buckling of the panel.

3,445,973

REMOVABLE COVER FOR DRAIN FIXTURE

Robert E. Stone, 708 W. 24th St., Billings, Mont. 59102

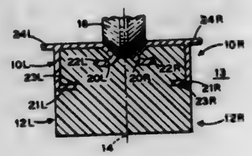
Filed Feb. 1, 1967, Ser. No. 613,356
Int. Cl. E04g 21/24; E03f 5/06; A47k 1/14
U.S. Cl. 52—173 2 Claims



A cover plate for protecting the grill plate of a drain fixture during the pouring of a concrete floor. The cover

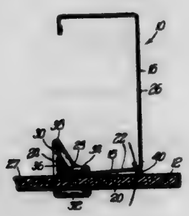
plate has a lower face which is congruent with the area presented by the end of the drainage fixture and is secured thereto for the duration of the construction process by the same retention screws available to secure grill plate to the upper end of the fixture.

3,445,974
THERMAL BARRIER OF INSULATING MATERIAL AND METAL FRAME MEMBERS
Clifford I. Bragman, 4875 N. Cumberland Blvd., Whitefish Bay, Wis. 53217
Filed Feb. 13, 1967, Ser. No. 615,418
Int. Cl. E04c *1/34, 1/00, 3/30*
U.S. Cl. 52—309 **8 Claims**



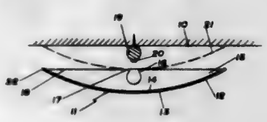
Described is a thermal barrier, useful as stock material for an insulated frame, particularly in dual primary windows. The thermal barrier is made by telescoping (FIGURE 1) metallic (preferably aluminum) frame (10) over insulating block (12). Frame and block have been prefabricated, for example, by extrusion process. The block is provided with receiving openings (22L, R; also 21L, R) into which frame projections (20L, R; also 21L, R) fit, initially with clearance. The frame is fractured at its center (14) by action of a die or roller (16; FIGURE 2) and the frame projections are forced into their receiving openings with complete sealing.

3,445,975
SOUND CONTROL PARTITION WITH RESILIENT SUPPORT STUDS
Nels Nelsson, Des Plaines, Ill., assignor to United States Gypsum Company, a corporation of Delaware
Filed Mar. 18, 1966, Ser. No. 535,602
Int. Cl. E04b *2/82*
U.S. Cl. 52—346 **9 Claims**



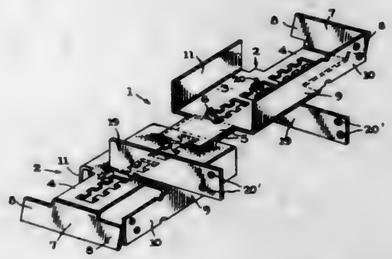
A sound control partition including coplanar lath panels and longitudinal resilient members supporting the panels. Each member includes a web spaced and projecting away from the panels and a flange cantilevered from said web at an acute angle to the panels and having a free end spaced a substantial distance from said web. Securing means fastens the panels to each flange such that the lath and flanges contact adjacent said free ends and said flanges and panels are otherwise spaced. Each free flange end preferably includes a return lip extending away from said panels, and said securing means preferably comprises a unitary clip having first and second portions connected by linking means and adapted to abut, respectively, the outer surfaces of said panels and the inside of the free flange end adjacent said lip.

3,445,976
WALL TILE OR PANELS
Bohdan Kowaiuk, 1338 Conn Ave., Saskatoon, Saskatchewan, Canada
Filed July 17, 1967, Ser. No. 653,867
Claims priority, application Canada, Aug. 17, 1966, 967,996
Int. Cl. E04f *13/08;* **E04c** *1/100*
U.S. Cl. 52—511 **1 Claim**



The device consists of wall panels or tiles being substantially concave-convex and having ribs integral therewith spanning the concave surface. A dowel or the like is secured to the wall or supporting surface and the rib is provided with a recess thus permitting the tile or panel to be snapped on to the dowel thus retaining the tile or panel with the perimetrical edges thereof abutting the wall surface.

3,445,977
ADJUSTABLE STUD ANCHOR
Raymond N. Latiano, Niles, Ohio, assignor to Republic Steel Corporation, Cleveland, Ohio, a corporation of New Jersey
Filed Oct. 16, 1967, Ser. No. 675,451
Int. Cl. E04b *1/38*
U.S. Cl. 52—713 **6 Claims**



An adjustable stud anchor including a pair of opposed and overlying elements having means for adjustably interlocking same and also provided with a pair of separate mounting tabs each of which is adapted to be adjustably connected to one of the elements.

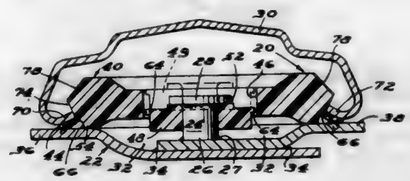
3,445,978
RESILIENTLY SECURED TRIM STRIP
Manfred Muehle, Lohne in Westfalen, Germany, assignor to Heinz Schuermann & Co., Bielefeld, Germany
Filed July 18, 1966, Ser. No. 566,708
Claims priority, application Germany, July 22, 1965, Sch 37,419
Int. Cl. E06b *7/22*
U.S. Cl. 52—717 **15 Claims**

A holding arrangement for windowpanes includes a profiled frame having two mutually inclined sections, one of which is provided with a face having an elongated groove formed therein which is bounded by a wall. A molding extends along this face and has a portion projecting into the groove. Biasing means is received at least in part in the groove in abutting contact with this portion and with the wall so as to anchor the portion in



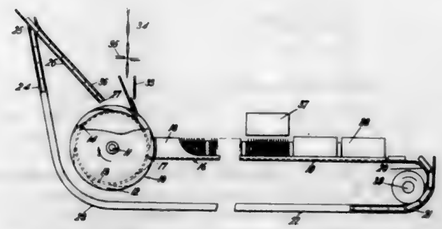
the groove and the biasing means further engages the molding in a sense pressing the same into permanent contact with the face.

3,445,979
MOLDING ASSEMBLY AND ADAPTOR
Engelbert A. Meyer, Union Lake, Mich., assignor to Warren Fastener Corporation, Mount Clemens, Mich., a corporation of Michigan
Continuation-in-part of application Ser. No. 539,106, Mar. 31, 1966. This application Nov. 6, 1967, Ser. No. 684,590
Int. Cl. E04c *2/38;* **E04f** *19/02*
U.S. Cl. 52—718 **9 Claims**



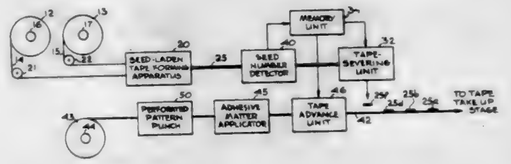
This disclosure relates to a molding assembly adapted to secure a molding device over a support channel, and a plastic adaptor having a sheet metal insert. The molding device over a support channel, and a plastic adaptor having a sheet metal insert. The molding assembly has a headed button secured to the support within the channel, and an adaptor spanning the channel having a ramp portion resiliently biased beneath the button head within the support channel. The forward portion of the adaptor may be received within the channel to receive the keyhole slot defined in the adaptor ramp portion over the button head, and secure the adaptor in place.

3,445,980
METHOD AND APPARATUS FOR PACKAGING BAGS
Jacob Salomon, 10 Weitzmann Square, Holon, Israel
Filed Sept. 19, 1966, Ser. No. 580,279
Claims priority, application Great Britain, Sept. 21, 1965, 40,243/65
Int. Cl. B65b *35/26*
U.S. Cl. 53—26 **9 Claims**



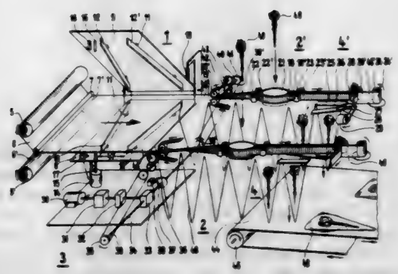
The invention provides a method of packaging bags and apparatus therefor, in which flat bags and spacer elements are fed to the pockets of a star wheel comprising a rim, a pair of spaced flanges and a plurality of wings which are readwardly inclined with respect to the direction of rotation of the wheel. The bags and spacers are extracted from the pockets and placed on a radially extending guide where packages are formed each comprising a group of bags delimited by successive spacers. The spacer elements may proceed to the far end of the guide and be returned for reuse or may be included to form ends of individual packages.

3,445,981
METHOD AND MEANS FOR FORMING A SEED TAPE
Tatsu Hori, Los Altos, Calif., assignor, by mesne assignments, to Gates Rubber Company, Denver, Colo.
Filed July 29, 1966, Ser. No. 568,957
Int. Cl. B65b *9/02, 57/10;* **A01c** *1/04*
U.S. Cl. 53—28 **15 Claims**



Method and means for forming a seed tape by first affixing seeds on spaced increments of a long tape. Thereafter, the tape increments are inspected and, those containing single seeds are separated from those containing other than one seed. In one embodiment, those increments containing single seeds are severed from the seed tape and thereafter are equidistantly spaced on a carrier tape, to form a seed tape on which single seeds are located at spaced increments.

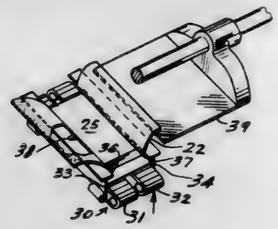
3,445,982
PROCESS AND APPARATUS FOR THE PACKAGING OF PLANTS
Armin Schweikert, Waldweg 1, Karlsruhe, Germany
Filed Jan. 11, 1968, Ser. No. 697,057
Claims priority, application Germany, Jan. 20, 1967, Sch 40,114
Int. Cl. B65b *43/06, 5/02*
U.S. Cl. 53—29 **20 Claims**



A process and apparatus for the packaging of cut flowers, potted plants, and other goods in bags of thermoplastic films of a synthetic material, the bags being successively manufactured with the films being moved stepwise in subsequent operating steps interrupted by rest periods, from two equally wide films placed upon each

other horizontally, by providing welding seams extending at right angles to the travel direction of the films, wherein during the welding step a severing step is conducted along the center of the seam to form two strips of open bags; then, the bags are opened for the introduction of the cut flowers, potted plants and other goods, and thereafter sealed shut.

3,445,983
APPARATUS FOR GIRTH WRAPPING FOLIOS
Charles R. Stevens, 4931 Oak Ridge Drive, Toledo, Ohio 43623
Filed Dec. 12, 1966, Ser. No. 601,046
Int. Cl. B65b *11/20, 49/04*
U.S. Cl. 53—52 6 Claims



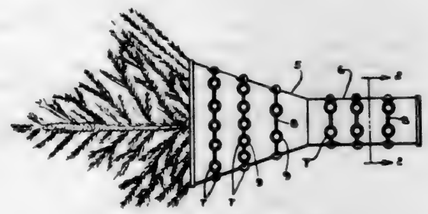
An apparatus for girth wrapping folios having a conveyor for feeding a wrapper sheet and the folio between laterally spaced, upwardly and inwardly flared wrapper margin guides and onto a second conveyor which extends between a pair of laterally spaced, longitudinal wings which have inwardly turned lips on their upper edges and which are swung inwardly to tightly fold the wrapper around the sides of the folio. The second conveyor is raised to fold the wrapper inwardly at the intersections of the lips and wings. A pair of horizontal plates are moved from opposite sides inwardly to lay the margins of the wrapper over the folio with the edge portions overlapped. A presser seals the overlapped margins.

3,445,984
CONTAINER FILLING MACHINE
Norman A. Kelly, Wayne Township, Kosciusko County, Ind., assignor to Haskon, Inc., Warsaw, Ind., a corporation of Delaware
Filed Mar. 17, 1967, Ser. No. 623,939
Int. Cl. B65b *57/10, 61/26;* B65g *25/04*
U.S. Cl. 53—59 20 Claims



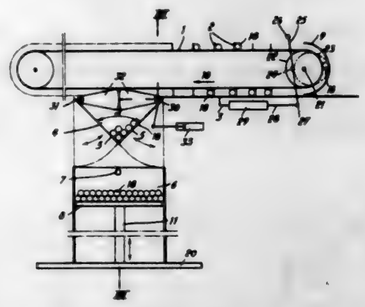
The filling machine comprises a frame upon which a container support is mounted for horizontal reciprocation between an empty container, infeed conveyor and a filled container discharge conveyor. The containers move with the support as it moves toward the discharge conveyor. An adjustable grid is supported upon said base frame for movement into and out of a position of engagement with the containers on the support so that said containers are held against movement with said support when it moves toward said infeed conveyor. A drive mechanism is connected to the grid and coordinated with the movements of the support so that the containers are advanced in a stepwise fashion through a series of stations. A plurality of discharge nozzles are connected to a supply of fluid material and arranged to fill a plurality of containers simultaneously when said containers are located in selected stations upon the support. Capping means is located at a station following the container filling stations for capping the filled containers. Container-marking devices are also provided to identify the time and/or date of filling the containers.

3,445,985
PACKAGING DEVICE
Sam Manetta, Pontypool, Ontario, Canada
Filed Nov. 21, 1966, Ser. No. 595,664
Int. Cl. B65b *63/02, 39/00, 67/00*
U.S. Cl. 53—124 1 Claim



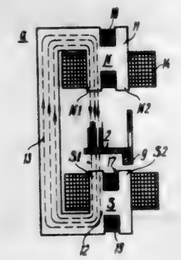
A tree packaging device having a funnel-shaped member with a long neck through which the tree is drawn and a series of shafts surrounding said member supporting bearings which project through apertures formed in said member to reduce the friction between the tree and said member.

3,445,986
DEVICE FOR FILLING STORAGE CONTAINERS WITH CIGARS AND LIKE ROD-SHAPED OBJECTS
Jean Godet, Paris, France, assignor to Service d'Exploitation Industrielle des Tabacs et des Allumettes, Paris, France, a French public establishment
Continuation-in-part of application Ser. No. 461,845, June 7, 1965. This application Feb. 10, 1967, Ser. No. 615,251
Claims priority, application France, June 6, 1964, 977,580
Int. Cl. B65b *19/26, 35/32*
U.S. Cl. 53—148 4 Claims



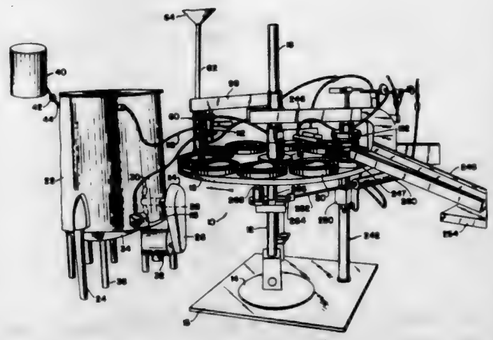
A device for automatically filling compartments of containers with rod-shaped articles in orderly rows, for example cigars; a continuously moving conveyor with partitions for feeding the cigars into an intermediate container which has a base which can be opened and closed in cyclic sequence; a closing device on top of the intermediate container for cutting off the feeding into the container at the time when the base thereof is opened.

3,445,987
DEVICE FOR PACKING FERROMAGNETIC PIECES
Jury Nikolaevich Likhachev, ulitsa Timiryazeva 27/3, kv. 2, and Felix Ivanovich Molchkov, ulitsa Belinskogo 26, kv. 1, both of Gorky, U.S.S.R.
Filed Jan. 30, 1967, Ser. No. 612,673
Int. Cl. B65b *35/30, 35/50, 1/04*
U.S. Cl. 53—166 2 Claims



The present invention relates to devices for packing ferromagnetic pieces, mostly extended ones, particularly for packing cathode bases in a row with a preset pitch.

3,445,988
PACKAGING MACHINE FOR FILLING AND CLOSING A RECEPTACLE
Gary W. Maier, Mount Clemens, and David H. Jehn, Warren, Mich., assignors to Dun-Hot, Inc., a corporation of Michigan
Filed Oct. 31, 1966, Ser. No. 590,704
Int. Cl. B65b *1/04, 7/28, 1/30*
U.S. Cl. 53—282 12 Claims



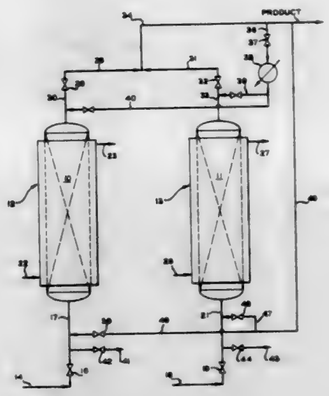
A packaging machine for dispensing, filling and coverings receptacles automatically, such operations being performed at a plurality of work stations. The packaging machine includes a rotary support having a series of die elements thereon, each die element being adapted to receive an open top receptacle having a rim at a first station; at subsequent stations various operations are performed including measuring and delivering predetermined amounts of the ingredients into the receptacle and for positioning a cover on the receptacle. Thereafter a novel closing die assembly is provided at a station for engaging and clamping the rim and cover together to form a sealed receptacle.

3,445,989
SHAFT THIMBLE AND STRAP FOR RACING HARNESS
Willard C. Beach, R.D. 1, Glen Rock, Pa. 17327; National Bank and Trust Company of Central Pennsylvania, administrator of Mary B. Beach and said Willard C. Beach, deceased
Filed Dec. 20, 1966, Ser. No. 603,363
Int. Cl. B68b *5/06*
U.S. Cl. 54—2 11 Claims



A thimble structure to receive the tapered outer end of the shaft of a racing sulky or jog cart and having a strap extending rearwardly from the thimble for connection to the saddle of a set of racing harness.

3,445,990
SEPARATION OF GASEOUS MIXTURES
George E. Hays and Forrest L. Poska, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Apr. 10, 1967, Ser. No. 629,677
Int. Cl. B01d *53/04*
U.S. Cl. 55—58 1 Claim

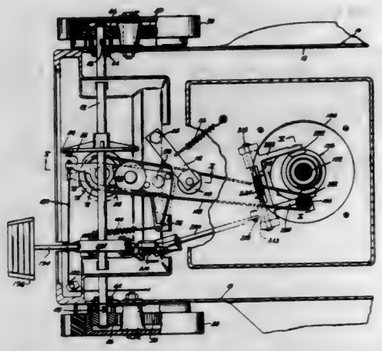


A cyclic method of separating one or more components from a gaseous mixture wherein at least two adsorption zones are utilized, the temperature of the beds during both adsorption and regeneration cycles being regulated by externally circulating a heat transfer media.

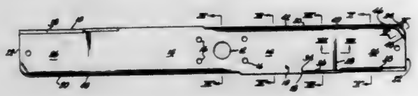
3,445,991
SELF-PROPELLED MOWER
Rudolph A. Hanson and Frank J. Deptula, Jackson, Mich., assignors to Yard-Man, Inc., Jackson, Mich., a corporation of Michigan
Filed Sept. 3, 1965, Ser. No. 484,890
Int. Cl. A01d *35/26*
U.S. Cl. 56—25.4 6 Claims

A drive arrangement for a lawn mower, particularly a rotary lawn mower, utilizing a driven disc frictionally

engaged by a driving wheel radially adjustable upon the disc, and engagement between the friction wheel and disc is controlled by the position of the steering handle for the mower.



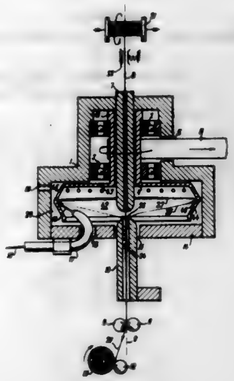
3,445,992
ROTARY MOWER BLADE
Rudolph A. Hanson and John E. Fischer, Jackson, Mich., assignors to Yard-Man, Inc., Jackson, Mich., a corporation of Michigan
Filed Apr. 20, 1966, Ser. No. 543,880
Int. Cl. A01d 55/18
U.S. Cl. 56—295 4 Claims



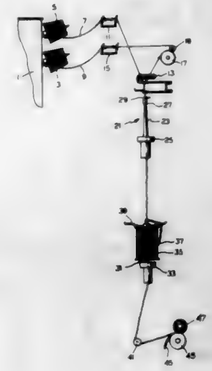
A blade for a rotoary mower wherein improved cutting, cleaning and air flow characteristics are obtained. The improvements are derived from a combination including a vane of a length substantially half of the blade body wherein the entire blade is effective for producing air flow, the vane extends in an arcuate manner about the intersection of the blade rear edge with the outer edge wherein grass clippings are restrained against being thrown outwardly against the mower housing in a radial direction. Additionally, the outer portion of the blade is deflected downwardly to reduce "drag" of the cut grass upon the blade.

3,445,993
METHOD OF AND APPARATUS FOR PRODUCING CORE YARNS
Přemysl Voříšek, Chocen, Czechoslovakia, assignor to Vyzkumny Ustav Bavlnarsky, Usti nad Orlici, Czechoslovakia
Filed Jan. 19, 1967, Ser. No. 610,296
Claims priority, application Czechoslovakia, Mar. 9, 1966, 1,573/66
Int. Cl. D02g 3/36; D01h 7/00
U.S. Cl. 57—6 10 Claims

The method and apparatus for covering a core yarn by feeding the core yarn axially into an entrance tube, through a rotating free-end spinning chamber and out through an aligned withdrawal tube while loosely separated fibers, to form the core covering, are fed into the spinning chamber, collected on a surface of the chamber and spun into a yarn which is then wrapped onto the core yarn just prior to its passage from the chamber to the withdrawal tube.

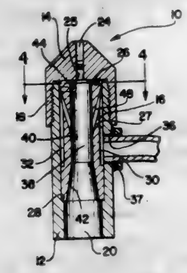


3,445,994
PROCESS FOR THE MANUFACTURE OF A LOOPED YARN AND APPARATUS THEREFOR
Raoul Michel Nalpas, Marcq-en-Baroeul, France, assignor to Moulinage Retorderie de Chavanoz, s.a., Chavanoz, France, a corporation of France
Filed June 12, 1967, Ser. No. 645,200
Claims priority, application France, June 17, 1966, 65,913
Int. Cl. D02g 3/36; D01h 7/02; D07b 3/02
U.S. Cl. 57—12 7 Claims



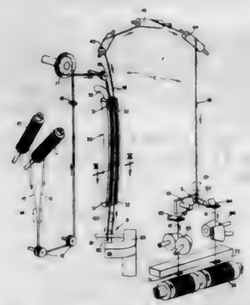
A method of producing a looped yarn wherein at least one effect yarn is overfed relative to a core yarn and is combined with said core yarn by means of a false-twisting spindle and the assembly is covered by winding with a binding yarn before the false twist disappears. An apparatus for producing such a looped yarn comprising feed bobbins for a core and effect yarn, means to tension said core yarn and means to overfeed said effect yarn in relation to said core yarn, a false twisting spindle comprising a revolving tube with a twist locking means to false twist a combined core and effect yarn system and means to bind said combined core and effect yarn system with a binding yarn before the false twisting has disappeared.

3,445,995
STRAND TWISTING APPARATUS
Charles C. Bell, Warwick, and Kurt W. Niederer, Saunderstown, R.I., assignors to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
Filed Dec. 19, 1966, Ser. No. 602,798
Int. Cl. D01h 13/26, 7/00
U.S. Cl. 57—34 10 Claims



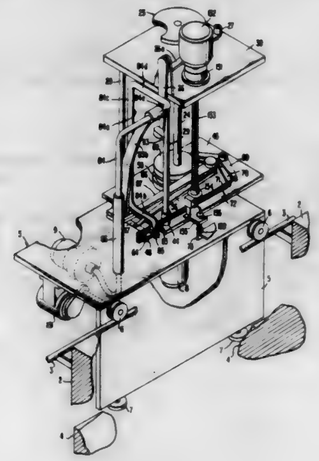
The instant invention is directed to an improved aspirator for twisting and manipulating fibrous yarn. A novel construction is disclosed which includes a chamber arranged to receive therethrough a strand of drafted fibers, a first aperture to direct pressurized fluid into the bore to twist the fibers into yarn, and a second aperture to direct pressurized fluid into the bore to draw the newly formed yarn therethrough. In an alternate embodiment the aspirator is connected to a suction system operable to draw fibers into the aspirator and simultaneously twist the fibers into yarn.

3,445,996
PREHEATING IN YARN TEXTURING
Emil J. Berger, Jr., Wayne, Pa., assignor to Turbo Machine Company, Lansdale, Pa., a corporation of Pennsylvania
Filed May 8, 1967, Ser. No. 636,814
Int. Cl. D01h 13/26, 13/28, 13/04; D02g 3/02
U.S. Cl. 57—34 5 Claims



In a system for texturing yarn using a false-twisting technique, two ends of multi-filament yarns of heat-settable material are pulled by delivery rolls, with the filaments untwisted, substantially flat, substantially parallel to each other, and under controlled tension through an elongated arcuate contact heater to preheat the yarn filaments. The two ends of preheated untwisted yarn then pass through a multi-stage device wherein the ends of yarn are transformed progressively in stages from untwisted condition into a two-ply twisted yarn. The two-ply twisted yarn is then further heated, and then passed through a cooling zone to set the twist. The ends of yarn are then separated and passed through the delivery rolls to separate take-up rolls. In the preferred embodiment, the single ends of yarn are preheated untwisted in the same arcuate contact heater in which the twisted yarn is heated. The method and apparatus are also applicable to texturing a single end of multi-filament yarn.

3,445,997
AUTOMATIC THREAD JOINER AND CONTINUOUS SPINNING MACHINES
Roberto Escursell Prat, 105 Ronda General Mitre, Barcelona, Spain
Continuation-in-part of application Ser. No. 469,799, July 6, 1965. This application Feb. 26, 1968, Ser. No. 708,066
Int. Cl. D01h 13/26
U.S. Cl. 57—34 20 Claims

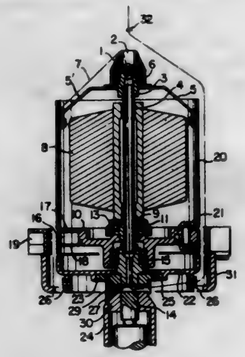


Improvements in an automatic thread joiner for a ring spinning machine, the thread joiner comprising a carriage movable back and forth along the spindle rail and carrying certain operating components, including extractor means for upwardly extending a broken thread extracted from a bobbin, which reciprocate vertically with the ring rail. The improvements provide a servo system and other mechanisms for controlling movement of the vertically reciprocating components, a slotted suction tube or a movable thread conveyor in association with the thread extractor, a safety device for, at desired times, rendering the joiner inoperative, and a simplified overall structure.

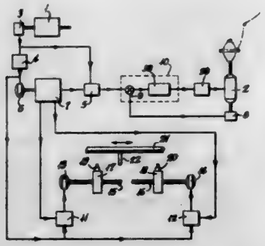
3,445,998
TENSIONING METHOD AND DEVICE OF TWO-FOR-ONE YARN TWISTERS
Teiji Nakahara, Mitsuo Fukunaga, and Toshiyuki Yamashita, Kyoto-shi, Japan, assignors to Murata Machinery, Ltd., Kyoto-shi, Japan, a company of Japan
Filed June 14, 1967, Ser. No. 645,987
Claims priority, application Japan, Sept. 2, 1966, 41/58,107
Int. Cl. D01h 1/10, 7/86; B65h 59/04
U.S. Cl. 57—58.84 13 Claims

A method and device for controlling unravelling tension of a yarn from a package on a two-for-one yarn twister. The package is mounted on a rotatable package receiver and starts to rotate when excessive unravelling tension is loaded upon the unravelling yarn. On an advansing path, the yarn is positively wound around a

spindle within a lower tension device at a given winding angle. Excessive yarn tension is prevented by the rotation of the package while small fluctuation of the yarn tension is compensated by the winding path of the yarn.



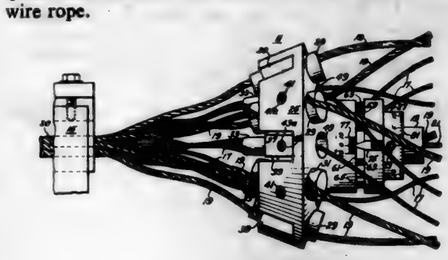
3,445,999
METHOD AND APPARATUS FOR PRODUCING YARN PACKAGES WITH A VARIABLE SPEED SPINDLE
Jan Robert de Ruig, Arnhem, Netherlands, assignor to American Enka Corporation, Enka, N.C., a corporation of Delaware
Filed Mar. 15, 1967, Ser. No. 623,278
Claims priority, application Netherlands, Mar. 18, 1966, 6603529, 6603530
Int. Cl. B65h *54/02*; B01h *13/00*
U.S. Cl. 57—94 **46 Claims**



A method for producing yarn package which comprises feeding the yarn to a variable speed spindle, winding the yarn on the spindle in a programmed manner to form a yarn package having peripheral speed equal to the yarn feed rate, and controlling the spindle speed in accordance with a preselected programme as a function of a variable representing the growth of the yarn package, said programme being independent of the yarn feed rate and automatically adapting the spindle speed to variations in the yarn feed rate. An apparatus is also disclosed.

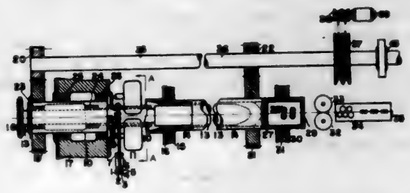
3,446,000
ADJUSTABLE QUILL HEAD AND INTERLOCKED WIRE ROPE MADE THEREWITH
Carl W. Smollinger and John Clyde Overdurf, Jr., Williamsport, Pa., assignors to Bethlehem Steel Corporation, a corporation of Delaware
Filed Mar. 27, 1968, Ser. No. 716,572
Int. Cl. D01h *13/04*; D07b *1/06*; D02g *3/36*
U.S. Cl. 57—138 **6 Claims**

An inner and an outer section of a quill head each carry one row of quills. The outer section is adjustable longitudinally and rotationally with respect to the inner section to provide precise alignment of the two groups of quills with respect to each other for forming interlocked wire rope.



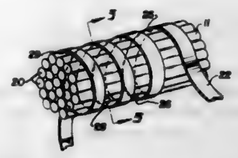
A wire rope having larger outer strands received evenly in the valleys between smaller inner strands and having effectively balanced internal stresses is formed by use of the quill head.

3,446,001
METHOD OF AND APPARATUS FOR FORMING STRANDED CABLES BY HIGH SPEED TENSILE HELICOID SYSTEM
Hisateru Akachi, Yokohama, Japan, assignor to Oki Densen Kabushiki Kaisha, Kanagawa-ken, Japan
Filed Jan. 3, 1967, Ser. No. 606,788
Int. Cl. D01k *13/04*; B21f *3/04, 7/00*
U.S. Cl. 57—138 **6 Claims**



A method and apparatus for forming a stranded cable at a high speed comprising the formation and means therefor of a helicoid of parallel component wire bands, stretching the helicoid with a predetermined tension, and further stranding the stretched helicoid so as to produce a stranded cable of considerably reduced pitch.

3,446,002
MONOFILAMENT TWINES
James A. Kippan, West Vancouver, British Columbia, Canada, assignor, by mesne assignments, to Delta Rope & Twine Limited, Nassau, Bahamas, a corporation of the Bahamas
Filed Mar. 22, 1965, Ser. No. 441,618
Int. Cl. D02g *3/00, 3/36, 3/38*
U.S. Cl. 57—140 **7 Claims**

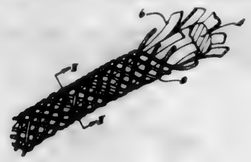


A twine comprised of a bundle of substantially parallel synthetic monofilaments with a synthetic binder material in thin band form wrapped around and fused to them so as to leave exposed parts of the outer monofilaments has been found to form knots which are less susceptible to slippage while maintaining good flexibility.

3,446,003
GLASS FIBER CORD CONSTRUCTION
Robert L. Kolek, Pittsburgh, and Norman G. Bartrug, Allison Park, Pa., assignors to PPG Industries, Inc., a corporation of Pennsylvania
No Drawing. Filed Jan. 3, 1967, Ser. No. 606,549
Int. Cl. D02g *3/18*
U.S. Cl. 57—140 **20 Claims**

A multiple ply glass fiber cord having a ply twist that has a lower number of turns per inch than the cord twist and wherein the maximum twist in the cord does not exceed five turns per inch.

3,446,004
WELTING CORD
Dale P. Wilterink, Anaheim, Calif., assignor to Sackner Products, Inc., Grand Rapids, Mich.
Filed Oct. 13, 1967, Ser. No. 675,755
Int. Cl. D02g *3/36, 3/06, 3/08*
U.S. Cl. 57—149 **6 Claims**



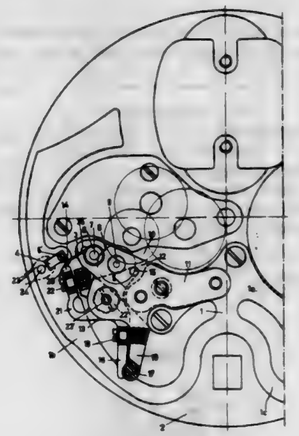
This disclosure relates to a welting cord comprising an inner core of crimped cellulose tissue crumpled traversely into an elongated, cylindrical, resilient body and wrapped with filaments so as to form an outer layer or jacket. The filament can be coated with a thermoplastic adhesive material which can be used in bonding the welting cord to fabric for making boxing material. The filaments can alternately be a solid thermoplastic material which, when heated, forms an adhesive and bonds to fabric for the making of boxing and the like.

3,446,005
HIGH ELASTIC CRIMPED FILAMENT YARN AND ITS MANUFACTURING METHOD
Kenzo Kosaka, Masami Tsunowaki, Nobuaki Yonekura, and Tsutomu Okaya, Nagoya-shi, Ken Mimatsu, Toyohashi-shi, and Tatsujiro Mori, Nagoya-shi, Japan, assignors to Mitsubishi Rayon Co., Ltd., Tokyo, Japan, a company of Japan
Filed Aug. 3, 1966, Ser. No. 569,961
Claims priority, application Japan, Aug. 5, 1965, 40/47,165; Aug. 9, 1965, 40/48,370
Int. Cl. D01f *7/02*; D02g *3/32, 1/20*
U.S. Cl. 57—157 **38 Claims**



High elastic multi-filament synthetic yarn is produced by spinning a multi-filament of thermoplastic synthetic material, the multi-filament comprising individual composite fibers each composed of two different component thermoplastic materials extending as distinct filamentary components along the length of the filament in adhering relationship; drawing, twisting and aging the multi-filament, and thereafter subjecting the multi-filament to heat treatment in relaxed condition to develop longitudinally arranged uniform helically coiled crimps in each composite filament of the multi-filament to impart high elasticity to the yarn by the coil spring action of the helically coiled filaments.

3,446,006
PAWL ADJUSTMENT MEANS IN AN ELECTRONIC TIMEPIECE
Remy Frossard, Neuchatel, Max Hetzel, Bienne, Henri Robert, La Chaux-de-Fonds, and Henri Haring, Tavannes, Switzerland, assignors to Centre Electronique Horloger S.A., Neuchatel, Switzerland, a company of Switzerland
Filed July 5, 1967, Ser. No. 651,208
Claims priority, application Switzerland, July 27, 1966, 10,860/66
Int. Cl. G04c *3/00*
U.S. Cl. 58—23 **9 Claims**

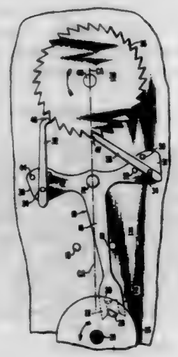


Electronic timepiece having means for adjusting the pressure with which the driving pawl or click acts with the ratchet wheel, means for adjusting the pressure with which the return pawl acts on the ratchet wheel and means for bringing into phase the beaks of the driving and return pawls.

3,446,007
PALLET TYPE INDEX MECHANISM
Nathan Cohen, Philadelphia, Pa., assignor to Hamilton Watch Company, Lancaster, Pa., a corporation of Pennsylvania
Filed Dec. 18, 1967, Ser. No. 691,447
Int. Cl. G04c *3/04*
U.S. Cl. 58—28 **13 Claims**

The index mechanism comprises a pallet pivoted at one end for rocking movement on a pallet plate and an oscillating roller having a pin engaging within the forked other end of the pallet to rock the latter. The pivoted end of the pallet has laterally extending table portions, the ends of which pivotally mount the ends of a pair of pallet arms. The opposite ends of the pallet arms engage teeth on an index wheel to advance the same in a single forward direction. Each pallet arm extends between a pair of pins mounted on the table portions, the inner pin associated with one of the pallet arms magnetically biasing the arm into engagement with the index

wheel while the outer pin associated with the other arm magnetically biases the other arm into engagement with

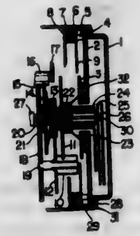


the index wheel teeth. The pallet arms alternately advance the index wheel on opposite strokes of the pallet.

3,446,008
HANDS SETTING DEVICE IN A WATCH MECHANISM

Kiyoshi Bansho, Tokyo, Japan, assignor to Yazaki Corporation, Tokyo, Japan, a joint-stock company of Japan

Filed Dec. 21, 1967, Ser. No. 692,384
Claims priority, application Japan, Dec. 27, 1966, 41/117,843
Int. Cl. G04b *27/00*
U.S. Cl. 58—85.5 10 Claims



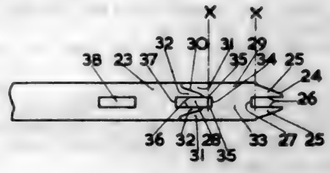
This invention discloses a hands setting device in a watch mechanism, wherein the hands are settable by rotating a windproof glass which is air- and water-tightly provided to the casing of the watch mechanism and selectively engageable with the driving shafts of the hands.

3,446,009
METHODS AND APPARATUS FOR MAKING STAPLES

Nicholas William Cane and William Rushton, Sutton Coldfield, England, assignors to Lightning Fasteners Limited, Witton, Birmingham, England, a corporation of Great Britain

Filed June 9, 1967, Ser. No. 644,871
Claims priority, application Great Britain, July 11, 1966, 30,977/66
Int. Cl. B21g *7/02*
U.S. Cl. 59—75 9 Claims

Method and apparatus for making U-shaped staples in which longitudinally spaced apertures are formed in a metal strip prior to severing staple blanks from the strip, the severed blanks then being bent along two bend lines to form the staples with edges of the apertures, forming

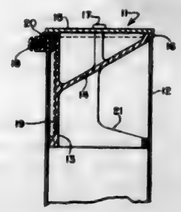


staple edges and extending bases of staple prongs, lying between the bend lines.

3,446,010
WEATHER CAP

Richard Bruce Hopkins, Cedar Falls, Iowa, assignor to Deere & Company, Moline, Ill., a corporation of Delaware

Filed Dec. 11, 1967, Ser. No. 689,396
Int. Cl. F02b *77/00*; F16k *15/00*; F23l *17/02*
U.S. Cl. 60—29 10 Claims

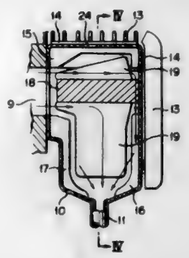


A weather cap for vertical exhaust pipes on internal combustion engines including a hollow body slidably received in the exhaust pipe and a closure plate secured to the upper end of the hollow body. The closure plate is of a size to cover the outlet end of the exhaust pipe and the hollow body is provided with at least one opening in its side wall to allow the escape of exhaust gases when exhaust pressure acting on the closure plate lifts the weather cap.

3,446,011
APPARATUS FOR CLEANING THE EXHAUST GAS OF AN ENGINE

Ietatsu Ohno, 1667-2-406, Mure, Mitaka, Tokyo, Japan

Filed May 22, 1967, Ser. No. 640,295
Claims priority, application Japan, May 25, 1966, 41/32,937
Int. Cl. F01n *3/10, 7/00*
U.S. Cl. 60—30 6 Claims

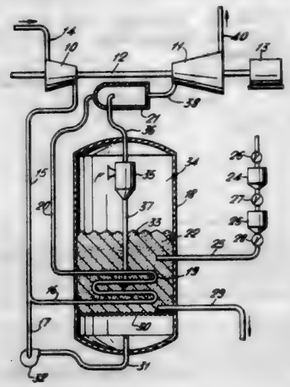


This invention discloses apparatus for completely burning the unburnt components in the blow-by gas of the engine by heating the unburnt components with a body to be heated having a plurality of fins directly connected to an exhaust port of the engine.

3,446,012
GASIFIER AND GAS TURBINE SYSTEM

Richard W. Foster-Pegg, Warren, Pa., assignor to Struthers Energy Systems, Inc., a corporation of Delaware

Filed Nov. 14, 1967, Ser. No. 682,966
Claims priority, application Great Britain, Nov. 15, 1966, 51,080/66
Int. Cl. F02c *3/26*
U.S. Cl. 60—39.02 7 Claims

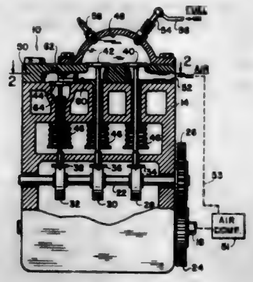


Coal is gasified to carbon monoxide and other combustible vapors and gases with the production of a great amount of heat in a gasifier. The gasifier is cooled with compressed air which is heated thereby and fed with the products of gasification to a gas turbine.

3,446,013
METHOD OF AND APPARATUS FOR INCREASING THE EFFICIENCY OF COMBUSTION ENGINES

Marvin R. Wall, P.O. Box 6851, Tulsa, Okla. 74156

Filed Apr. 18, 1967, Ser. No. 636,565
Int. Cl. F02g *3/02*
U.S. Cl. 60—39.06 15 Claims

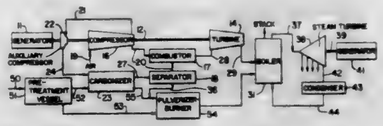


A new thermodynamic cycle concept involving a chemical combustion process of steps: (1) spontaneous ignition of the entire fuel charge, at high temperature (450–550° C.), of the combustion chamber wall, to reduce ignition lag and insure complete combustion of smog-producing hydrocarbon exhaust emissions; (2) by spontaneous ignition, control detonation, with its associated high temperature, (2500–4000° C.), and in combination control the combustion temperature, by expansion during combustion, to establish the combustion temperature below the dissociation temperature (2700–4700° C.), of the burning gases, to control formation of flame-formed nitrogen oxide exhaust emissions; (3) provide additional working fluid expansion to increase thermal efficiency. The teaching is particularly applicable to reciprocating combustion engines having an external combustion chamber, where expansion may occur between the combustion chamber and working cylinder during the combustion process.

3,446,014
PULVERIZER

Richard W. Foster-Pegg, Warren, Pa., assignor to Struthers Energy Systems, Inc., a corporation of Delaware

Filed Jan. 17, 1968, Ser. No. 698,652
Int. Cl. F02c *3/06, 3/10, 3/26*
U.S. Cl. 60—39.18 6 Claims

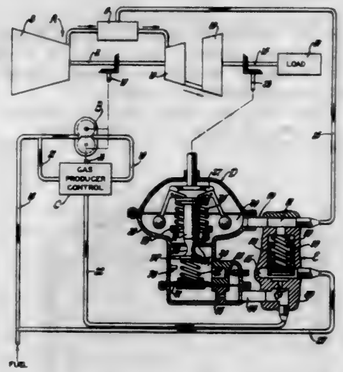


A combined steam and gas turbine plant operates on coal which is partially burned under pressure to provide combustible gases which are further burned to operate a gas turbine. Resulting hot char is pulverized in a fluid energy pulverizer and burned at a lower pressure in a furnace to generate steam with exhaust gases from the gas turbine. The fluid energy pulverizer may be operated by combustible gases from the partially burned coal or by lean gapor produced by the pretreatment of the coal.

3,446,015
GAS TURBINE FUEL METERING

William K. Kimmel, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

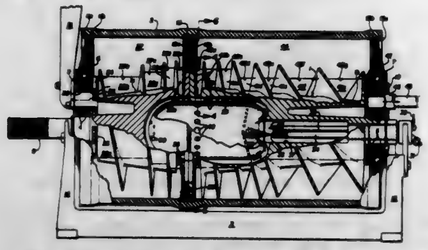
Filed Oct. 18, 1967, Ser. No. 676,305
Int. Cl. F02c *9/06, 9/08*
U.S. Cl. 60—39.28 2 Claims



The fuel control for a free turbine-type gas turbine engine includes a gas producer control and a power turbine governor connected in series between a source of fuel under pressure and the combustion apparatus of the engine. The power turbine governor valve has a minimum fuel flow stop and has connected in parallel with it a head regulating by-pass valve which controls the head across the governor valve. An orifice in series with the head regulating valve causes the head across the governor valve to increase as greater quantities of fuel are diverted through the by-pass, with the result that the

minimum flow upon major decrease of load on the power turbine or reduction in power control setting is greater when the gas generator turbine speed is higher. Thus, the minimum fuel flow schedule responds to gas generator speed.

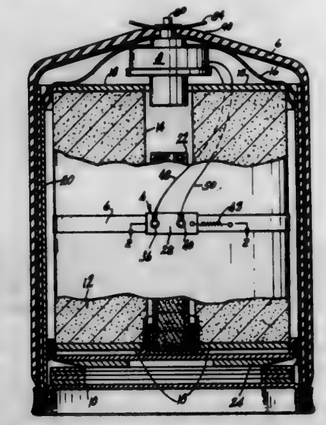
3,446,016
LIQUID SEALED CONTINUOUS COMBUSTION ENGINE
Mathew G. Boissevain, 27181 Sherlock Road, Los Altos Hills, Calif. 94022, and Jean Pierre Schneebeli, 2636 Newhall St., Santa Clara, Calif. 95050
Filed Feb. 13, 1967, Ser. No. 615,680
Int. Cl. F02g 3/00; F04f 11/00; F04c 19/00
U.S. Cl. 60—39.45 2 Claims



Our invention relates to engines of the rotary type and particularly to engines utilizing the action of a liquid upon a rotor having a novel construction to produce useful motive power. More specifically, our invention covers a simple internal combustion engine that makes use of a generally spiral shaped rotor inside a rotating tube containing a pressurized liquid ring to transform continuously the energy of expanding gases into useful work at an output shaft. It may be described also as a hybrid between a gas turbine and a piston type internal combustion engine.

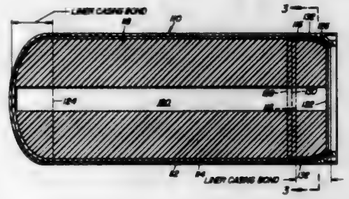
Our present invention is of the general class covered by our Patent No. 3,240,017 but is a considerable improvement upon the latter and utilizes an entirely different rotor which, among other things, eliminates the necessity for the use of complex valving mechanisms.

3,446,017
FAIL-SAFE SWITCH FOR GAS GENERATOR
Donald E. Bender, Herrin, and David H. Doiron, Red Bud, Ill., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed Nov. 22, 1966, Ser. No. 596,153
Int. Cl. F02g 3/00; F02k 9/04
U.S. Cl. 60—39.47 11 Claims



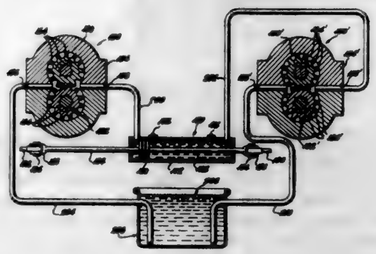
A gas generator having a cylindrical solid fuel charge, an igniter, a source of electrical energy and a fail-safe switch positioned about the circumference of said fuel charge and electrically connected to said igniter and said source of electrical energy, said switch being responsive to the expansion of said fuel charge upon an increase in ambient temperature for breaking the connection between said igniter and said source of electrical energy.

3,446,018
LINER FOR SOLID PROPELLANT ROCKET MOTOR
Albert W. Macbeth, Brigham City, Utah, assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Dec. 8, 1966, Ser. No. 600,210
Int. Cl. F02k 9/04
U.S. Cl. 60—39.47 3 Claims



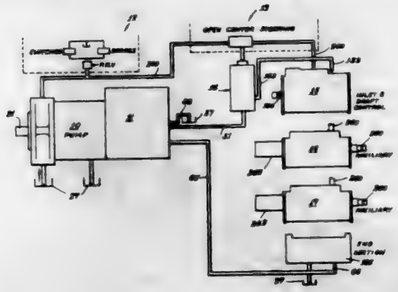
A solid propellant rocket motor casing is disclosed having an elastomeric liner covering substantially all of the inner surfaces thereof and bonded thereto along selected circumferentially extending bond areas, other interfacial areas of said casing and liner extending longitudinally from said bond areas being unbonded and thus free to more relative to each other.

3,446,019
FLUID POWER DRIVE APPARATUS
Leon D. Bullough, Rte. 2, Box 109, Grafton, W. Va. 26354
Continuation-in-part of application Ser. No. 608,385, Jan. 10, 1967. This application Mar. 27, 1967, Ser. No. 632,877
Int. Cl. F15b 7/10, 15/18; F04c 1/04
U.S. Cl. 60—52 6 Claims



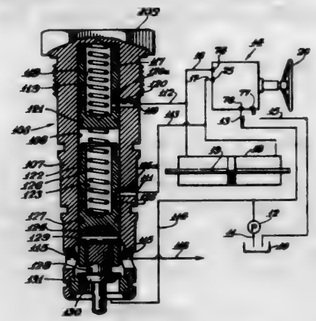
A pair of gear pumps are provided which are connected in series with one another and in series with the reciprocating driven means. The gear pumps are connected in series with one another through a reservoir means which may also function as a cooling means.

3,446,020
HYDRAULIC TRANSMISSION SYSTEM
William T. Stephens, Edina, Minn., and David N. Prevallet, Crawfordsville, Ind., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed May 29, 1967, Ser. No. 642,052
Int. Cl. F16h 39/46; F16k 39/48
U.S. Cl. 60—52 12 Claims



A system including a variable displacement pump to supply fluid under pressure to a plurality of work performing devices to be used alternatively or simultaneously including a control pressure circuit connected to a valve mechanism for each device, means connected to the control pressure circuit for changing the pump displacement when one of said valves is actuated and means responsive to the speed of the engine driving the pump for reducing the pump displacement in response to increased engine speed.

3,446,021
POWER STEERING UNIT WITH POPPET DIRECTIONAL CONTROL VALVES
Richard J. Lech, Hickory Hills, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed June 14, 1967, Ser. No. 646,034
Int. Cl. F15b 15/18
U.S. Cl. 60—52 11 Claims



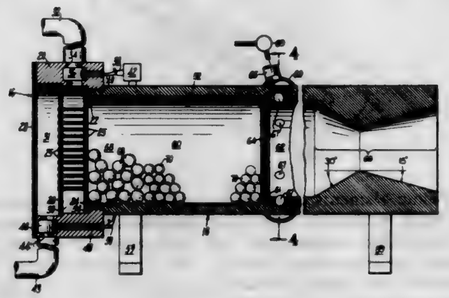
A vehicular hydrostatic power steering unit wherein an operator controlled auxiliary fluid pressure source hand pump is associated in close physical relationship with a plurality of check valves, pilot poppet valves and shuttle elements actuable to control the fluid flow and the direction of said flow into and out of a hydraulic cylinder operative for turning the steerable wheels of a vehicle in constant pressure-closed center and conventional open center type hydraulic circuits or systems.

3,446,022
INTEGRAL MOTOR CASE AND NOZZLE FOR SOLID PROPELLANT ROCKET MOTORS
Martin T. Olliff, Jr., Charles F. Williams, Travis J. Hagler, and Oscar M. Hawkins, Huntsville, and William R. Puckett, Trinity, Ala., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Feb. 6, 1967, Ser. No. 614,235
Int. Cl. F02k 9/04
U.S. Cl. 60—256 1 Claim



A solid propellant rocket motor having an integral rocket motor case and nozzle, and including a self-aligning, self-centering nozzle insert positioned in the nozzle at the aft end of the rocket motor case.

3,446,023
CATALYTIC ATTITUDE-CONTROL ROCKET MOTOR
Stanley A. Mosier, North Palm Beach, Fla., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Aug. 5, 1966, Ser. No. 570,479
Int. Cl. F02k 9/02
U.S. Cl. 60—257 12 Claims

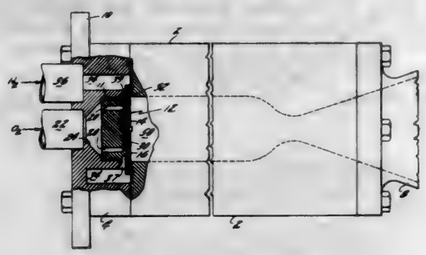


A catalytic rocket motor including an injector means having an injector face with a rocket body extending from said face. The rocket body having a primary reaction chamber in which ignition is obtained. A nozzle being located downstream of said primary reaction chamber and a propellant pretreatment chamber being located upstream of said primary reaction chamber and downstream of said injector face. Said propellant pretreatment chamber containing non-catalytic refractory pellet means and said primary reaction chamber containing reaction promoting catalytic pellet means.

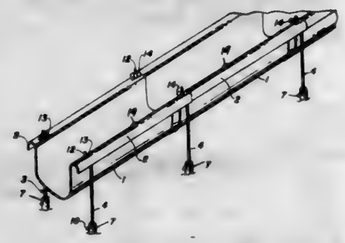
3,446,024
AXIAL CONCENTRIC SHEET INJECTOR
George D. Lewis and Donald E. Dahlberg, North Palm Beach, Fla., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Dec. 13, 1965, Ser. No. 514,433
Int. Cl. F02k 9/02
U.S. Cl. 60—258 10 Claims

An injector for a rocket having a supply of liquid propellants connected thereto. Said injector providing for the injection of the propellants as annular sheets. One propellant being injected as a cylindrical sheet with an

annular sheet of a second propellant being injected one on the outer side of said cylindrical sheet and one on the inner side. Each annular sheet of a second propellant being arranged to intersect said cylindrical sheet at different axial locations within the combustion chamber to deflect said flow in one direction and then the other.



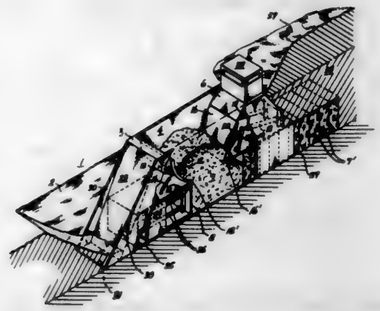
3,446,025
FLUID DISTRIBUTION MEANS
William L. Koch, San Francisco, Calif., assignor to H. Koch & Sons Inc., Corte Madera, Calif., a corporation of California
Filed Nov. 2, 1967, Ser. No. 680,101
Int. Cl. E02b *5/00*
U.S. Cl. 61—14 7 Claims



Flume elements, each consisting of a length of plastic material, preferably fiber glass reinforced plastic, having a trough-like cross-section with outwardly curved flanges along the free edges thereof, and a plurality of spaced supports, each being formed in a shape to fit into the opposite curved flanges and snugly fit around the exterior contour of the trough-like flume, and having a pair of legs respectively beneath the opposite flanges; and means engageable with the ground to adjustably hold said legs thereby to support the flume at a selected height above the ground. The ends of the flumes overlap at said supports and a non-hardening sealant layer is provided between the superimposed ends.

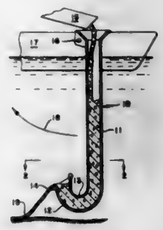
3,446,026
LANDFILL REFUSE-BURYING METHOD AND APPARATUS
Tyman H. Fikse, 1459 Loraine St., Enumclaw, Wash. 98022
Continuation-in-part of application Ser. No. 507,124, Nov. 10, 1965. This application Dec. 21, 1967, Ser. No. 692,349
Int. Cl. E02f *5/12*; B65g *65/30*; B30b *9/00*
U.S. Cl. 61—35 24 Claims

A hollow body of rectangular cross section fitting snugly in a trench has a refuse-receiving opening in its upper portion, a refuse-discharge opening in one end opening substantially horizontally and located a substantial distance below the refuse-receiving opening and a closed end opposite the refuse-discharge opening. A ram in the lower portion of the body is expandable to force refuse from the body hollow through the refuse-discharge opening beneath a deep layer of dirt over the refuse-discharge opening and the force thus exerted to discharge refuse moves the body along the trench away from the refuse-discharge opening. Side flanges projecting forward from the closed end of the body shave the trench wall to a size corresponding to the hollow body to enable it to move along the trench. Such side flanges can be pivoted to be swung for steering the body in the trench. The body



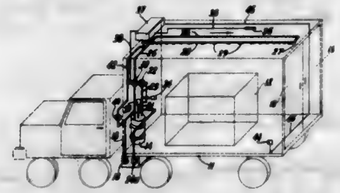
can be raised and lowered relative to endless tracks mounted on the swinging ends of swingable outrigger arms to raise or lower the body relative to the ground surface. A pivoted door of arcuate shape can be swung by a jack toward a second pivoted door above the ram, swingable by a second jack to move its swinging edge along the face of the curved door for pressing refuse from the upper portion of the body hollow into the lower portion in alignment with the ram and refuse-discharge opening. Pivoted tamping bars mounted on the rear end of the body can be swung to tamp backfill dirt in the trench.

3,446,027
APPARATUS FOR DEPOSITING A LAYER OF FLOWABLE MATERIAL UNDERWATER
Hermanus Meijer, Heemstede, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Aug. 14, 1967, Ser. No. 660,320
Claims priority, application Netherlands, Aug. 16, 1966, 6611475
Int. Cl. E02b *3/12*
U.S. Cl. 61—63 8 Claims



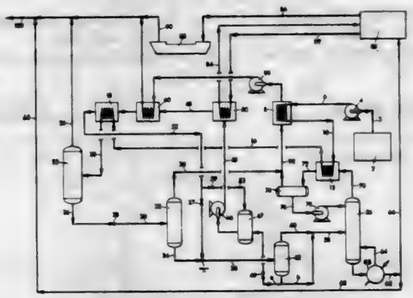
An apparatus for depositing flowable material, e.g., asphalt, underwater in which a supply conduit extending from the water surface to the point the material is to be deposited is provided at its lower end with a flow reversing device, such as a bent tube, having an outlet positioned above the lower end of the supply conduit. The flow reversing device thus forms a liquid trap to prevent the ingress of seawater into the supply conduit.

3,446,028
IN-TRANSIT LIQUEFIED GAS REFRIGERATION SYSTEM
James B. Wulf, Williamsville, N.Y., assignor to Union Carbide Corporation, a corporation of New York
Continuation-in-part of application Ser. No. 587,314, Oct. 17, 1966. This application July 11, 1968, Ser. No. 747,023
Int. Cl. B60h *3/04*; F17c *7/02*
U.S. Cl. 62—45 15 Claims



A system for refrigerating perishable products in which low boiling liquefied gas is provided, partially vaporized to form a liquid-vapor mixture containing at least 8% vapor and sprayed as discrete streams into the product storage chamber for uniform cooling.

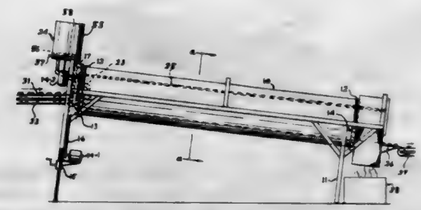
3,446,029
METHOD FOR HEATING LOW TEMPERATURE FLUIDS
Donald A. Grgurich, Morristown, William K. Johnston, Parsippany, and Walter Weissman, Morristown, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed June 28, 1967, Ser. No. 649,706
Int. Cl. F17c *7/02*
U.S. Cl. 62—52 5 Claims



This invention provides a method for heating low temperature fluids by using a recycled equilibrium process fluid as a heat exchange intermediate. By using this process fluid rather than a separate intermediate fluid, advantages are gained, in that, less heat exchange area is required, no separate handling facilities are needed for the intermediate fluid, and intermediate fluid losses are reduced.

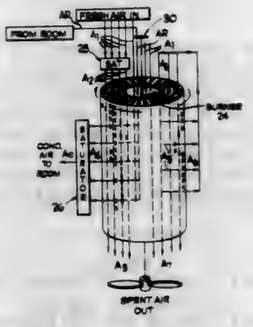
3,446,030
METHOD AND APPARATUS FOR QUICK FREEZING INDIVIDUAL FOOD ITEMS
Julius Rubin, Franklin Square, N.Y., assignor to Thermice Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed Sept. 11, 1964, Ser. No. 395,649
Int. Cl. F25d *13/06, 3/02, 3/12*
U.S. Cl. 62—63 15 Claims

6. The method of freezing food pieces in a space bounded by wall surfaces, which method comprises initially coating a wall at the beginning of said space with solid phase carbon dioxide in particulate form, placing a plurality of individual pieces on the coated wall, applying more solid phase carbon dioxide in particulate form to the surfaces of the pieces on said wall, advancing pieces from an entrance end of the space and lengthwise of the space in intimate contact with the carbon dioxide and while



the carbon dioxide sublimes as the result of heat absorbed from the food pieces, supplying an additional quantity of solid phase carbon dioxide in particulate form sufficient to freeze all of the pieces, and withdrawing the pieces in frozen condition from the opposite end of the space from said entrance end.

3,446,031
AIR CONDITIONING DEVICE USING ADSORPTION OF MOISTURE
Chang W. Chi, Chicago, and Robert A. Macriss, Deerfield, Ill., assignors to The Institute of Gas Technology, Chicago, Ill., a nonprofit corporation of Illinois
Filed Oct. 12, 1967, Ser. No. 674,876
Int. Cl. F25d *23/00, 17/06*; F28d *19/00*
U.S. Cl. 62—271 8 Claims

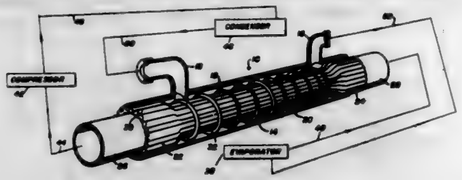


An open cycle air conditioning system having a composite S- and L-wheel arranged with vertical passages in heat exchange relation with horizontal passages, said horizontal passages having a solid adsorbent impregnated on the walls thereof. In one part of the wheel outside air passing through vertical passages cools horizontal passages in which room air is being dried while in another part of the wheel hot outside air that has passed through horizontal passages to dry the adsorbent passes through vertical passages to preheat horizontal passages which will be rotated to a position for drying of the adsorbent.

3,446,032
HEAT EXCHANGER
Edward W. Bottum, 9357 Spencer Road, Brighton, Mich. 48110
Filed Mar. 10, 1967, Ser. No. 622,132
Int. Cl. F28f *1/06, 1/36*
U.S. Cl. 62—513 1 Claim

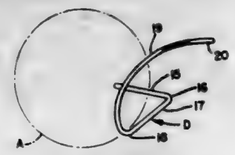
The heat exchanger is for heat exchange between fluids. The heat exchanger comprises an outer casing member having an inner thermally conductive casing member dis-

posed therein and spaced therefrom. Each of said casing members has an inlet and an outlet for fluid. The inner casing member may be fluted in the direction of fluid flow to increase the heat transfer surface and to assist



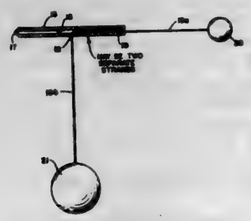
in maintaining turbulent flow of refrigerant. A helical coil may be provided on the inner casing member. A helically spiralled strip member may be provided within the inner casing member.

3,446,033
EARRING INCLUDING LOSS-PREVENTING ATTACHING DEVICE
Jesse L. Driscoll, 100 Oak Rim Way, Los Gatos, Calif. 95030
Filed Dec. 18, 1964, Ser. No. 419,461
Int. Cl. A44c 7/00
U.S. Cl. 63—12 1 Claim



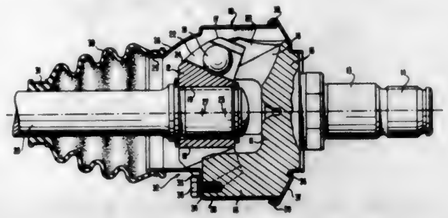
A device for attaching an ornament to the outer side of a pierced ear lobe by a single length of wire extending from the ornament straight through the lobe through a right angle bend at the inner side of the lobe, again straight and thence acutely back upon itself at an acute angle in the same plane, thence to a terminal portion bowed away from such plane and from the lobe. The device may have a sharp severable end for originally piercing the lobe.

3,446,034
PENDANT EARRING HAVING TOGGLE ATTACHING MEANS
Jesse L. Driscoll, 100 Oak Rim Way, Los Gatos, Calif. 95030
Filed Sept. 21, 1965, Ser. No. 488,990
Int. Cl. A44c 7/00
U.S. Cl. 63—13 9 Claims



A device for attaching ornaments to an ear. The ornaments are secured to a flexible filament extending straight through the pierced ear to a tubular rigid member extendable lengthwise through the pierced lobe, and which is adjustable to a position transversely of the pierced ear aperture thus forming a toggle which retains the ornaments on the outer side of the ear lobe.

3,446,035
LIMIT ABUTMENT FOR A SYNCHRONOUS SLIDING JOINT, ESPECIALLY FOR MOTOR VEHICLES
Kurt Enke, Fellbach, Wurttemberg, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Apr. 18, 1967, Ser. No. 631,823
Claims priority, application Germany, Apr. 19, 1966, D 49,879
Int. Cl. F16d 3/02, 3/16, 3/50
U.S. Cl. 64—8 14 Claims



A synchronous sliding joint, particularly for the axle drive of motor vehicles, including a first joint part having a plurality of substantially axially-extending arms, a second joint part having a plurality of substantially radially-extending star-shaped arms, which arms are constructed spherically about the center point of the joint on the side facing the shaft, and a sleeve secured to the first joint part, surrounding the second joint part and spaced therefrom, and having a rim portion spherically constructed with a similar radius, the center point of the sphere of the rim portion being displaced relative to the center point of the joint by the predetermined sliding path.

3,446,036
KNITTING MACHINE
John Carr Doughty, 3 Darker St., Leicester, England
Filed Dec. 28, 1966, Ser. No. 605,320
Claims priority, application Great Britain, Jan. 12, 1966, 1,365/66
Int. Cl. D04b 9/12, 9/16
U.S. Cl. 66—8 9 Claims

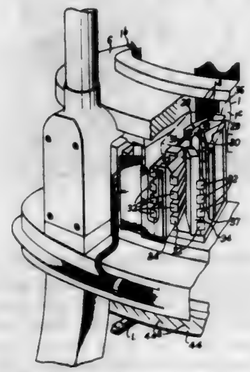


Knitting apparatus having a second group of knitting instruments remote from a corresponding first group. These groups of instruments have respective sets of operating butts. Cams are provided for action upon the butts of at least the first group of instruments. There are means for effecting relative unidirectional movement between a bed containing the last mentioned group of instruments and the cams. Intermediate movement-transmitting means are provided between the first and second groups of instruments, and these means remotely operate the knitting instruments of the second group, e.g. in a reverse sequence, each time the first set of operating butts are directly acted upon by the cams.

The groups of instruments may be in the same bed or in respectively different beds.

Feeders present yarns to relevant instruments. Such feeders are interconnected with the cams and knitting instruments, and elements associated with the cams move the feeders in conjunction with the knitting operation.

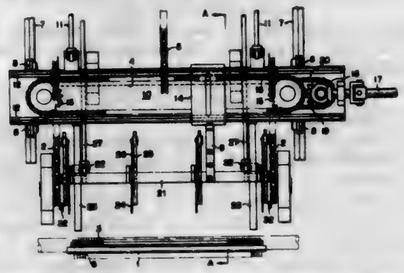
3,446,037
PATTERNING SYSTEM FOR KNITTING MACHINES
Jack Sutton, Fawley, England, assignor to G. Stibbe & Company Limited, Leicester, England, a British company
Filed Mar. 2, 1966, Ser. No. 531,109
Claims priority, application Great Britain, Mar. 5, 1965, 9,374/65
Int. Cl. D04b 9/06, 9/38, 15/66
U.S. Cl. 66—25 16 Claims



A multi-feed circular knitting machine equipped with electronic patterning system. Needles in a rotary cylinder are associated with patterning butts in several planes. Banks of selectively operable electro-magnetic butt displacing devices displace butts in relation to raising cams whereby some needles knit and others do not. A flat control transparency bears information in analogue form influencing the butt displacing devices. A flying spot cathode ray tube scans this information which is converted into digital pulses.

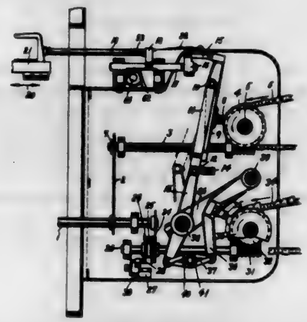
The system includes a magnetic core store, and means for receiving and discriminating the pulses and routing them either to desired one of the electro-magnetic butt displacing devices or to the magnetic core store.

3,446,038
WEFT INSERTING METHOD AND APPARATUS
Toshiaki Inui, 4—153 Gakuen Daiwacho, Nara, Nara Prefecture, Japan
Filed Feb. 7, 1968, Ser. No. 703,735
Claims priority, application Japan, June 16, 1967, 42/38,553
Int. Cl. D04b 23/12, 31/00
U.S. Cl. 66—84 2 Claims



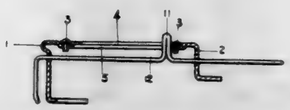
A weft inserting method and apparatus feeding to needles the wefts having equal length to the knitted width and hooked on a hooked chain rotatable intermittently in synchronization with knitting motion of the needle by the weft inserting apparatus operated correspondingly to the motion of needle, thereby knitting fabrics at the same knitting speed as of fabric material inserted the wefts over the entire length of the knitted width.

3,446,039
AUTOMATIC CHAIN CHANGING APPARATUS FOR FLAT KNITTING MACHINES, PREFERABLY RASCHEL WARP KNITTING MACHINES
Reinhold Schmid, Wilhelmshaven, Germany, assignor to Wirkmaschinen-Fabrik Wilhelm Barfuss G.m.b.H., Wilhelmshaven, Germany, a firm
Filed Dec. 20, 1966, Ser. No. 603,278
Claims priority, application Germany, Dec. 23, 1965, W 40584
Int. Cl. D03c 15/02
U.S. Cl. 66—86 10 Claims



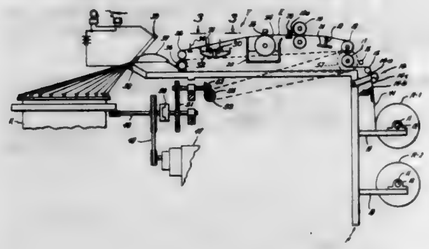
This invention provides an automatic chain changing apparatus for flat knitting machines. The apparatus includes means for guiding a main pattern chain having individual tracks over a main pattern chain drum. A control chain having individual tracks is guided over a control chain drum. A shifting lever construction which provides a multi-part shifting lever adjacent each of the said chain operates in conjunction with a striker bar to transmit the desired movement to a single layering rail on the said knitting machine.

3,446,040
NEEDLE BED FOR DOMESTIC KNITTING MACHINES
Simeon H. Groom, Johannesburg, Transvaal, Republic of South Africa, assignor to Empisal (Proprietary) Limited, Johannesburg, Transvaal, Republic of South Africa
Filed Apr. 13, 1967, Ser. No. 630,625
Claims priority, application Republic of South Africa, Apr. 19, 1966, 66/2,258; Jan. 9, 1967, 67/110
Int. Cl. D04b 15/10
U.S. Cl. 66—115 2 Claims



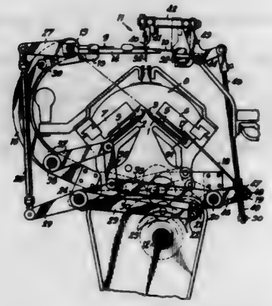
In a needle-bed for a domestic knitting machine with an upper plate slotted to guide the butts of the sinkers, the plate is formed of two overlapped thicknesses of metal.

3,446,041
FABRIC FORMING APPARATUS
Ronald H. Marks, Lawrence R. Goodman, Luther E. Stokes, and Roy H. Millard, Dallas, Tex., assignors, by direct and mesne assignments, to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Feb. 10, 1966, Ser. No. 526,580
Int. Cl. D04b *15/48*
U.S. Cl. 66—125 3 Claims



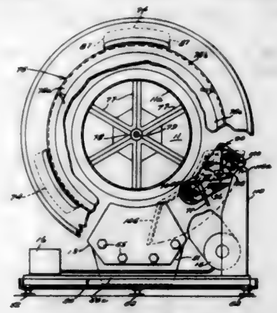
An apparatus for producing a knitted fabric including a knitting machine, and a frame for supporting a roll of web material, a cutter to divide the web material into a plurality of elements and means delivering the elements to the knitting machine for knitting into a fabric. This abstract is neither intended to define the invention of the application which, of course, is measured by the claims, nor is it intended to be limiting as to the scope of the invention in any way.

3,446,042
AUTOMATIC DEVICE FOR TRANSFERRING A RIB END FROM A NEEDLE ROW OF A FLAT KNITTING MACHINE TO A LOOP TRANSFER REED
Léon Fontaine, Gent, Belgium, assignor to Fabrique Nationale d'Armes de Guerre, Societe Anonyme, Herstal-lez-Liege, Belgium
Filed Jan. 26, 1967, Ser. No. 611,961
Claims priority, application Belgium, Feb. 1, 1966, 675,851
Int. Cl. D04b *9/40*
U.S. Cl. 66—148 11 Claims



A flat knitting machine is provided with a device for transferring a rib end, which includes a loop transfer reed having teeth which grasp loops of the last loop row of the rib, whereupon these loops are hooked upon a magazine reed.

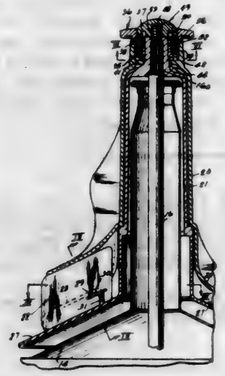
3,446,043
SPEED CONTROL FOR A LAUNDRY MACHINE
Glen R. Severance, Benton Harbor, Mich., assignor to Whirlpool Corporation, Benton Harbor, Mich., a corporation of Delaware
Original application Mar. 2, 1964, Ser. No. 348,459. Divided and this application Apr. 8, 1966, Ser. No. 559,020
Int. Cl. D06f *33/02*
U.S. Cl. 68—12 22 Claims



A laundry machine having a receptacle adapted for rotation at a low speed to wash clothes therein and at a high speed to centrifugally extract water from the clothes after completion of the wash cycle. The laundry machine includes a support for journaling the receptacle and balancing means connected to the support and cooperable with balance pockets formed along the periphery of the receptacle. Water is supplied to the balance pockets in response to the vibration of the balancing means due to the unbalanced condition of the clothes within the receptacle. A direct current motor is coupled to the receptacle to rotate the receptacle at any desired speed. The control of the direct current motor is accomplished by a motor control circuit which includes rectifier means operative to convert the input alternating current voltage to a direct current voltage. Additionally, the speed control circuit includes means responsive to unbalanced loads within the receptacle to prevent excessive vibrations during the spin cycle of the laundry machine. A switch is operated in response to an unbalanced condition above a certain level. The switch is connected to the speed control system in a manner such as to automatically control the rate of acceleration of the receptacle in coincidence with the rate of balancing of the receptacle by the automatic balancing system. Also, the switch is actuated by the balancing means to provide simultaneous dynamic balancing of the receptacle as well as speed control of the drive motor.

3,446,044
WASHING MACHINE WITH ADJUSTABLE AGITATION VANES
Charles R. Mischke, St. Joseph, Mich., assignor to Whirlpool Corporation, St. Joseph, Mich., a corporation of Delaware
Filed Aug. 11, 1967, Ser. No. 659,995
Int. Cl. D06f *17/10, 37/00*
U.S. Cl. 68—133 12 Claims

A washing machine having an agitator including relatively rotatable inner and outer members. An agitator vane is carried by the agitator members for radial movement as the agitator members are rotated relatively. A clutch mechanism is mounted on the agitator members and comprises a collar keyed to the inner agitator member for joint rotation and for relative movement axially. Two sets of gear teeth are formed respectively on radially extending walls formed on the collar and on the outer agitator member. The collar is axially movable to one position at which the two sets of teeth mesh for joint rotation of the inner and outer agitator members. The collar is also movable to a second position to disengage the gear teeth and to enable the outer agitator member to



be rotated relative to the inner agitator member to adjust the radially movable vane. A spring biases the collar back to said one position thereof to re-engage the gear teeth and to connect the inner and outer agitator members for joint rotation.

3,446,045
LOCKABLE FASTENER WITH PLUNGER-SLEEVING DRAW KEY
Frederick P. Finck, Jr., Fairfield, Conn., assignor to The Ruleta Company, Inc., Bridgeport, Conn., a corporation of New York
Filed Dec. 20, 1967, Ser. No. 692,099
Int. Cl. E05b *67/36, 19/00*
U.S. Cl. 70—34 10 Claims



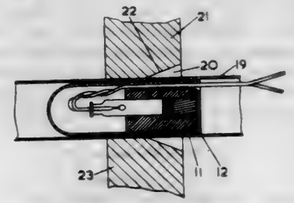
A fastener applied to a valve or the like for preventing unauthorized opening thereof and comprising two hollow, axially partable, telescoped members releasably locked together by the reciprocative movement of a contained plunger reached by inserting a draw key through a restricted opening in the end of one of the fastener members. Novelty resides in the plunger having a projecting stud that is sleeved over by a hollow end of the draw key which end is then caused to contract radially by manipulation of the key from outside the fastener whereby to cause said hollow end of the key to clasp the plunger stud with sufficient tightness to pull the plunger into fastener unlocking position.

3,446,046
BOLT-LOCK MEANS FOR VENDING MACHINES OR THE LIKE
Mortimer A. Randel, 21 Primrose Lane, Valley Stream, N.Y. 11580
Filed Mar. 20, 1967, Ser. No. 624,245
Int. Cl. E05b *65/06, 65/46*
U.S. Cl. 70—101 4 Claims



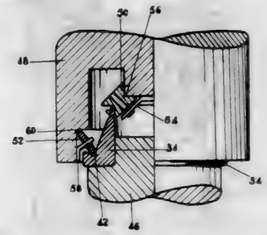
A slide bolt is used to lock a vending machine cabinet to make it resistant to pry bar entry.

3,446,047
DETONATOR LOCATING DEVICE
David Blackhall Cleland, Stevenston, Scotland, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
Filed May 15, 1967, Ser. No. 638,478
Claims priority, application Great Britain, June 3, 1966, 24,855/66
Int. Cl. B21d *26/04;* F42b *37/00*
U.S. Cl. 72—56 11 Claims



Detonator locating device comprises a body member with an axial bore, to hold the detonator, and a sleeve member.
This may be used for jointing copper tubes into condenser end plates.

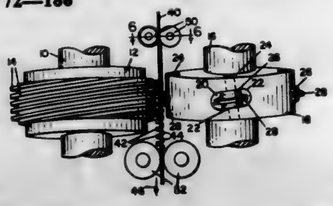
3,446,048
PROFILING OF ANNULAR WORKPIECES
Jacob Marcovitch, Johannesburg, Republic of South Africa, assignor to Rotary Profile Anstalt, Vaduz, Liechtenstein
Filed Jan. 6, 1967, Ser. No. 607,804
Claims priority, application Republic of South Africa, Jan. 14, 1966, 66/224; Apr. 12, 1966, 66/2,066
Int. Cl. B21d *3/02*
U.S. Cl. 72—126 4 Claims



An annular workpiece is profiled by means of juxtaposed rollers defining a profiling space of diminishing ex-

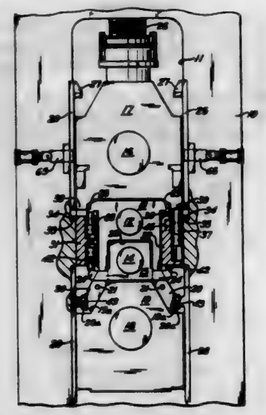
tent in which the workpiece is contained, with a cylindrical mandrel threaded through it, the ends of the mandrel rolling on one of the rollers and pressing the workpiece towards the other roller; the workpiece having first imposed on it an intermediate profile and being then subjected to a second operation to complete the profile; at least one of the two operations being a profiling operation as above set out.

3,446,049
APPARATUS FOR SLITTING AND FORMING STRIP MATERIAL
Howard A. Greis, Holden, Mass., assignor to Kinefac Corporation, Worcester, Mass., a corporation of Massachusetts
Filed Sept. 8, 1967, Ser. No. 666,253
Int. Cl. B21d *28/36, 28/26*
U.S. Cl. 72—186 **9 Claims**



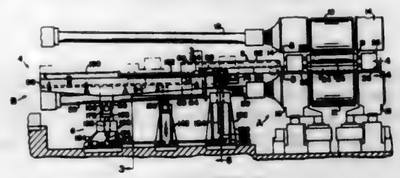
A slitting and forming apparatus particularly for acting upon sheet metal strip and utilizing a pair of cooperating male and female rotary dies in skewed relationship so that the strip passing between them will be automatically fed and at the same time acted upon by the dies, wherein the female rotary die comprises a generally continuous helical thread-like operative surface and the male rotary die is provided by intermittent mutually circumferentially spaced cutting members or operative surfaces which cooperate with the female die by entering between the starts thereof in order to either form i.e., dimples, or slits in the strip.

3,446,050
ROLLING MILLS
Jeremiah Wagner O'Brien, Pittsburgh, Pa., assignor to United Engineering and Foundry Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 29, 1966, Ser. No. 561,434
Claims priority, application Great Britain, Dec. 6, 1965, 51,698/65
Int. Cl. B21b *31/10*
U.S. Cl. 72—239 **14 Claims**



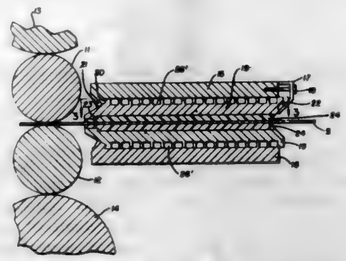
The present disclosure relates to a 4-high rolling mill constructed and arranged to enable both the balance cylinders of the work rolls and the work rolls themselves to be quickly and easily removed. The balance cylinders are received in replaceable carrying means that project into the windows of the mill and are carried on a ledge of the housings. The balance cylinders for the work rolls project in a vertical direction from the opposite sides of the carrier. The work rolls are removed as a unit in providing a pair of rails that run between the housings. Since the rails are stationarily mounted, they are provided with recesses that allow the work rolls to be adjusted during rolling. The work rolls are carried over the recesses during their removal and replacement by projections provided on the upper backup chock.

3,446,051
APPARATUS FOR INSERTING AND REMOVING WORKING ROLL SETS FROM A 4-HIGH MILL
Oscar P. Ballintine, Jr., Columbiana, Ohio, assignor to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware
Filed Apr. 18, 1967, Ser. No. 631,643
Int. Cl. B21b *31/08, 35/02*
U.S. Cl. 72—239 **13 Claims**



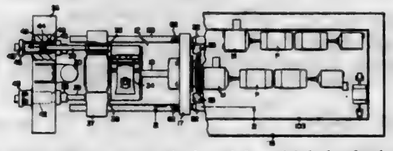
An apparatus for inserting and removing working roll sets from a 4-high mill having the normal back-up rolls driven by laterally extending drive shafts connected to motors spaced from the mill. The apparatus includes two concurrently movable shuttle assemblies positioned intermediate the drive shafts and each having cantilever tines for receiving a roll set and moving the set through the side window of the 4-high mill from the drive side of the mill.

3,446,052
ROLLING MILL ENTRY GUIDES
Grant A. Oakes, R.D. 4, Cortland, Ohio 44410, and Vincent B. Cetrone, 8569 Sleepy Hollow Drive, Warren, Ohio 44484
Continuation-in-part of application Ser. No. 577,516, Sept. 6, 1966. This application Jan. 20, 1967, Ser. No. 610,550
Int. Cl. B21b *39/20;* **B21d** *43/16*
U.S. Cl. 72—250 **3 Claims**



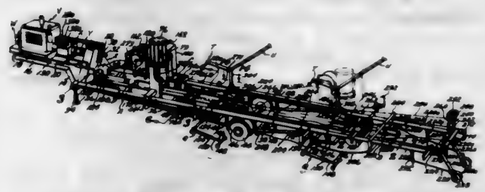
Rolling mill entry guides including support members positioned above and below the pass line of the rolling mill and supporting body members having replaceable oppositely disposed wearing surface portions formed of plastic material. This application is a continuation-in-part of our application Ser. No. 577,516 filed Sept. 6, 1966, entitled, "Rolling Mill Entry Guides."

3,446,053
HYDRAULICALLY OPERATED MACHINE AND CONTROL SYSTEM THEREFOR
William L. Govan, Rochester, N.Y., assignor to Farrel Corporation, Rochester, N.Y., a corporation of Connecticut
Filed May 2, 1966, Ser. No. 546,820
Int. Cl. B30b *11/30*
U.S. Cl. 72—253 **11 Claims**



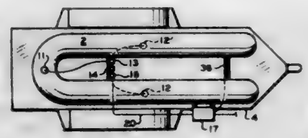
An extrusion press is disclosed in which both the ram and the billet container are reciprocable to and from the die; and the ram is reciprocated by a main hydraulically-operated piston and by two auxiliary pistons disposed at opposite sides, respectively, of the main piston. Mounted in each auxiliary piston is a rod which engages the container to transmit forward motion of the ram to the container until the container engages the die. Thereafter the ram moves forwardly independent of the container to force the billet through the die. Then two hydraulically-operated pistons return the container with the ram to the starting position of the container. Then the ram is retracted to its starting position by its pistons.

3,446,054
APPARATUS FOR STRAIGHTENING ELONGATE METAL MEMBERS
Whetstine B. Pridy, 6113 Autry Ave., Lakewood, Calif. 90712
Filed Jan. 16, 1967, Ser. No. 609,376
Int. Cl. B21d *7/04, 43/00*
U.S. Cl. 72—389 **10 Claims**



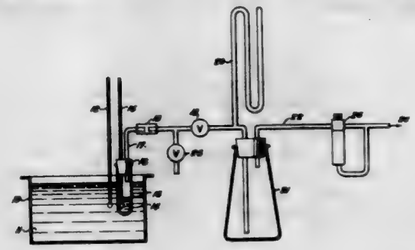
An improved portable apparatus for straightening elongate members such as tubing, drill pipe, sucker rod, and the like, at a predetermined location, and for removing foreign material from the interior thereof when desired.

3,446,055
METER CALIBRATION
Lee Tuck and Bruce E. Ewers, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Sept. 26, 1966, Ser. No. 582,041
Int. Cl. G01f *25/00*
U.S. Cl. 73—3 **2 Claims**



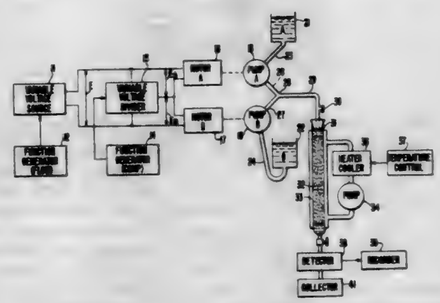
A flow meter is calibrated by diverting the process stream flow near the meter into a tubular free piston type calibration apparatus after which the metered liquid is removed from the apparatus by suitable pumping means and the meter prover is heated by a controlled amount to vaporize a part of the metered liquid thereby expediting the removal of liquid from the apparatus without subjecting either the process media or calibration apparatus to atmospheric contamination.

3,446,056
METHOD AND APPARATUS FOR DETERMINING EQUILIBRIUM TEMPERATURE-PRESSURE DATA OF VOLATILE LIQUIDS
Edward James Koch, 5518 Melshire Drive, Dallas, Tex. 75230
Filed Mar. 24, 1965, Ser. No. 442,447
Int. Cl. G01n *25/02*
U.S. Cl. 73—17 **3 Claims**



A method, together with the necessary apparatus, is disclosed, which provides for the determination of equilibrium temperature-pressure data of volatile liquid systems. Said method involves the observation of the lowering of the temperature of at least two samples of said liquid when such samples are suddenly subjected to a reduced pressure at which the liquid will boil. Variations in the lowering of the sample temperatures are made by using different initial sample temperatures or by submitting the samples to different reduced pressures. Results obtained are then extrapolated to zero sample temperature change to obtain equilibrium temperature-pressure data.

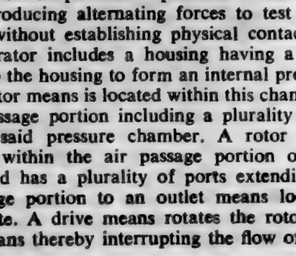
3,446,057
METHOD AND APPARATUS FOR CHROMATOGRAPHY
Stephen R. Bakalyar, Berkeley, and Joseph Kramasz, Jr., Concord, Calif., assignors to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Oct. 14, 1966, Ser. No. 586,773
Int. Cl. G01n *31/08*
U.S. Cl. 73—23.1 **19 Claims**



A method and apparatus usable as a chromatographic system which provides for simultaneously, independently, and automatically varying the flow rate and chemical

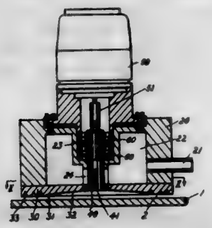
composition of the mobile phase in accordance with preselected function of time. The mobile phases to be mixed are stored in reservoirs having individual flow controllers operated by signals from a voltage divider network. The voltage applied to the divider determines the flow rate of the mobile phase while the voltage ratios determine its composition. Programming means vary both the voltage applied to the divider and the divider ratios according to preselected functions of time.

3,446,058
TOOL WEAR-BROKEN TOOL INDICATOR
Hugh B. May, Hillsdale, Mich., assignor to Simpson Manufacturing Company, Litchfield, Mich., a corporation of Michigan
Filed May 25, 1966, Ser. No. 552,789
Int. Cl. G01b *13/08*
U.S. Cl. 73—37.5 **14 Claims**



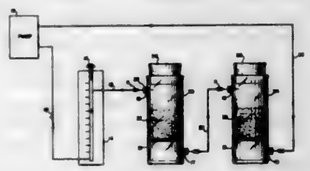
A tool wear-broken tool indicator which inspects a cutting tool in situ for both wear and breakage after each cycle of operation. An air inspection device is brought into engagement with the tool after the tool is withdrawn from the workpiece at the end of a working cycle. Compressed air is ejected adjacent the cutting tool edge. Sensing means are associated with the compressed air source whereby the characteristics of the cutting tool edge are determined.

3,446,059
VIBRATION GENERATOR
Oskar Bschorr, 2 Kirschackerweg, Munich, Germany
Filed Feb. 24, 1967, Ser. No. 618,543
Int. Cl. G01n *29/00*
U.S. Cl. 73—71.5 **9 Claims**



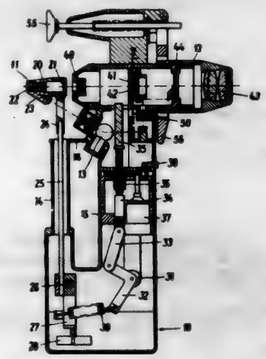
This invention provides a pneumatic vibration generator for producing alternating forces to test a structural member without establishing physical contact therewith. The generator includes a housing having a cover plate secured to the housing to form an internal pressure chamber. A stator means is located within this chamber and has an air passage portion including a plurality of openings into the said pressure chamber. A rotor is rotatably mounted within the air passage portion of the stator means and has a plurality of ports extending from the air passage portion to an outlet means located in the cover plate. A drive means rotates the rotor within the stator means thereby interrupting the flow of air through the said cover plate outlet means to form a pulsating air cushion between the cover plate and the said structural member. It is thereby possible to create alternating forces of optional frequency and optional intensity that correspond to the breaking frequency and the compressed air supplied to the pressure chamber.

3,446,060
METHOD FOR DETERMINING ORGANIC LOADING ON CHARCOAL
David L. Venezky, Fairfax County, Va., and William B. Moniz, Clinton, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed Aug. 1, 1967, Ser. No. 657,714
Int. Cl. G01n *25/56*
U.S. Cl. 73—76 **10 Claims**



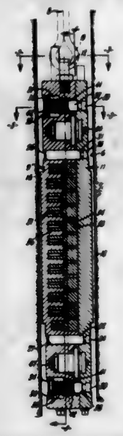
The organic loading of sorbent material is determined by comparing the moisture loss from the sorbent material, to the moisture loss from material of known organic loading, where each is exposed to dried gas; the amount of organic loading being roughly inversely proportional to the moisture removed from the sorbent material.

3,446,061
OCULAR INSTRUMENTS
Jörg A. Draeger, Hamburg, and Friedrich J. Klein, Wedel, Holstein, Germany, assignors to J. D. Moller Optische Werke G.m.b.H., Wedel, Holstein, Germany
Filed Nov. 1, 1965, Ser. No. 505,880
Claims priority, application Germany, Sept. 16, 1965, M 66,655
Int. Cl. A61b *9/00*
U.S. Cl. 73—80 **7 Claims**



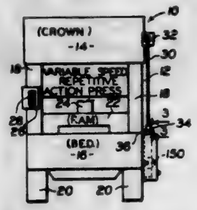
An applanation tonometer includes a casing constructed to be held in the hand. A microscope is mounted on the casing as is also an adjustable application plate arranged to engage the head of a subject. An arm is pivotally mounted in the casing and has a free end projecting therefrom and carrying a transparent pressure body for application against the cornea of the eye to be tested. A scale is movably mounted in the case and connected by a lever and rod system in the case to the arm, the scale indicating the measuring force exerted on the cornea. The transparent pressure body has its optical axis aligned with the optical axis of the microscope. A light source in the casing directs light at an angle to the applanation surface of the transparent pressure body and also illuminates the scale. An electric motor in the casing is in driving relation with the lever and rod system.

3,446,062
DEVICE FOR TESTING ROCK IN PLACE
Richard E. Goodman, Albany, Don O. Horning, Berkeley, and Anatol J. Hariamoff, Kensington, Calif., assignors to The Regents of the University of California, Berkeley, Calif.
Filed Aug. 22, 1966, Ser. No. 573,920
Int. Cl. G01n *3/00*
U.S. Cl. 73—84 **3 Claims**



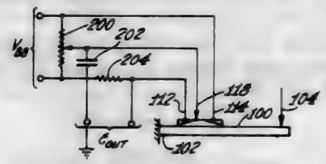
A device for testing rock in place has bearing shoes moved apart by a plurality of elliptical, hydraulically expansible chambers arranged with their short dimensions close together, the expanding distance between the shoes being automatically measured.

3,446,063
MACHINE LOAD INDICATOR WITH ADJUSTMENT FOR SPEED
George Wintriss, Carversville, Pa., assignor to Industrionics Controls, Inc., New York, N.Y., a corporation of New York
Filed Feb. 9, 1967, Ser. No. 614,945
Int. Cl. G01n *3/02*
U.S. Cl. 73—88 **11 Claims**



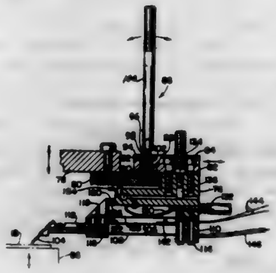
This invention relates to apparatus for indicating the load on a press or other machine. The invention has a self-compensating motion-transmitting connection that is responsive to the elongation of the frame of the machine when subjected to different loads. The motion is used to control a fluid flow which effects pressure to give a read-out without the use of electronic amplification. This invention is especially concerned with compensation of such a system for changes in the speed of the machine.

3,446,064
STRESS SENSOR
Ronald Bowman, Tujunga, Calif., assignor, by mesne assignments, to Whittaker Corporation, Los Angeles, Calif.
Filed Dec. 19, 1966, Ser. No. 602,872
Int. Cl. G01n *7/22*
U.S. Cl. 73—88.5 **6 Claims**



The present invention relates to means for detecting stress. In particular, the present invention relates to a device which may be used to provide for a detection of stress after the stress is above a predetermined threshold level by producing a switching characteristic. Also, the present invention relates to the use of such a threshold stress detection device as part of an oscillator circuit to provide a frequency modulated output signal having a frequency in accordance with the stress. Basically the stress sensitive device of the present invention operates as a switching device which provides for the switching characteristic after the stress is above a threshold level.

3,446,065
AUTOMATIC PROBING APPARATUS
Mordechai Wiesler, Lexington, and Avigdor Goren, Cambridge, Mass., assignors to Transistor Automation Corporation, Cambridge, Mass., a corporation of Massachusetts
Filed Aug. 11, 1965, Ser. No. 478,902
Int. Cl. G01b *5/28, 7/34*
U.S. Cl. 73—105 **5 Claims**



A probe mounting device is provided for use in testing and performing other operations on objects such as integrated circuit wafers. The probe mounting mechanism includes a pair of spaced parallel leaf springs having the probe mounted at one end and a support rigidly securing the opposite end of the springs. The parallel mounting arrangement produces a straight line motion of the probe tip when it is deflected. A joy stick mechanism supports the springs in such a fashion that the spring assembly may be moved in any direction through a plane parallel to the planes of the springs.

3,446,066
GASOLINE MILEAGE GAGE
Gosta Israelson, 17 El Monte Lane, Sausalito, Calif. 94965
Filed Mar. 28, 1967, Ser. No. 626,486
Int. Cl. G01l *3/26*
U.S. Cl. 73—114 **3 Claims**

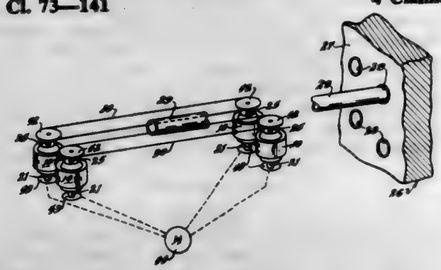
My invention relates to an apparatus which instantaneously indicates the rate of consumption of gasoline in

miles per gallon of a motor vehicle while the latter is in normal operation. More specifically it relates to a gasoline



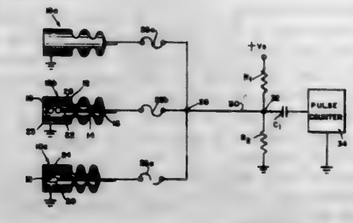
mileage gage which will simply and accurately indicate the mileage being obtained by a given vehicle on a conveniently read scale.

3,446,067
FORCE READOUT SYSTEM
Charles E. Frantz and Frank F. Vlacil, Richland, Wash., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Feb. 13, 1967, Ser. No. 616,435
Int. Cl. G01l 5/12
U.S. Cl. 73—141 4 Claims



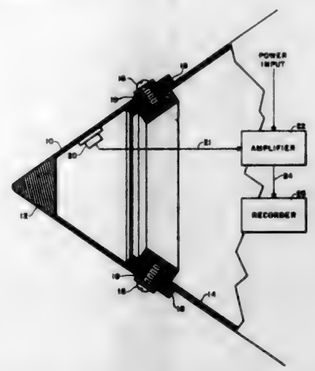
A force-readout system employing the rotative reaction on a normally non-rotative member in a drive mechanism for indicating the force transmitted by the drive mechanism. Repair or replacement is performed at a reactor tube by force-applying loops driven by planetary transmissions; normally nonrotative members of which are made capable of slight angular movement which indicates the force transmitted by the force-applying loops at the reactor tube.

3,446,068
MICROMETEOROID DETECTOR
Jack C. Slattery, Panorama City, and Bernard Hamermesh, Los Angeles, Calif., assignors to TRW Inc., Redondo Beach, Calif., a corporation of Ohio
Filed Dec. 4, 1967, Ser. No. 687,897
Int. Cl. G01w 1/00
U.S. Cl. 73—170 8 Claims



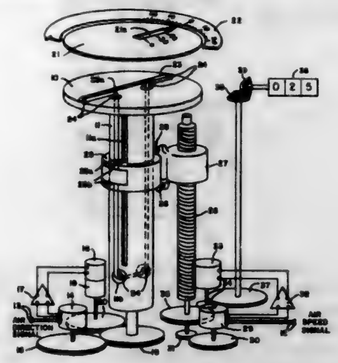
This invention is directed to the type of micrometeoroid detector which utilizes a plurality of pressurized containers having a skin that can be punctured by meteoroids. Each of the containers is provided with a pressure switch means for completing an electrical circuit when the pressure in the respective container drops due to the puncture of the container skin by a meteoroid. Fused leads electrically connect each of the pressure switch means to a common electrical terminal. The pressure switch means, when activated, completes the electrical circuit to ground for the container that is punctured. A single lead electrically connects the common electrical terminal to a counter which registers a count each time a pressure switch means completes the electrical circuit. A power source is connected to the common electrical terminal and ground to provide a current of such a magnitude as to cause the fused line connected to a punctured container to electrically open, thereby opening the electrical circuit to ground and enabling the counter to count subsequent punctures of the remaining containers.

3,446,069
RAIN GAUGE FOR AIRBORNE VEHICLE
Robert D. Zink, Corona, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed July 31, 1967, Ser. No. 657,741
Int. Cl. G01w 1/14
U.S. Cl. 73—171 3 Claims



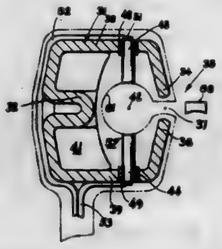
A nose-cone rain gauge for airborne vehicles such as aircraft and the like having an accelerometer-detector mounted therein for detecting momentum transferred from impinging raindrops, determining the exact time of entering and leaving a rain area, indicating changes in rain rate, and recording such information.

3,446,070
INDICATOR FOR SIMULTANEOUSLY INDICATING TWO INDEPENDENTLY VARIABLE QUANTITIES
Walter A. Hickox, Glen Cove, N.Y., assignor to Aeroflex Laboratories Incorporated, a corporation of Delaware
Filed Oct. 23, 1967, Ser. No. 677,199
Int. Cl. G01w 1/02
U.S. Cl. 73—189 8 Claims



An indicator for simultaneously indicating two independently variable electrical signals comprises a rotatable disc supported on a shaft, an electrical servosystem responsive jointly to one of the electrical signals and to the position of the disc member for rotating the disc member to null the servosystem, whereby the position of the disc represents the magnitude of one of the electrical signals. The indicator also includes a translatory endless belt supported on the disc member and including a portion traversing substantially across the face thereof. A collar is supported on the shaft and splined for movement axially thereof and is connected to one pass of the endless belt. A second electrical servosystem, responsive jointly to the other electrical signal and to the position of the endless belt, translates the belt independently of rotation thereof to null its servosystem, the translatory position of the belt thereby indicating the magnitude of such other electrical signal. Portions of the endless belt are of contrasting visual characteristics, for example red or black and white, and the dividing line therebetween is representative of the translatory position of the belt and, thus, of the magnitude of the other electrical signal.

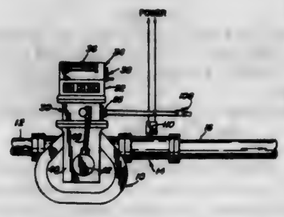
3,446,071
SPLIT-POLE ELECTROMAGNETIC FLOW TRANSDUCER
Alexander Kolin, Bel Air, and James P. Vanyo, Los Angeles, Calif., assignors to Regents of the University of California, Berkeley, Calif.
Filed Nov. 25, 1966, Ser. No. 597,096
Int. Cl. G01f 1/00
U.S. Cl. 73—194 7 Claims



An electromagnetic flow transducer is provided which includes a split magnetic pole through which a blood vessel may be introduced into the lumen of the transducer, the transducer being constructed to have low bulk, high sensitivity and to be easily and uniformly fabricated.

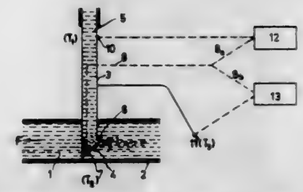
The invention described herein was made with the aid of the United States Public Health Service Funds.

3,446,072
MONITORING APPARATUS FOR A METER REGISTER
Howard Siebold, Libertyville, and Gilbert R. Douglas, Waukegan, Ill., assignors to Liquid Controls Corporation, Chicago, Ill., a corporation of Illinois
Filed Apr. 6, 1967, Ser. No. 629,030
Int. Cl. G01f 1/02
U.S. Cl. 73—198 8 Claims



Monitoring apparatus includes a solenoid operated line valve which is automatically closed when the speed of the meter output shaft is proportionally greater than the speed of a register input shaft driven by the meter.

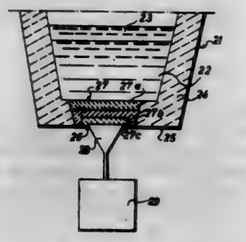
3,446,073
METHOD OF AND DEVICE FOR THERMALLY MEASURING BLOOD FLOW
Michel Auphan, Neuilly-sur-Seine, and Jean Perilhou, Bourg-la-Reine, France, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed July 11, 1966, Ser. No. 568,999
Claims priority, application France, July 28, 1965, 26,311, Patent 1,452,215
Int. Cl. G01f 1/00
U.S. Cl. 73—204 10 Claims



A method of and a device for measuring the rate of flow D of a liquid in a channel. An auxiliary liquid of a temperature T_1 different than the temperature T_2 of the channel liquid is injected into the channel and mixes therewith. The rate of flow d of the auxiliary is determined. The temperature T_3 of the mixed liquid is determined. The rate of flow D of the channel liquid is determined from the formula:

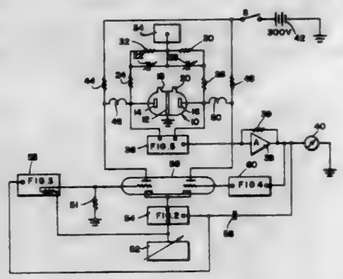
$$D = d\frac{T_3 - T_1}{T_3 - T_2}$$

3,446,074
MEASURING THE TEMPERATURE OF MOLTEN METAL BY RADIOMETRY
Frank Thomas, Metz, France, assignor to Institut de Recherches de la Siderurgie Francaise, Saint Germain-en-Laye, Yvelines, France
Filed Oct. 12, 1967, Ser. No. 674,917
Claims priority, application France, Oct. 19, 1966, 80,611; Aug. 11, 1967, 117,621
Int. Cl. G01k 11/00; H04b 7/00
U.S. Cl. 73—355 7 Claims



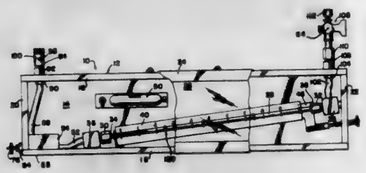
The temperature of molten metal contained in a refractory receptacle is determined by placing an antenna adjacent the refractory wall of the receptacle to collect the Hertzian radiation emitted by the molten metal through the wall.

3,446,075
APPARATUS FOR ABSOLUTE PRESSURE MEASUREMENT
Richard Hecht, Waltham, Mass., assignor to National Research Corporation, Newton Highlands, Mass., a corporation of Massachusetts
Filed Feb. 1, 1967, Ser. No. 613,235
Int. Cl. G01l 9/00
U.S. Cl. 73—398 14 Claims



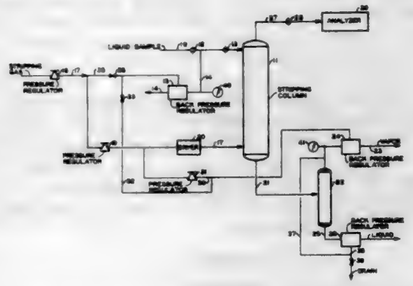
An absolute pressure sensor (e.g., the diaphragm of a capacitance manometer) is subjected to a superimposed potential to effectively reduce the mechanical stiffness of the sensor. This substantially increases the sensitivity of the sensor and is particularly useful in vacuum gauges. An oscillating component of the superimposed potential induces vibrations of the sensor. The phase of these vibrations with respect to that of the oscillating component is monitored, and serves to initiate an automatic adjustment of the static component of the superimposed potential, so as to bring the sensor into resonance at the frequency of the oscillating component. This serves to establish a selected sensitivity for the sensor, since a definite relationship exists between resonant frequency and sensitivity.

3,446,076
MANOMETRIC GAUGES
Peter Douglas Dieterich, Michigan City, Ind., assignor to Dieterich Standard Corporation, Michigan City, Ind., a corporation of Indiana
Filed Apr. 3, 1967, Ser. No. 628,113
Int. Cl. G01l 7/18
U.S. Cl. 73—401 6 Claims



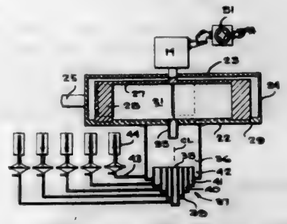
Improvements in manometric gauges are provided, namely a universal fluid reservoir and simplified indicating means; the universal fluid reservoir being formed as a hollow rectangular body of polyamide plastic (nylon) having communicating conduits extending outward therefrom on a pair of opposed short sides and one of the opposed long sides of the body; the distances from the centers of each of the conduits to the closest adjacent corner of the body being identical: the simplified indicating means comprising at least one resilient C-snap ring of plastic material engaged directly upon the indicating tube of the gauge and movable therealong at will to mark limits to facilitate visual monitoring of the gauge.

3,446,077
SAMPLING SYSTEM
Richard A. Sanford and Maurice L. Miller, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Aug. 15, 1966, Ser. No. 572,283
Int. Cl. G01n 1/22
U.S. Cl. 73—421.5 6 Claims



A sampling system to provide vapor samples from liquid streams. The liquid sample is introduced into the top portion of a stripping column and inert gas is introduced into the base of the column. Vapor rich sample gas is extracted from the top of the column for subsequent analysis and stripped liquid is extracted from the base. A separator is connected to the liquid discharge line to remove any entrained gas therefrom. Pressure controls are provided to maintain proper flow conditions.

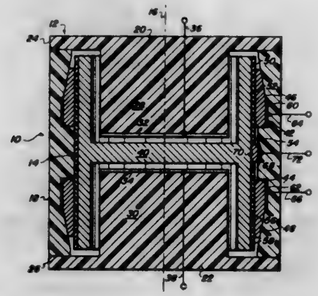
3,446,078
FLUID AMPLIFIER
Romald E. Bowles, 12712 Meadowood Drive, Silver Spring, Md. 20904, and Billy M. Horton, 9712 Kensington Parkway, Kensington, Md. 20840
Application Feb. 23, 1965, Ser. No. 439,500, which is a continuation of application Ser. No. 49,061, Aug. 11, 1960. Divided and this application Apr. 19, 1966, Ser. No. 543,721
Int. Cl. F15c 1/08
U.S. Cl. 137—81.5 29 Claims



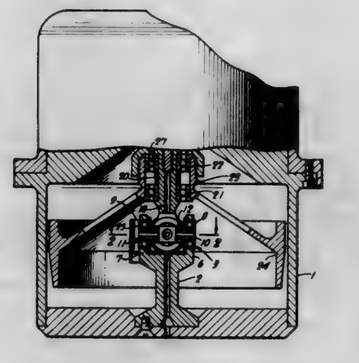
A vortex amplifier having a vortex chamber issuing fluid to a sensing device which senses lateral spread of the fluid, the spread being a function of vorticity of the fluid in issuing from the chamber.

3,446,079
LINEAR ELECTROSTATIC ACCELEROMETER
Robert M. Hohenstein, Glen Ridge, N.J., assignor to Singer General Precision Inc., a corporation of Delaware
Filed July 17, 1967, Ser. No. 653,939
Int. Cl. G01p 15/08
U.S. Cl. 73—517 12 Claims

An accelerometer comprises a proof mass within an enclosure and movable along an acceleration axis in relation to the enclosure. The proof mass in conductive and is maintained in transverse position relative to the enclosure by rings of liquid such as mercury interposed between the proof mass and the enclosure. The mercury serves to provide a low friction support for the proof mass. Rings of dielectric material of different dielectric constants cover the surface of the proof mass and thus, the conductive mercury and proof mass being separated by the dielectric material form force balancing capacitors along the axial extent of the mercury rings, dielectric material of different constants cover the proof mass. A portion of the proof mass in movement along its acceleration axis is differentially spaced from two conductive plates on the housing serving to provide a pair of pickoff capacitors connectable as legs in a bridge circuit effective to provide a pickoff potential proportional to mass displacement. For restoring the proof mass to a null position, the force balancing capacitors established by the proof mass and mercury rings separated by dielectric materials are responsive to potentials derived from the capacitive pickoff to produce forces on the proof mass in a direction opposite to its displacement due to acceleration.

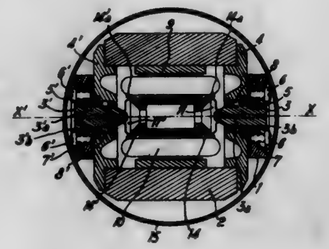


3,446,080
METHOD AND MEANS FOR REDUCING GYRO GIMBAL BEARING FRICTION
Clyde R. Amsler, Alhambra, Edgar R. Brastow, Woodland Hills, and Ronald F. Little, San Dimas, Calif., assignors to Clary Corporation, San Gabriel, Calif., a corporation of California
Filed Oct. 23, 1965, Ser. No. 503,615
Int. Cl. F16h 35/18
U.S. Cl. 74—5 9 Claims



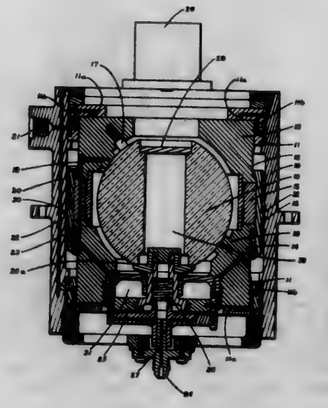
The method of reducing friction in the gimbal system of a gyroscope in which the rotor is carried by the gimbal system through ball bearings, which comprises indenting the surfaces of the rotor bearing raceways to set up vibrations in the gimbal system.

3,446,081
ELASTIC MOUNTED GYROSCOPE MOTOR
René Oger, Paris, France, assignor to Societe de Fabrication d'Instruments de Mesure (S.F.I.M.), Massy, France, a French company
Filed Mar. 8, 1967, Ser. No. 621,646
Claims priority, application France, Mar. 11, 1966, 53,063
Int. Cl. G01c 19/08
U.S. Cl. 74—5.7 9 Claims



The invention relates to a gyroscope with a rotor integral with a flywheel. A stator is mounted on pivots on the axis of rotation of the flywheel. The stator is mounted on the pivots by expansion joints. Each joint includes a diaphragm with a central frustoconical portion defining a central opening in the diaphragm and a peripheral frustoconical portion joined to the central portion by an intermediate ring. This arrangement enables the expansion of the stator to be absorbed elastically and symmetrically.

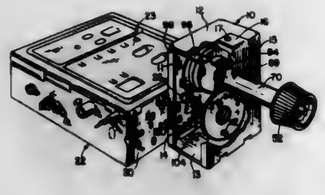
3,446,082
DOUBLE ROTOR PNEUMATIC GYROSCOPE
Gerald B. Speen and Richard C. Turnblade, Northridge, Calif., assignors to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed Mar. 4, 1966, Ser. No. 531,707
Int. Cl. G01c 19/20
U.S. Cl. 74—5.12 6 Claims



A pneumatically operated gyroscope having its rotor supported within a rotor case by gas bearing pads, the rotor

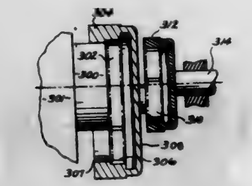
case further being supported within a frame by gas bearings such that when the rotor case is rotated, it will tend to cause the rotor to rotate along with it. Pneumatic power is employed throughout, including the use thereof for rotating the rotor case.

3,446,083
TWO-SPEED TUNER DRIVE SYSTEM
Joe G. Badger, Bloomington, Ind., assignor to Sarkes Tarzian, Inc., Bloomington, Ind., a corporation of Indiana
Filed Feb. 10, 1967, Ser. No. 615,247
Int. Cl. F16h *35/18*
U.S. Cl. 74—10.5 6 Claims



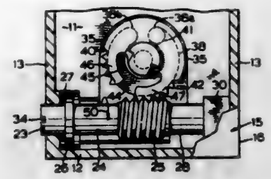
A two-speed drive system for television tuners wherein the tuner shaft may be rotated at slow speed with very low torque. A common coil spring provides both clutch pressure and bias to hold a follower arm against the slow speed cam plate while leaving the dial indicator sleeve free from load. Stops for the tuning shaft are positioned to prevent bending or twisting of the shaft when a large torque is applied thereto and an overriding clutch prevents excessive torque from being applied to the shaft.

3,446,084
SONIC VIBRATION GENERATOR
Albert G. Bodine, Jr., Los Angeles, Calif.
(7877 Woodley Ave., Van Nuys, Calif. 91406)
Continuation of application Ser. No. 477,250, Aug. 4, 1965, which is a continuation-in-part of applications Ser. No. 181,385, Mar. 21, 1962 and Ser. No. 402,474, Oct. 8, 1964. This application July 11, 1966, Ser. No. 573,731
Int. Cl. F16h *37/00*
U.S. Cl. 74—87 2 Claims



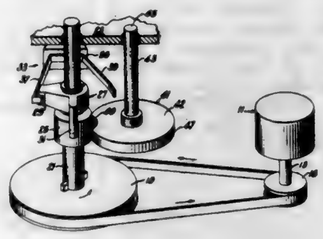
An orbiting-mass oscillator has a rotor which is orbitally driven around a raceway by means of a geared drive mechanism. The oscillator is coupled to a resonant vibration system and operated at a frequency such as to cause resonant elastic vibration of such system. The drive mechanism is designed so that there is sufficient play between the gear teeth thereof under dynamic operating conditions to effectively "unload" such teeth thereby damping the undesirable effects on the oscillator system of high-level torquing feedback signals from the vibration system.

3,446,085
VARIABLE RESISTOR
Leon Ginsberg, Weston, Ontario, Canada, assignor to Precision Electronic Components Ltd., Toronto, Ontario, Canada, a company
Filed Mar. 24, 1967, Ser. No. 626,374
Int. Cl. F16h *27/02*
U.S. Cl. 74—89.14 9 Claims



A miniature rotary variable resistor or potentiometer in which the contact is moved by a spur gear driven by a worm gear from a shaft extending through one wall of the housing. The spur gear is constructed with a pair of spaced, curved, resilient limbs which, once the spur gear has reached a limit of its movement, will resiliently flex in a radial direction to accommodate continued rotation of the worm gear without damage to the movable components.

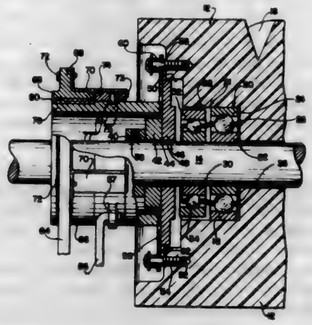
3,446,086
INTERMITTENT DRIVE MECHANISM
John Robert Feltz, Warren, and Clayton L. Stoidt, North Warren, Pa., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed June 5, 1967, Ser. No. 643,465
Int. Cl. F16h *27/06*
U.S. Cl. 74—112 10 Claims



A drive mechanism to impart intermittent motion to a driven member from a rotating drive shaft. The driven member having a driving surface is disposed adjacent the drive shaft such that the driving surface normally contacts the drive shaft.

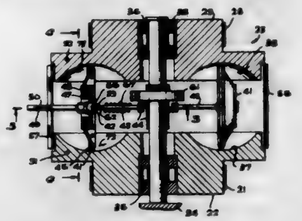
The driving surface includes one or more detents formed to prevent contact between the driving surface and the drive shaft when a detent is adjacent to the drive shaft. A drive tip is mounted loosely and concentrically on the rotating drive shaft and is held stationary by an escapement device. When the escapement device releases the drive tip, the drive shaft turns the drive tip into the detent of the driven member and by means of a wedging action imparts motion to the driven member to bring the driving surface of the driven member into contact with the rotating shaft.

3,446,087
DRIVE MECHANISM
Charles W. Brouwer, East Greenwich, and Raymond V. Tata, Warwick, R.I., assignors to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
Filed July 28, 1967, Ser. No. 656,893
Int. Cl. F16h *15/00*
U.S. Cl. 74—190 19 Claims



A winding machine having a drive mechanism supporting a drive roll on a drive shaft. The mechanism is selectively operable to drive the drive roll in forward and reverse directions and to brake the drive roll.

3,446,088
VARIABLE RATIO DRIVE
Frederic F. Grant, Bellflower, Calif., assignor, by mesne assignments, to Astro-Science Corporation, South El Monte, Calif., a corporation of Texas
Filed July 10, 1967, Ser. No. 652,283
Int. Cl. F16h *15/12, 15/50*; G11b *15/44*
U.S. Cl. 74—190.5 5 Claims



A friction wheel or wheels couple a driving pulley or disk to a driven disk. The coupling wheel is movable so as to contact the disks at a variable distance from their shafts, thereby permitting a variation in coupling ratio between the two disks. The coupling wheel is steered across the surface of the two disks so as to maintain substantially constant transmission of torque from the driving disk to the driven disk even though the speed of the driving disk may change. The device is particularly applicable to the maintaining of constant tension in the reeling of a flexible member, such as magnetic tape, from a feed reel to a takeup reel.

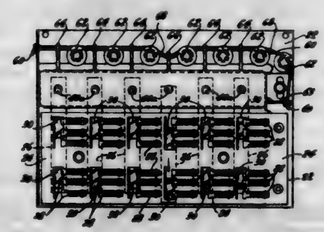
3,446,089
COMPOSITE RING GEAR DRIVING MEMBER
Thomas R. Stockton, Ann Arbor, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Nov. 24, 1967, Ser. No. 685,564
Int. Cl. F16h *55/12*
U.S. Cl. 74—448 7 Claims

A disc-type rotary heat exchanger is dirven frictionally by a composite ring gear comprising a number of circumferentially overlapping gear tooth-like segments that each frictionally engage the heat exchanger periphery and are interconnected by oppositely directed end springable flanges, the segments being preloaded against the matrix



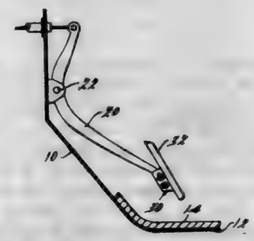
during assembly of the ring gear around the matrix to provide sufficient frictional force to cause a unitary movement of the ring gear and matrix.

3,446,090
TAB INTERLOCK
Gordon L. Alexander, Sylmar, Calif., assignor to Warwick Electronics Inc., Chicago, Ill., a corporation of Delaware
Filed Mar. 14, 1967, Ser. No. 622,945
Int. Cl. G05g *11/00*
U.S. Cl. 74—483 5 Claims



A simple interlock mechanism and apparatus is disclosed herein, in which a plurality of actuable members are controlled so that upon actuation of any one of the actuable members from an unactuated to an actuated position, a previously actuated one of the actuable members is automatically caused to return to its unactuated position. The interlock apparatus is described herein in conjunction with an electric organ multielement tab switch. However, the interlock apparatus of the invention is not limited to such a switch, nor is it limited to electric switches in general, as will become apparent from the ensuing description.

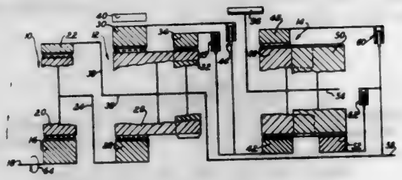
3,446,091
SUSPENDED ACCELERATOR PEDAL ASSEMBLY
Raymond Stocker, Oak Park, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Aug. 22, 1967, Ser. No. 662,365
Int. Cl. G05g *1/04*
U.S. Cl. 74—513 5 Claims



A suspended accelerator pedal system geometry in which the pedal is interconnected to the engine throttle linkage by a bracket having two spaced lost motion slots

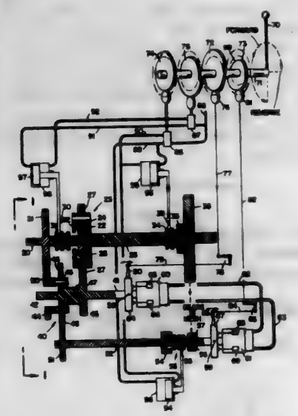
receiving pins mounted on the linkage, one pin serving as the pivot for the pedal, the other camming the pedal to slide up or down relative to the operator's foot as the pedal is depressed to provide the desired force to maintain comfortable and positive operation.

3,446,092
TRUCK TRANSMISSION
Richard D. Moan, Dearborn Heights, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Aug. 8, 1966, Ser. No. 570,926
Int. Cl. F16h *37/06*
U.S. Cl. 74—682 **24 Claims**



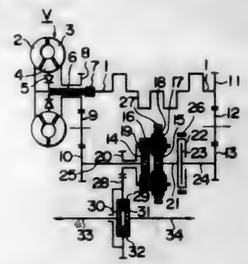
A motor vehicle transmission having three planetary gearsets each of which is conditioned for a reduction drive whenever a drive is transmitted therethrough so that the three forward and reverse drives all provide compound reduction drive ratios to permit the installation of this transmission behind a gas turbine engine without the inclusion of an additional reduction drive gearset.

3,446,093
SPLIT-TORQUE HYDROMECHANICAL TRANSMISSION
Elias Orshansky, Jr., San Francisco, Calif., assignor to URS Corporation, San Mateo, Calif., a corporation of California
Filed May 19, 1967, Ser. No. 639,771
Int. Cl. F16h *47/04*
U.S. Cl. 74—687 **28 Claims**



This split-torque transmission uses two planetary gear sets and a set of clutches to transfer power from an input shaft to an output shaft. In the first planetary gear set, the sun gear (or other input member) is rotated by the input shaft, and the planet gear carrier (or other output member) rotates with the output shaft. A first clutch controls engagement of the input shaft and the planet gear carrier of this first set, to provide, during such engagement, direct drive of the output shaft by the input shaft. A first auxiliary shaft carries the second planetary gear set, whose sun gear (or other input member) rotates therewith and is in engagement with the ring gear (or other reaction member) of the first set. A first hydraulic motor-pump unit is controlled by a first swash plate and rotates with the first auxiliary shaft, and the unit has means for controlling the first swash plate to place the first hydraulic unit into operation selectively as a motor, as a pump, and as neither. A second auxiliary shaft has a gear thereon in engagement with the ring gear (or other reaction member) of the second planetary set. A third auxiliary shaft is in line with the second auxiliary shaft and has a pinion gear thereon, and a second clutch enables engagement of the second and third auxiliary shafts. A second hydraulic motor-pump unit is controlled by a second swash plate and rotating with the third auxiliary shaft, and has a means for controlling the second swash plate to place the second hydraulic unit into operation selectively as a motor, as a pump, and as neither. A plurality of conduits connect the two motor pump units together. An additional gear mounted on the input shaft engages another gear mounted on the carrier for the planet gears of the second planetary set. A further gear is freely mounted on the output shaft in engagement with the pinion gear, and a third clutch enables locking this further gear to the output shaft or unlocking it therefrom.

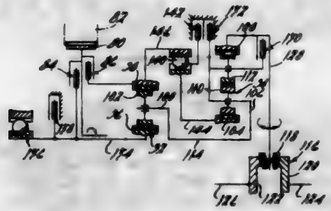
3,446,094
TORQUE SPLIT-TYPE AUTOMATIC SPEED CHANGE DEVICE
Kazuhiko Ohno and Yoichi Mori, Yokohama, Japan, assignors to Nissan Jidosha Kabushiki, Kaisha, Yokohama, Japan
Filed Mar. 7, 1967, Ser. No. 621,346
Claims priority, application Japan, June 20, 1966, 41/39,614
Int. Cl. F16h *47/08*
U.S. Cl. 74—688 **7 Claims**



A torque split-type automatic speed change device comprising a driving shaft, a planetary gear assembly, and two split transmission routes consistsing of a route including a hydraulic transmission means inserted between one end of the driving shaft and the planetary gear assembly and another route extending between the other end of the driving shaft and the planetary gear assembly, whereby powers transmitted through such split routes can be combined together by means of the planetary gear assembly to deliver an output power therefrom.

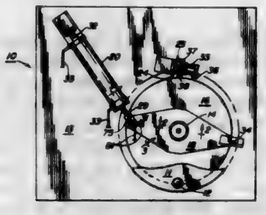
3,446,095
TRANSVERSE AUTOMOTIVE VEHICLE DRIVELINE WITH A FOUR-SPEED RATIO AUTOMATIC TRANSMISSION AND SIMULATED OVERDRIVE
Charles C. Bookout, Livonia, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Dec. 12, 1967, Ser. No. 690,019
Int. Cl. F16h *57/10, 37/08, 47/08*
U.S. Cl. 74—763 **6 Claims**

This specification describes a planetary gear system for an automotive vehicle driveline having torque delivery elements arranged on two spaced parallel axes. The portion that is situated on one axis includes a hydrokinetic torque converter and the portion that is situated on the second axis includes two spaced planetary gear units. The second axis corresponds to the axis of the driven axle of the driveline.



The mechanism is arranged to provide evenly-stepped, forward drive sped ratios and a single reverse speed ratio with a minimum number of friction clutches and brakes.

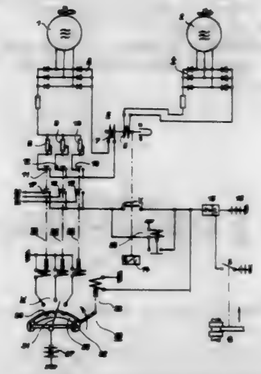
3,446,096
DRIVE MECHANISM FOR A ROTARY WORK SUPPORT
Robert E. Kostur, Oak Brook, Ill., assignor to Comet Industries, Inc., Bensenville, Ill., a corporation of Illinois
Filed Apr. 24, 1967, Ser. No. 633,080
Int. Cl. B23q *17/00*
U.S. Cl. 74—821 **6 Claims**



An apparatus for sequentially rotating a work support through a series of work positions includes a frame, a support shaft for the work support, and a rotatably-mounted clevis arm overlying a drive plate on the work support shaft. In use, one end of the clevis arm is detachably connected to the drive plate so that an adjustably-mounted hydraulic piston cylinder assembly can rotate the clevis arm and drive plate in unison through 90° until an opposite end of the clevis arm engages a pair of adjustably-mounted, hydraulic piston-cylinder assemblies which oppose the force produced by the first-mentioned piston-cylinder assembly for smoothly arresting the motion of the drive plate and the work support at a predetermined position. To repeat the cycle, the clevis arm is disconnected from the drive plate and is rotated back to its starting position.

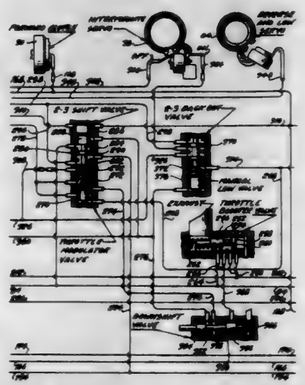
3,446,097
DEVICE FOR THE SYNCHRONIZED SHIFTING OF MOTOR VEHICLE TRANSMISSIONS
Karl Heinz Schmidt, Kreis Hersbruck, Vorra, and Benno Bildat, Erlangen, Germany, assignors to Karl Heinz Schmidt, Kreis Hersbruck, Vorra, Germany
Continuation-in-part of application Ser. No. 497,399, Oct. 18, 1965. This application Apr. 11, 1968, Ser. No. 720,706
Claims priority, application Germany, Apr. 14, 1967, Sch 40,548
Int. Cl. F16h *5/40, 5/74, 9/00*
U.S. Cl. 74—844 **7 Claims**

A gear shifting system for a variable speed gear box transmission having electric generators connected to be driven by the input and output shafts of the gear box to provide electrical quantities responsive to the speeds of these respective shafts. A coupling for momentarily uncoupling the engine drive shaft and the gear box input shaft while the gears are shifted into neutral preparatory to shifting to a preselected gear ratio. Circuit elements having electrical characteristic quantities relatively proportional to the selectable gear ratios of the gear box and connected by a preselector to the input and output shaft



generators and an electrical comparing device such that when the gears to be engaged to provide the desired ratio are in synchronism a gear shifting motor is energized to effect the selected engagement without uncoupling the gear box input and engine shafts. A holding or locking device maintains the gear shifting motor energization once it has been established until the preselected gears are fully engaged.

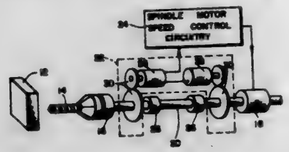
3,446,098
AUTOMATIC POWER TRANSMISSION MECHANISM WITH DUAL RANGE DRIVE CONTROLS
John J. Searles, Northville, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Apr. 3, 1967, Ser. No. 627,922
Int. Cl. F16h *39/50*
U.S. Cl. 74—869 **18 Claims**



A control valve system for an automatic power transmission mechanism comprising pressure operated control servos, a pressure source, circuitry including a line pressure coasting boost valve for maintaining a proper

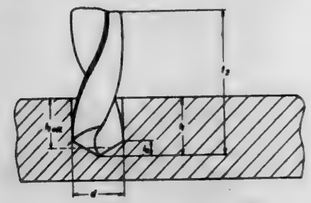
circuit pressure regardless of changes in operating torque, and a downshift regulating valve cooperating with the boost valve for establishing proper automatic downshift points during coasting without influencing adversely the automatic upshift points during normal acceleration.

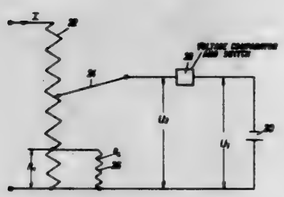
3,446,099
ADAPTIVE CONTROL FOR A MACHINE TOOL
Howard D. Lesher, Canoga Park, Robert Friedman, Reseda, and Joseph O. Foreman, Chatsworth, Calif., assignors to North American Rockwell Corporation, a corporation of Delaware
Filed May 13, 1963, Ser. No. 279,800
Int. Cl. B23d 39/08, 39/10
U.S. Cl. 77—32.4 36 Claims



6. In combination with a cutting tool, the combination comprising:
means, comprising a tool-driving device, for obtaining a true electrical indication of the tool load at every instant; and
means for continuously adjusting the tool load in accordance with said indication from said tool-driving device.

3,446,100
DEVICE FOR AUTOMATIC CORRECTION OF AN UNBALANCE
Hans-Ludwig Munk, Dusseldorf, Germany, assignor to Losenhausenwerk Dusseldorfer Maschinenbau Aktiengesellschaft, Dusseldorf-Grafenberg, Germany
Filed Aug. 11, 1966, Ser. No. 571,940
Claims priority, application Germany, Aug. 12, 1965, L 51,363
Int. Cl. B23b 47/00
U.S. Cl. 77—5 8 Claims





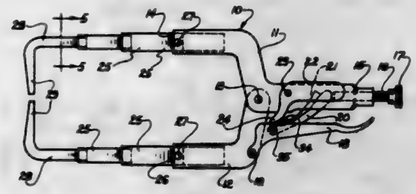
A potentiometer slider is connected to a cutting tool which removes material from an object for the correction of an unbalance in the object. In a portion of the potentiometer, which portion represents the initial penetration of the cutting tip of the tool into the object, the potentiometer is non-linear so that the voltage drop across that part of the potentiometer will change corresponding to the change in the amount of material removed as the cutting tip initially penetrates the object. The remainder of the potentiometer is linear. The non-linearity of the initial portion is achieved by shunting one or more other resistors, fixed or variable, across all or parts of that initial portion of the potentiometer.

3,446,101
INSERT DRIVER
Thomas L. McKay, Los Angeles, Calif., assignor, by mesne assignments, to Whittaker Corporation, Los Angeles, Calif., a corporation of California
Filed June 5, 1967, Ser. No. 643,687
Int. Cl. B25b 13/00, 21/02; B23p 19/04
U.S. Cl. 81—53 5 Claims



The body of a driver for installing an internally and externally threaded tubular insert in a bore has a tubular nose in which an axial stud is mounted, the leading end of the stud extending beyond the nose of the driver body to screw into the tubular insert thereby to permit the driver to serve as a handle for installation of the insert. For quickly and easily loosening the driver from the installed tubular insert to permit the driver to be withdrawn from the insert, the driver body is in cam engagement with the stud to permit loosening of the installed insert from the nose of the driver body by reverse rotation of the driver body relative to the stud.

3,446,102
PLIERS
Clarence E. Hallmark, deceased, late of Fairborn, Ohio, by Francina Hallmark, administratrix, 25 S. Burgess Ave., Apt. C, Columbus, Ohio 43204
Filed Mar. 11, 1966, Ser. No. 535,301
Int. Cl. B25b 7/12
U.S. Cl. 81—369 4 Claims



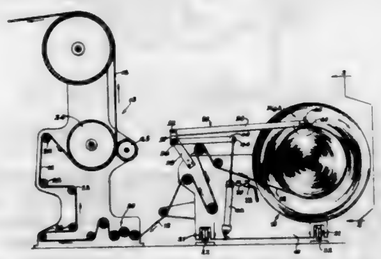
A manually operated gripping tool which is provided with a plurality of hollow tubular extensions mounted on each of a pair of jaws between retracted and extended positions. The jaws are actuated by a toggle mechanism between open and closed positions and are releasably locked in the closed positon. A release lever is provided on a handle portion of one of the jaws to actuate the release of the toggle linkage to permit opening of the jaws. An adjustment screw is included to permit varying the distance between the jaws when in the closed position. The gripping portion of the jaws which grip the article are adapted to be connected to clamping means of various configuration to facilitate the handling of various articles.

3,446,103
SHEET TRANSFER AND STACKING DEVICE
William Vivian Foster, Menasha, Wis., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Filed May 22, 1967, Ser. No. 640,127
Int. Cl. B26d 7/06; B65h 29/14
U.S. Cl. 83—96 15 Claims



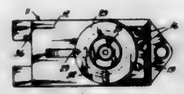
A sheet transfer and stacking device wherein flexible sheet materials are fed from a rotary cutter to a first conveyor having a cantilevered end with provisions for finger-like rods or wands on a second conveyor to sweep through the cantilevered end region of the first conveyor and, thereafter, support and transport the sheet materials. At the end of the second conveyor, the rods or wands rotate the sheet materials through an arc to impart a sufficient velocity to the sheet materials to project or throw them onto a stack of the sheet materials from whence they may be removed as desired.

3,446,104
WEB SLITTING MACHINE
Thomas W. Bushnell, East Aurora, N.Y., assignor to J. W. Clement Company, Depew, N.Y.
Filed Mar. 6, 1967, Ser. No. 621,058
Int. Cl. B26d 5/08, 5/38; B65h 35/02
U.S. Cl. 83—102 6 Claims



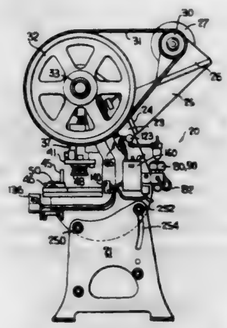
The invention provides an improved mechanism for slitting a paper web which is spirally wound in mill roll form while withdrawing from the roll one portion of the severed web. The mechanism comprises a bracket swingable toward and away from the mill roll axis and pivotally mounting thereon a knife support arm to extend in swingable relation thereto and carrying a knife blade disposed to engage the mill roll web to sever it longitudinally. The parts are so arranged that the knife cutting edge moves in the plane of the severed face of the unwound portion of the roll. The bracket member is controlled to move relative to the mill roll web by a device providing both knife-cutting pressure regulation and bracket oscillation damping. The knife support arm includes roller means riding on the unwinding portion of the web and is positionally adjustable thereon for regulation of the depth of cut; and a spring device is operably associated with the blade support arm and the bracket to damp and cushion relative movements thereof.

3,446,105
NOTCHING UNIT
John H. Herzog, Clarence, N.Y., assignor to Houdaille Industries, Inc., Buffalo, N.Y., a corporation of Michigan
Filed Jan. 24, 1967, Ser. No. 611,425
Int. Cl. B26d 7/06, 5/08, 1/12
U.S. Cl. 83—146 14 Claims



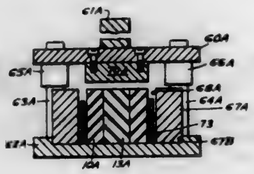
A notching unit has a unitary C-shaped base with a cylindrical punch holder body guided in a cylindrical bore in the upper arm, the guided diameter being greater than the guided length of the holder body, the punch being biased away from the die with heavy duty springs which preclude holder cocking, a lubrication passage including a circular groove encircling the holder body, a U-shaped stripper plate carried under the upper arm as a snap-on element, and the base having a front-to-rear passage enabling front-to-rear feeding of an elongated workpiece.

3,446,106
PUNCH PRESS WITH SLIDING BOLSTER PLATE
Charles L. Ferris, Robert J. Babecki, and Finn N. Braathen, Chicago, and George J. Sirovatka, Berwyn, Ill., assignors to Union Special Machine Company, Chicago, Ill., a corporation of Illinois
Filed Feb. 16, 1967, Ser. No. 616,620
Int. Cl. B26d 5/08, 5/22, 5/28
U.S. Cl. 83—400 17 Claims



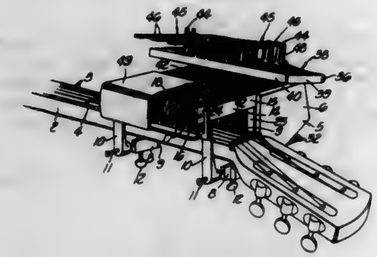
This disclosure relates to a novel punch press, and is particularly directed to a punch press which includes a bolster plate mounted for reciprocal movement between loading and work positions or stations whereby an operator can load a die block carried by the bolster plate with an appropriate workpiece remote from the work position to preclude physical harm and/or dismemberment upon accidental or inadvertent "tripping" of the associated press ram.

3,446,107
METAL FORMING DIE ELEMENTS
Robert Franklin Moyer, Warwick, R.I., assignor to Elastic Die Engineering Co., Warwick, R.I., a corporation of Rhode Island
Filed Sept. 17, 1965, Ser. No. 488,024
Int. Cl. B26d 7/20, 7/06
U.S. Cl. 83—658 12 Claims



Die elements fabricated from pre-stressed organic polymers. A bore is provided in a mass of organic material and thereafter a core larger in area than the bore is forced into the bore.

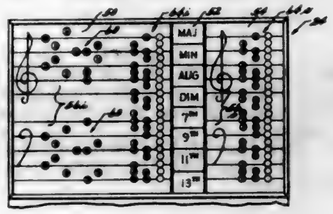
3,446,108
CHORD PLAYING ATTACHMENT FOR STRINGED MUSICAL INSTRUMENTS
Earl F. Mitchell, Jr., 2420 Hyperion Ave., Los Angeles, Calif. 90027
Continuation-in-part of applications Ser. No. 419,616, Dec. 18, 1964, and Ser. No. 483,141, Aug. 27, 1965. This application Oct. 10, 1967, Ser. No. 674,313
Int. Cl. G10d 3/08
U.S. Cl. 84—317 7 Claims



A chord playing attachment intended particularly for guitars wherein a plurality of string engaging fingers are adjustably mounted on a series of arms traversing the strings of the guitar; the arms, in turn being depressed individually or in multiple by a series of pivotally mounted yokes operated by finger levers and an interposed spring so that manual depression of a single lever will cause selected fingers to engage the guitar strings thereby to produce a predetermined chord.

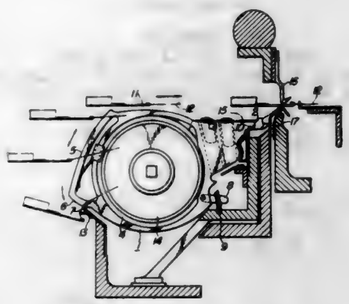
3,446,109
AUDIO-VISUAL MUSIC SIMULATOR APPARATUS
Bruce T. Scott, Union Township, Brown County, Ohio (433 Main St., Ripley, Ohio 45167), and Kenneth E. Scott, Green Township, Hamilton County, Ohio (3136 Balsamridge Drive, Cincinnati, Ohio 45239)
Filed Jan. 9, 1967, Ser. No. 608,039
Int. Cl. G09b 15/08
U.S. Cl. 84—478 6 Claims

An audio-visual music simulating system comprising a panel simulating musical notation in multiple sections thereon and a master control board therewith, simulation of the notation on the sections of the panel being controlled by both instructor and student independently playing their respective piano keys or keys of other musical instruments to which the panel and board are adaptable, the master control board being controlled by the instructor alone.



The simulating panel includes in its sections key signatures, designation of chords, and notes corresponding to keys played on the instruments. In cooperation with an electrical system, musical notation is simulated on the simulating board. Both audible and visual reproductions provide answers to instructor and student(s).

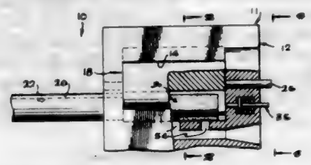
3,446,110
HIGH-SPEED NETTING MACHINE
Mitsuo Ichikawa, Toyohashi-shi, Japan, assignor to Amita Company Limited, Toyohashi-shi, Japan, a corporation of Japan
Filed July 3, 1967, Ser. No. 650,971
Claims priority, application Japan, July 21, 1966, 41/48,012
Int. Cl. D04c 3/48, 5/16
U.S. Cl. 87—53 3 Claims



A shuttle for a high-speed netting machine having the rear side thereof forming a sloped surface to provide for substantially circular movement of a warp drawing hook along the periphery of a bobbin under the control of a roller on a hook-carrying arm in engagement with a grooved guide rail on a cam, and supported on a machine frame at three points with stability.

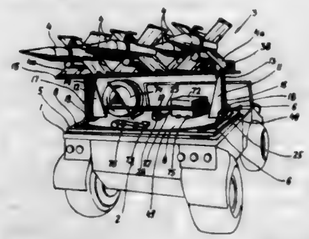
3,446,111
RECOILLESS OPEN CHAMBER GUN
David Dardick, Palos Verdes Peninsula, Calif., assignor to TRW Inc., Redondo Beach, Calif., a corporation of Ohio
Filed Sept. 1, 1967, Ser. No. 664,979
Int. Cl. F41f 3/02, 15/00
U.S. Cl. 89—1.7 7 Claims

A recoilless open chamber gun having rearwardly opening venturi means through which a portion of the high pressure propellant gas generated during firing exits at high velocity to produce on the gun a counter-recoil force



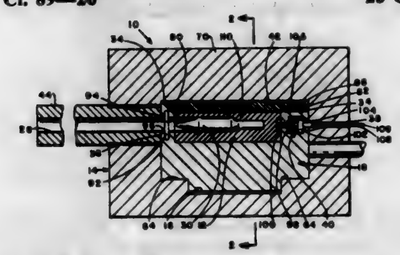
equal and opposite to the recoil force exerted on the gun during firing.

3,446,112
VEHICLE MOUNTED PROJECTOR FOR JET-PROPELLED GUIDED MISSILES WITH ADJUSTABLE ANGLE OF ELEVATION
Erich Planitzer, Neubiberg, Eicke Maus, Ottobrunn, Albert Multerer, Grabenstett (Chiemsee), Erwin Schober, Neubiberg, and Werner Schindler, Ottobrunn, Germany, assignors to Bolkow Gesellschaft mit beschrankter Haftung, Ottobrunn, Germany
Filed Aug. 2, 1967, Ser. No. 657,847
Claims priority, application Germany, Aug. 5, 1966, B 88,352
Int. Cl. F41f 3/04
U.S. Cl. 89—1.815 4 Claims



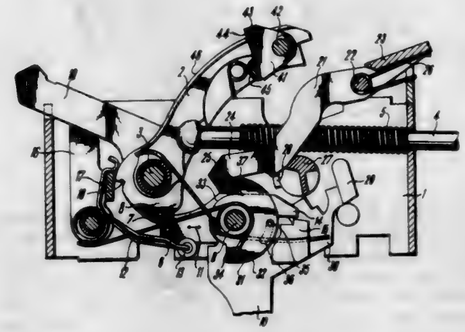
A projector or launcher for jet-propelled guided missiles is adapted for readily interchangeable mounting upon various types of vehicles and is self-contained with respect to all of the devices necessary for launching, tracking and guiding the individual missiles. The projector is provided with a traversing mechanism and also with means for adjusting the angle of elevation of the missiles. Novel releasable quick-action means are provided for anchoring the missiles during transport and for releasing the missiles individually for launching.

3,446,113
SEALED OPEN CHAMBER BREECH MECHANISM
David Dardick, Palos Verdes Peninsula, Calif., assignor to TRW Inc., Redondo Beach, Calif., a corporation of Ohio
Filed Sept. 1, 1967, Ser. No. 671,910
Int. Cl. F41f 11/04
U.S. Cl. 89—26 25 Claims



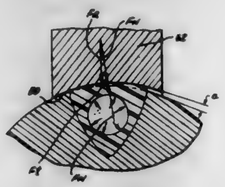
An open chamber breech mechanism for firing caseless ammunition, the breech mechanism having novel obturator means actuated by the pressure of the propellant gas generated during firing for sealing the leakage interfaces between the breech frame and the open chamber carrier or cylinder against propellant gas leakage from the pressurized cylinder firing chamber.

3,446,114
TRIGGER MECHANISM FOR AUTOMATIC FIREARMS
Wilhelm Ketterer, Oberndorf-Lindenhof, Germany, assignor to Heckler & Koch GmbH
Filed Dec. 18, 1967, Ser. No. 691,288
Claims priority, application Germany, Dec. 20, 1966, H 61,342
Int. Cl. F41c 5/00
U.S. Cl. 89—140 8 Claims



A trigger mechanism for automatic firearms employing a hammer firing device, having a means for converting both from semi-automatic to full-automatic firing and, simultaneously, from closed bolt to open bolt operation, including a catch lever which, when the firearm is in an automatic firing mode, projects into the passive movement of the breech block, catching and holding the breech block in its rearward position, and further including a driving member for displacing the catch lever from its normal position.

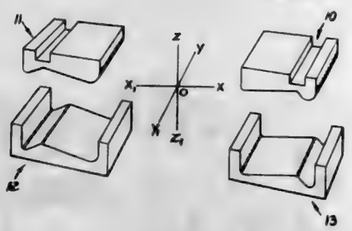
3,446,115
OPEN CHAMBER BREECH MECHANISM WITH SCARFED FIRING STRAP
Frank Fedowitz, Jr., Cypress, Calif., assignor to TRW Inc., Redondo Beach, Calif., a corporation of Ohio
Filed Oct. 6, 1967, Ser. No. 673,456
Int. Cl. F41d 9/06, 9/00
U.S. Cl. 89—155 4 Claims



An open chamber breech mechanism wherein the inner curved wall of the breech frame firing strap recedes at a slight angle from the circumference of the breech cylinder in the direction of cylinder rotation in such a way that when a cased open chamber ammunition round is fired in the breech mechanism, expansion of the cartridge case of the round against the strap wall to seal the breech in-

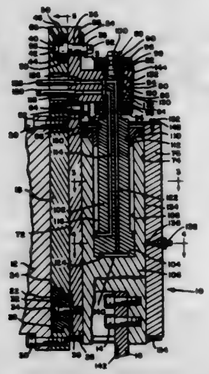
terfaces against propellant gas leakage produces a driving torque on the cylinder in the direction of its rotation for counteracting the frictional drag torque created by pressurized contact of the case with the wall.

3,446,116
MODEL TO DIE REVERSAL MEANS AND METHOD
Christopher G. Kelsey, Glenalta, South Australia, Australia, assignor to Data Resolved Tools Pty. Ltd., Plympton, South Australia, Australia
Filed Oct. 31, 1966, Ser. No. 590,632
Int. Cl. B23c *1/16, 1/18*
U.S. Cl. 90—13.5 **8 Claims**



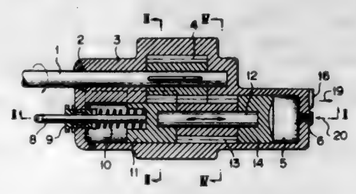
A model to die reversal machine capable of cutting right and left hand dies from either a right or left hand model, the machine having a machine tool with a cutting head and work table relatively movable in *x*, *y* and *z* directions independently, a tracer having a tracing head and model table relatively movable in *x*, *y* and *z* directions independently, coupling means coupling relative respective movements of the cutting head and work table of the machine tool and a tracing head and model table of the tracer, and direction reversing means in at least one of the coupling means.

3,446,117
RETRACTABLE TOOL SUPPORT
Edward P. Bullard III, Fairfield, Conn., assignor to The Bullard Company, Bridgeport, Conn., a corporation of Connecticut
Filed June 26, 1967, Ser. No. 648,884
Int. Cl. B23d *13/06, 7/08*
U.S. Cl. 90—55 **5 Claims**



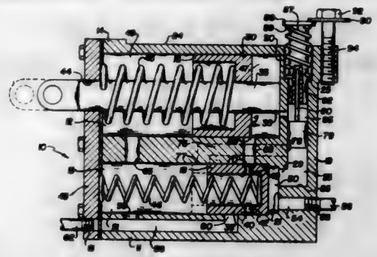
A hydraulically or pneumatically operated metal-cutting tool support reciprocably movable between a retracted and an operative position and having an outer surface of rectangular cross section which slides within a closely fitting mating passage in a block adapted to be mounted on a machine tool platen or slide. A cylindrical bore in the tool support is operatively associated with a piston stationarily attached to the block forming a piston-cylinder arrangement by means of which the tool support is reciprocated. The mating rectangular surfaces of the tool support and block prevent transverse or twisting movement of the tool support relative to the block, thereby providing precise, rigid positioning of the tool support during metal cutting operations.

3,446,118
VARIABLE TORQUE HYDRAULIC GEAR MOTOR
Tozaburo Kuhara, 1—53 Shiba-shiroganedai-machi, Minato-ku, Tokyo, Japan
Filed Oct. 28, 1966, Ser. No. 590,358
Int. Cl. F01c *31/12, 21/16, 1/12*
U.S. Cl. 91—59 **5 Claims**



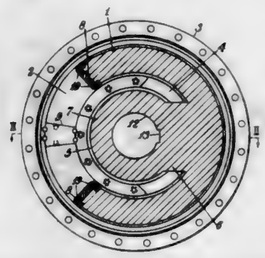
A variable torque hydraulic gear motor in which a pair of gears are in engagement in adjustable fashion are rotatably mounted in a casing, one gear being rigidly mounted on an output shaft, the other gear being mounted as a part of a piston assembly on a second shaft between a shaped piston and a hydraulic piston. The piston assembly is retained in a regulating cylinder for axial movement, said casing having an inlet and an outlet respectively for introducing an exhausting fluid under pressure to and from the engaging portions of said gears, and a second inlet for introducing fluid under pressure from the same source in one end of the regulating cylinder to urge the hydraulic piston and consequently the piston assembly against the action of spring means acting thereon.

3,446,119
FLUID PRESSURE RESPONSIVE CONTROL APPARATUS
Leslie H. Southwell, 551 St. Andrews Road, West Vancouver, British Columbia, Canada, and John Bjorknas, 6576 Sussex Ave., South Burnaby, British Columbia, Canada
Filed Mar. 6, 1967, Ser. No. 620,772
Int. Cl. F15b *11/04, 13/02*
U.S. Cl. 91—419 **10 Claims**



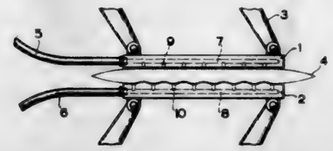
For use in a pressure fluid system, a fluid pressure responsive control apparatus adapted to be actuated or tripped in response to the rate of flow of the fluid to sense and react to an upper limit set on the flow through the apparatus.

3,446,120
OSCILLATING FLUID-DRIVEN ACTUATOR
Franz Sneen, Topasgatan 40, V. Frolunda, Goteborg, Sweden
Filed Nov. 14, 1966, Ser. No. 594,208
Claims priority, application Sweden, Dec. 13, 1965, 16,096/65
Int. Cl. F01c *9/00;* **F16j** *1/00, 9/12*
U.S. Cl. 92—120 **3 Claims**



An oscillating piston fluid-driven actuator having an annular segment-shaped piston slidably mounted in an annular segment-shaped chamber. The piston is integrally formed with an arm and a hub which in turn is operatively connected to a rotary shaft. A fitting plate carries a sealing member at one or both ends of the piston and is connected to the piston to allow the plate radial movement on the pistons, whereby the sealing member is maintained in central bearing engagement with the chamber irrespective of deflections in the piston relative to the chamber.

3,446,121
APPARATUS FOR PULLING OPEN THE ENDS OF TUBE SECTIONS OF PLASTIC MATERIAL SHEETING
Fritz Achelpohl, Lengerich, Westphalia, Germany, assignor to Windmoller & Holscher, Lengerich, Germany
Filed May 15, 1967, Ser. No. 638,278
Claims priority, application Germany, May 18, 1966, W 41,614; Apr. 24, 1967, W 43,835; Apr. 25, 1967, W 43,839
Int. Cl. B31b *1/76;* **B65b** *43/36*
U.S. Cl. 93—28 **13 Claims**



Two vacuum tools, preferably vacuum beams, revolve in opposite senses and have vacuum openings. The lower vacuum tool has waves, which extend at right angles to the open edge of the tube section. The vacuum openings of this vacuum tool are arranged in the wave troughs. The vacuum openings of the upper vacuum tool are in registry with the wave crests of the lower vacuum tool.

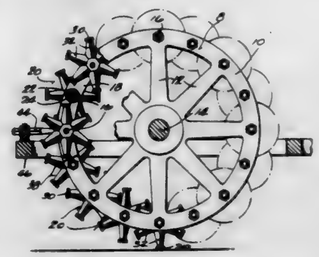
3,446,122
ELASTIC SURFACES FOR SPORTSGROUNDS, PLAYGROUNDS AND FOOTPATHS
Ludwig Raichle, Bernhard Werminghausen, and Leo Unterstenhoefer, Limburgerhof, Pfalz, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
Filed Oct. 3, 1966, Ser. No. 583,596
Claims priority, application Germany, Oct. 5, 1965, B 83,999
Int. Cl. E01c *7/00*
U.S. Cl. 94—7 **11 Claims**

A surface for recreational activities having a water-permeable structure with a top cover layer, a bottom filter layer and an intermediate water-permeable elastic or highly resilient layer formed from particles of a



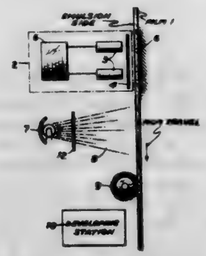
closed-cell expanded plastic, e.g. homopolymers and copolymers of styrene or ethylene.

3,446,123
EARTH COMPACTING DEVICE
William C. Lathers, Madison, Wis., assignor to Baldwin-Lima-Hamilton Corporation, Chicago, Ill., a corporation of Delaware
Filed Feb. 21, 1967, Ser. No. 617,524
Int. Cl. E01c *19/30, 19/23;* **A01b** *21/02*
U.S. Cl. 94—50 **7 Claims**



Sheep's-foot rotors are rotatably mounted in annular series on a skeletonized cylinder which is supported for rotation on its own axis. Each sheep's-foot rotor comprises a hub from which sheep's-foot legs radiate, the legs having faces converging to edges facing each other to squeeze out axially dirt which might otherwise be trapped between the legs. A stationary comb has teeth projecting at both sides of each annular series of rotors to engage and discharge such dirt. Rotatable sleeves coaxial with the rotors of one series are immediately proximate the paths of movement of the sheep's-foot ends of the legs of the staggered rotors of the next series, whereby to dislodge radially projecting earth.

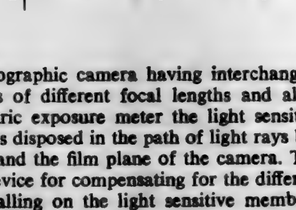
3,446,124
APPARATUS FOR PRODUCING PROJECTION SLIDES
Charles A. Aldridge, Paramus, N.J., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed Mar. 22, 1966, Ser. No. 536,445
Int. Cl. G03b *27/32, 29/00*
U.S. Cl. 95—1 **14 Claims**



Apparatus for producing projection slides wherein a light absorbing material forming a desired symbol is

secured to the emulsion side of a sheet of photosensitive film. The film is then bulk exposed to light, the light absorbing material preventing said light from exposing the emulsion on the portions covered by said symbol. After exposure, apparatus is provided for removing the light absorbing material and then to develop the film, thereby producing a projection slide.

3,446,125
PHOTOGRAPHIC APPARATUS FOR OBTAINING ARTISTIC EFFECTS
Arthur M. Uhlmann, Houston, Tex., assignor to Helen Uhlmann, John Uhlmann, James Uhlmann, and Arthur Uhlmann, all of Houston, Tex.
Filed Jan. 24, 1967, Ser. No. 611,388
Int. Cl. G03b *33/00, 41/00*
U.S. Cl. 95—1 **10 Claims**



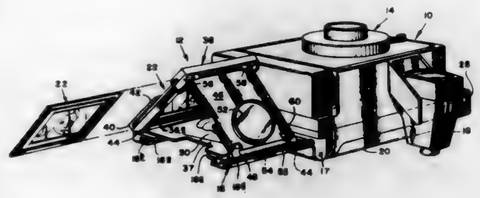
A camera having a lens mounted in an extended lens holder and a tubular shroud fitted in the end of the lens holder. A prism mounted in the shroud in a manner such that at least a semicircular section of the lens is not covered by any portion of the prism. The shroud with the prism is rotatable about the longitudinal axis of the lens holder upon rotation of the prism unusual effects are produced upon the pictures made with the camera.

3,446,126
CAMERA OF THE STILL AND MOTION PICTURE TYPE
Ludwig Leitz and Heinrich Broschke, Wetzlar, Germany, assignors to Ernst Leitz G.m.b.H., Wetzlar, Germany
Filed Apr. 7, 1965, Ser. No. 446,185
Claims priority, application Germany, Apr. 15, 1964, L 47,600
Int. Cl. G01j *1/04;* **G03b** *19/12*
U.S. Cl. 95—10 **17 Claims**



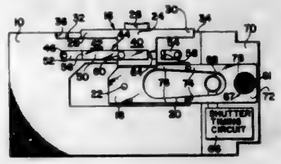
A photographic camera having interchangeable objective lenses of different focal lengths and also having a photoelectric exposure meter the light sensitive member of which is disposed in the path of light rays between said objective and the film plane of the camera. There is provided a device for compensating for the different amounts of light falling on the light sensitive member when the different objective lenses are used as a result of said light sensitive member not being positioned in said film plane. The compensating device is disclosed to be either optical, electrical or mechanical in nature.

3,446,127
PHOTOGRAPHIC APPARATUS
Allyn M. Silverman, Boston, and Charles W. Triggs, Lynn, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Oct. 14, 1966, Ser. No. 586,884
Int. Cl. G03b *29/00*
U.S. Cl. 95—12 **8 Claims**



A collapsible viewing device attached externally to a camera for inspecting transparencies produced by the camera. The compact viewer has a triangular shape, with the transparency held in one leg so that the light passing through the transparency will be reflected from the base surface through the eyepiece in the opposite leg in a positive image.

3,446,128
EXPOSURE CONTROL APPARATUS FOR PHOTOGRAPHIC CAMERA
Milton S. Dietz, Lexington, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Oct. 23, 1965, Ser. No. 503,014
Int. Cl. G01j *1/04*
U.S. Cl. 95—10 **4 Claims**

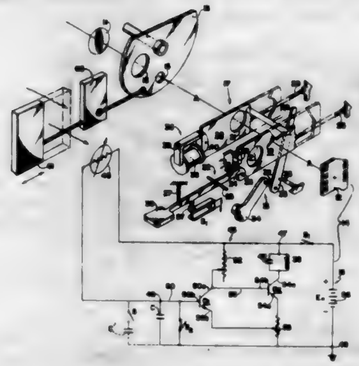


Exposure control apparatus for adapting electronically timed shutters to use with films of a variety of speeds. The apparatus utilizes a unitary, multi-aperture diaphragm which is connected with a photocell mask. By manipulating the diaphragm from one aperture opening to another, the mask is connected to be moved over the photocell of a timing circuit.

3,446,129
EXPOSURE CONTROL APPARATUS FOR PHOTOGRAPHIC CAMERA
John P. Burgarella, Sudbury, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Oct. 23, 1965, Ser. No. 503,667
Int. Cl. G01j *1/04*
U.S. Cl. 95—10 **2 Claims**

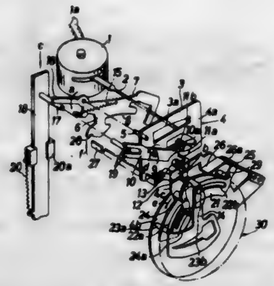
An exposure control system for a camera incorporating an electronically timed shutter. By selectively positioning an optical filter before the photocell of an electrical timing network, the timing system is simply adjusted for proper operation with films of varying speeds.

The filter which is positioned before the photosensing element is mechanically connected for sympathetic move-



ment with the aperture adjustment mechanism of the camera.

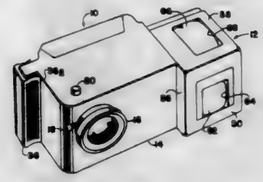
3,446,130
PHOTOGRAPHIC CAMERA
Dieter Engelsmann, Unterhaching, near Munich, and Dieter Maas, Munich, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany
Filed Nov. 24, 1965, Ser. No. 514,166
Claims priority, application Germany, Dec. 4, 1964, A 22,882
Int. Cl. G01j *1/10*
U.S. Cl. 95—10 **9 Claims**



An exposure control wherein the needle 2 of the exposure meter if engaged by the scanning portion 7 of an arresting member 6 in response to depression of a shutter release 18 and under the action of a spring 15 which operates between the arresting member and an adjusting member 12 for the diaphragm 14. The adjusting member is allowed to engage a second portion 8 of the arresting member subsequent to engagement between the needle and the sensing portion.

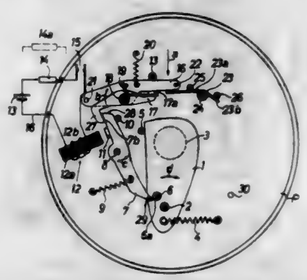
3,446,131
CAMERA APPARATUS
Gerald H. Cook, Lynnfield, and Rogers B. Downey, Lexington, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Mar. 30, 1967, Ser. No. 627,155
Int. Cl. G03b *17/50*
U.S. Cl. 95—13 **10 Claims**

A miniature camera capable of exposing and processing a plurality of pre-mounted photographic film assemblies. The film assemblies are of a type releasably-containing a liquid processing composition which, when exposed and subjected to transport and compressive means of the camera are adapted to provide finished transparencies suitable for either direct viewing or projection. More particularly, camera apparatus in the form of a compact integral structural element which combines view-finder means serving a conventional function relative to a photographic exposure, a processing or imbibition chamber for receiving each compressed film assembly to complete its processing, and means for viewing the processed transparency when



completed to enable an immediate check of its quality. In combining these functions in a single unit, given components serve more than one purpose whereby a compactness of the camera and flexibility of operation are achieved. The external dimensions and shape of the unit are so calculated as to provide a continuity of form with the basic camera housing.

3,446,132
PHOTOGRAPHIC IMPACT SHUTTER
Güenter Fauth, Unterhaching, near Munich, Germany, assignor to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany
Filed Mar. 3, 1966, Ser. No. 531,430
Claims priority, application Germany, Mar. 13, 1965, A 48,626
Int. Cl. G03b *9/10, 9/60*
U.S. Cl. 95—53 **19 Claims**

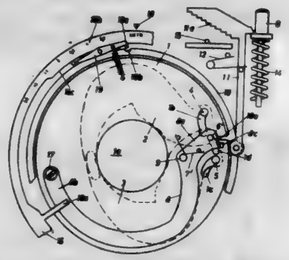


A camera wherein an impeller can be propelled from a position of rest at several speeds to move a shutter blade from closed position for different periods of time. The impeller is propelled from the position of rest by an electromagnet which is in circuit with a resistor whereby the resistance of the resistor determines the speed of the impeller and hence the exposure time.

3,446,133
VARIABLE-APERTURE DIAPHRAGM HAVING TWO DIAPHRAGM BLADES
Franz W. R. Starp, Calmbach, Black Forest, Germany, assignor to Prontor-Werk Alfred Gauthier, G.m.b.H., Calmbach, Black Forest, Germany, a corporation of Germany
Filed July 25, 1966, Ser. No. 567,738
Claims priority, application Germany, July 26, 1965, P 37,318
Int. Cl. G03b *9/06*
U.S. Cl. 95—64 **7 Claims**

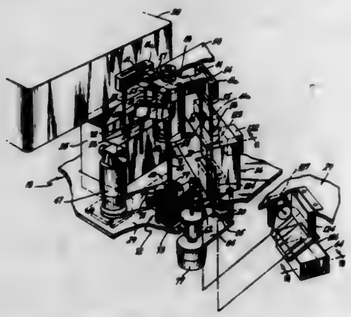
A lens diaphragm arrangement having two diaphragm discs and a first pin linking the discs together. A diaphragm housing is provided having a guide slot with the first pin engaging the slot. A second pin is provided on one of the discs and a third pin is provided on the other of the discs. In addition, a first control slot is provided

on the housing engaging the second pin and a second control slot is provided in the housing engaging the third pin. The guide slots and the first and second control slots



extend approximately in the same direction. First means are provided to apply pressure to the first pin to move this pin along the guide slot in one direction to cause the discs to move apart.

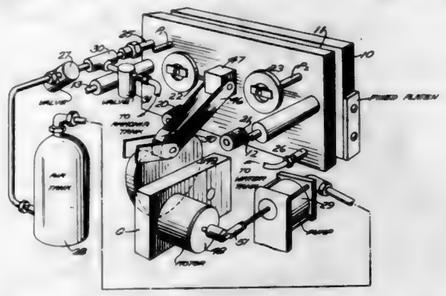
3,446,134
FILM DEVELOPING APPARATUS
Paul M. Brown, Irvine, Nolan D. Hopper, Tustin, Richard S. Kampf, Costa Mesa, and Walter V. Lord, Newport Beach, Calif., assignors to Philco-Ford Corporation, Philadelphia, Pa., a corporation of Delaware
Filed July 21, 1966, Ser. No. 566,941
Int. Cl. G03d 3/10
U.S. Cl. 95—89 11 Claims



Self contained, portable apparatus for automatically developing exposed dental X-ray film. The apparatus comprises four basic sections contained in a like number of separate cases arranged to stack one upon the other. These basic sections comprises an apparatus control, a film packet loader and stripper, a film processor, and a sump. The apparatus is automatically operable to accept a number of exposed film packets, to strip the film from the packets, to chemically process and dry each film sequentially, and to present the developed film at an output station for removal by an operator of the apparatus.

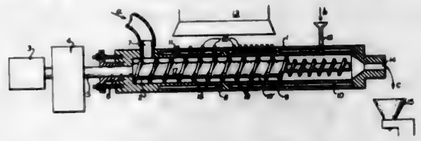
3,446,135
DIAZO FILM DEVELOPER
Isidore Dorman, Whitestone, N.Y., assignor to NB Jackets Corporation, Long Island City, N.Y., a corporation of New York
Filed Dec. 27, 1966, Ser. No. 604,769
Int. Cl. G03d 3/10
U.S. Cl. 95—89 9 Claims

A machine for processing diazo-type film, in which an exposed diazo-print is received within a chamber formed by a pair of vertically-mounted platens, one being movable with respect to the other, such that when the platens are brought together, the chamber is hermetically sealed. A charge of ammonia is fed into the sealed chamber to develop the film therein, pressurized air thereafter being fed into the sealed chamber to intermingle with residual fumes therein, the contaminated air being



conducted from the chamber into a waste tank. The developed film is discharged from the chamber by moving the platens apart.

3,446,136
APPARATUS FOR THE CONTINUOUS TREATMENT OF CONFECTIONERY INGREDIENTS
Francis Recas, Wattignies, Nord, France, assignor to Societe Anonyme Generale Alimentaire (GASA), Neuilly-sur-Seine, France, a corporation of France
Filed Mar. 13, 1964, Ser. No. 351,709
Claims priority, application France, Mar. 18, 1963, 18,187
Int. Cl. A21d 8/00
U.S. Cl. 99—234 2 Claims



1. An apparatus for the continuous processing of a mixture of ingredients in the manufacture of sugar confectionery, comprising

a treatment unit having a coaxial core and an outer tubular wall defining an annular treatment zone,

means for distributing the mixture in a thin layer from about 1 to 2 millimeters in thickness within a section of said annular treatment zone,

means for propelling and agitating said layer and for causing said layer to travel through said zone,

means for heating the 1 to 2 millimeter thickness section of said annular treatment zone and means for cooling another section of said annular treatment zone so that said mixture is carried through a heating zone and then through a cooling zone,

means for eliminating water vapor from said mixture while traversing said heating zone,

means for delivering said mixture for further manipulation after traversing said cooling zone,

said means for heating the 1 to 2 millimeter thickness section, heats said outer tubular wall of said annular treatment zone,

said means for cooling another section, cools said outer tubular wall of said annular treatment zone of said another section,

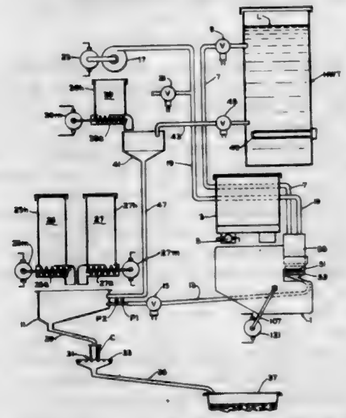
said coaxial core comprising a feed screw disposed within said outer tubular wall,

said feed screw having a relatively large core passing through said heating zone to define a thin annular zone from about 1 to 2 millimeters in thickness through which said mixture is fed and is maintained in contact with said feed screw and said outer tubular wall,

water vapor exit apertures formed in said outer wall, and

means to cause the mixture to travel more slowly through said cooling zone than through said heating zone.

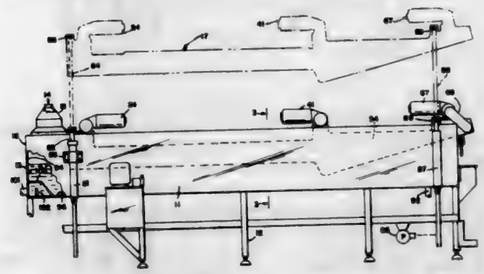
3,446,137
HOT BEVERAGE MERCHANDIZER
Harry H. Pryor, St. Louis, Arthur R. Kessler, Florissant, and Arthur G. Blacklock, Jennings, Mo., Charles G. Neumann, Palatine, Ill., William H. Short, St. Ann, Mo., and Richard N. Modjeski, Evergreen Park, Ill., assignors to UMC Industries, Inc., St. Louis, Mo., a corporation of Delaware
Filed Feb. 13, 1967, Ser. No. 615,413
Int. Cl. A23f 3/00, 1/12
U.S. Cl. 99—289 34 Claims



A hot beverage merchandiser for brewing and vending coffee and other hot beverages in single-cup quantities, which includes a main system for brewing coffee from ground coffee, an auxiliary system for brewing tea or decaffeinated coffee from instant tea or instant decaffeinated coffee, and a system for adding cream and/or sugar to the coffee or the tea, according to the purchaser's selection.

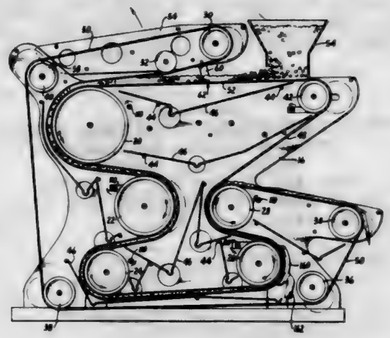
3,446,138
CONTINUOUS DEEP FAT FRYER
Mark Hasten, Lee S. Jones, John T. Haub, and Gerald E. Ceroll, Minneapolis, Minn., assignors to General Mills, Inc., a corporation of Delaware
Filed Oct. 13, 1967, Ser. No. 675,124
Int. Cl. A47j 37/12
U.S. Cl. 99—404 10 Claims

A continuous deep fat fryer having a conveyor for moving food products through an oil bath to a discharge con-



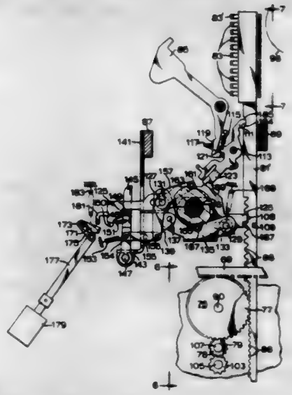
veyor. A plate cooperates with the conveyor to submerge the food product in the frying oil which is directed into a fryer tank at one end of the tank. Baffles are provided at the input to eliminate eddy currents in the oil flow.

3,446,139
SERPENTINE WINE PRESS
Robert J. Coffelt, Davis, Calif., assignor to The Regents of the University of California, Berkeley, Calif.
Filed May 10, 1966, Ser. No. 548,961
Int. Cl. B30b 9/24, 5/04
U.S. Cl. 100—118 9 Claims



A press employing a pair of perforated belts containing a pack of fruit therebetween which are entrained over a plurality of rollers in a serpentine path. The distance between rollers is greater than the sum of the thicknesses of the belts and the fruit pack, and the belts are maintained under substantial tension so that the fruit pack is compressed as the belts move over each roller and decompressed as the belts move from one roller to the next. The press includes adjustable input rollers to prevent fruit pile-up at the input end of the serpentine path, fluid piston tensioning means with a common source of fluid pressure for tensioning alternate belt supporting rollers, and a belt having a central perforated portion through which juice is extracted and marginal unperforated portions which impart tensile strength to the belts and facilitate the formation of a fruit receiving pocket between the belts.

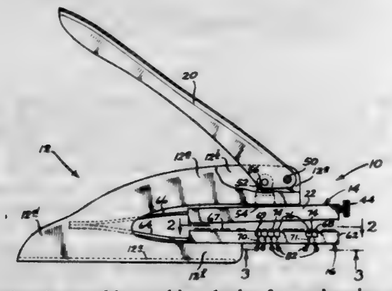
3,446,140
SAFEGUARD CHARACTER INDEXING MECHANISM
Eddie M. Henderson, Leazie, and Charles G. Stephen, Cumbernauld, Scotland, assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Jan. 15, 1968, Ser. No. 697,982
Int. Cl. B41j
U.S. Cl. 101—93 18 Claims



A predetermined number of type carriers in an accounting machine are each provided with a safeguard type

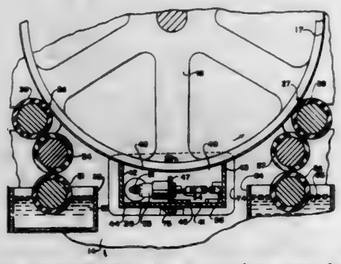
character, such as a $ sign, located above the 0 type. Means are provided for selectivity lowering one of these type carriers from its 0 printing position to its safeguard symbol printing position during a printing operation so that a safeguard symbol is printed immediately to the left of the highest order digit of a printed amount. Keyboard control means are provided for activating and de-activating the safeguard characters depending upon whether monetary amounts are to be printed on checks or the like or on non-negotiable records.

3,446,141
INKED EMBOSSMENT MARKING DEVICE
Murray S. Gardiner, P.O. Box 93, Medford, Oreg. 97501
Filed Aug. 25, 1967, Ser. No. 663,376
Int. Cl. B44b *5/00*; B41j *27/00*; B41k *1/42*
U.S. Cl. 101—18 7 Claims



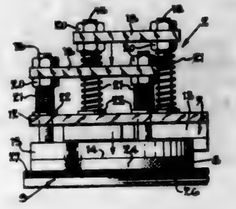
A hand-operable marking device for embossing and inking characters on a sheet such as a check. The device includes a pair of spaced, relatively movable members which may be pressed together, with one of the members carrying inking apparatus to produce inking of the sheet including an ink pad and an ink supply for the pad which feeds ink to the pad, and the other member carrying adjustable elements having raised characters to produce embossing of the sheet. The member with the ink pad also includes skirt portions surrounding the ink pad and projecting toward the other member which engage the other member on movement of the two together to limit the degree of embossing and inking produced.

3,446,142
DRYING DEVICE FOR A PRINTING PRESS
Edward Vandenberg, 426 Findlay St., Cincinnati, Ohio 45214
Filed June 9, 1966, Ser. No. 556,410
Int. Cl. B41f *23/04*, *5/16*
U.S. Cl. 101—178 5 Claims



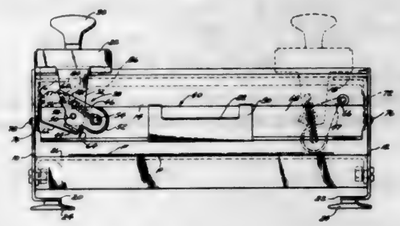
An ink drying device for a printing press including a body provided with channels along which air is drawn crosswise of a printed web, there being a heating rod in one of the channels for heating the web and the air as the air is drawn across the web.

3,446,143
DECORATING STAMP
Elmer V. Williamson, 7729 Dones Ave., Madeira, Ohio 45243
Filed Apr. 13, 1966, Ser. No. 542,397
Int. Cl. B41k *3/24*
U.S. Cl. 101—201 1 Claim



The disclosure relates to a decorating stamp for impressing single or multiple disparate color decorative designs upon the irregular soft surface of food products. In order to produce the different colors, the stamp is made up of movable sections, with registry means holding them in assembly, each section having a rigid backing element and a printing pad section formed of porous foam material attached to the backing element and providing voids capable of absorbing sufficient liquid color for multiple impressions. In order to apply the colors to the printing pad sections, the sections are shiftable individually to different planes relative to one another for pressing the sections into contact with different color applicators, making it possible for the pads to absorb two or more colors. After applying the liquid color, the sections are shifted to a common printing plane and held in assembly by the registry means.

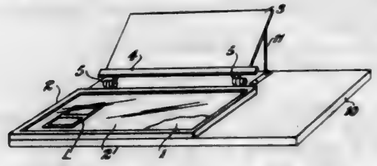
3,446,144
PRINTING MACHINES WITH FORM CLAMPING MEANS
Charles J. Frampton, Willowdale, Ontario, Canada, and John A. Maul, Lyndhurst, Ohio, assignors to Addressograph Multigraph Corporation, Cleveland, Ohio, a corporation of Delaware
Filed Oct. 25, 1966, Ser. No. 589,364
Int. Cl. B41f *3/20*, *3/04*, *1/30*
U.S. Cl. 101—269 8 Claims



A data recorder has a movable platen carriage carrying a roller platen and includes a form clamping device movable into and out of engagement with a form to be printed. Means are provided for moving the form clamping device to clamping and release positions as a result of motion of the platen carriage, such that the form clamping device is in clamping position as the roller platen moves over the form to effect a printing operation.

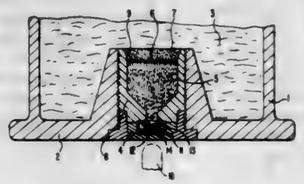
A platen shifting means is also provided to effect lowering of the platen to a printing level when the platen carriage is moved from a home position across the bed of the machine to an actuated position, and for raising the platen to a non-printing level as the carriage reaches the actuated position. The level to which the platen is raised provides adequate clearance for ready insertion of wide forms beneath the platen when placing them in position for printing. The form clamping device continues to be maintained in clamping position during return movement of the carriage from the actuated position and is moved to release position when the platen carriage approaches the home position.

3,446,145
REGISTERING PRINTING PLATES
Sidney Arthur Weeks, Guildford, Raymond Sidney Taylor, Sanderstead, James Croughan, London, England, assignors to Taylor Weeks & Partner Limited, London, England, a corporation of the United Kingdom
Filed Feb. 23, 1967, Ser. No. 617,989
Claims priority, application Great Britain, Oct. 20, 1966, 46,930/66
Int. Cl. B41c; B41m; B41n
U.S. Cl. 101—426 12 Claims



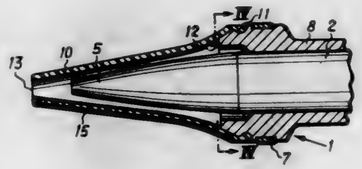
A method and apparatus of laying printing plates or blocks on to a backing sheet or directly on to a forme by placing the layout or copy on a layout board using a transparent transfer sheet to obtain an image and aligning the image with the layout or copy so that on transferring the plate or block from a plate holding the positioning frame to the backing sheet or forme exact registration with the layout can be obtained.

3,446,146
ARTILLERY CARTRIDGE
Hans Stadler, Nuremburg, Heinz Gawlick, Furth, and Günther Marondel, Erlangen, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany
Filed Dec. 27, 1966, Ser. No. 604,700
Claims priority, application Germany, Dec. 28, 1965, D 49,033
Int. Cl. F42b *5/36*
U.S. Cl. 102—45 19 Claims



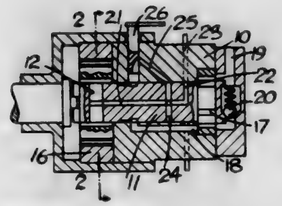
An artillery cartridge with a propelling powder charge, in which there is inserted into the cartridge bottom a primer charge followed by a booster charge, which in turn is followed by an auxiliary charge consisting of flash-damping and/or barrel-protecting substance or substances to be fired into the propelling charge during firing; a nozzle-shaped space may be used in the primer for accommodating the flash-damping and/or barrel-protecting substances or conically flared ignition channels may also be used connect the space accommodating these substances with the propelling charge.

3,446,147
CASING FOR THE SABOT OF A PROJECTILE
Walter Engel, Dubendorf, and Heinrich Burri, Zurich, Switzerland, assignors to Oerlikon-Buhrle Holding Ltd., Zurich, Switzerland
Filed Mar. 1, 1967, Ser. No. 620,058
Claims priority, application Switzerland, Mar. 4, 1966, 3,129/66
Int. Cl. F42b *13/06*, *13/16*
U.S. Cl. 102—93 1 Claim



A sabot-projectile assembly consists of a projectile, a sabot body, and a plastic nose casing. The projectile, which may be of the armor piercing type, consists of a main body which is substantially cylindrical and a nose portion which is substantially conical. The body of the sabot, which may consist of an aluminum alloy, surrounds the substantially cylindrical main body portion of the projectile while the plastic nose casing covers and extends in front of the projectile nose. The plastic nose casing may consist of foam rubber with an outer sheet-like shell of relatively denser plastic material, such as polyethylene. The plastic nose casing is designed to radially expand, rupture, and be flung off in response to the combination of centrifugal force and excess internal air pressure, after the sabot-projectile assembly leaves the barrel of the projecting weapon, thus permitting the projectile to then discard the body of the sabot.

3,446,148
LIQUID FUEL PUMPING APPARATUS
Paul Edgar Glikin, London, and Keith Finer Hutcheon, Gerrards Cross, England, assignors to C.A.V. Limited, London, England, a British company
Filed May 23, 1967, Ser. No. 640,616
Claims priority, application Great Britain, May 31, 1966, 24,085/66
Int. Cl. F04b *13/00*
U.S. Cl. 103—2 3 Claims



Liquid fuel pumping apparatus comprising a pumping plunger reciprocable in a bore formed in a rotary distributor, the distributor having a delivery passage for registra-

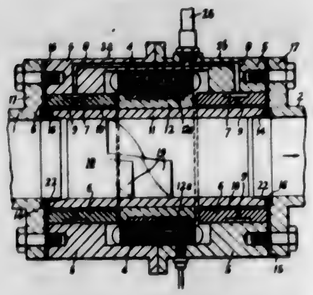
tion with an outlet port, the cam lobe being so shaped that after an injection stroke and after communication of the delivery passage with an outlet port has been broken, the plunger is allowed to move a predetermined extent in the direction in which it moves during a filling stroke.

3,446,149
PUMP
Homer C. Ames, 1086 Marshall Way, and Edward T. Stricklland, 4700 E. Sunny Dunes Road, both of Palm Springs, Calif. 92262
Filed Feb. 2, 1967, Ser. No. 613,562
Int. Cl. F04b 19/16; F04d 5/00
U.S. Cl. 103—84 16 Claims



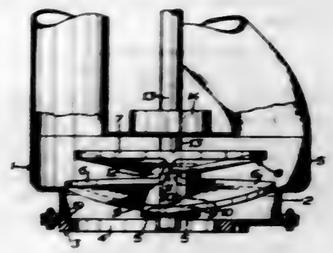
A pump for pumping fluids, and particularly viscous liquids, employing a pair of relatively movable elements. One element has a discontinuous configured surface and the other has a relatively smooth and continuous surface. The fluid is dragged along by the moving element and moves between spaces or chambers in the configured element to an outlet. The pump also can debubble a liquid, and functions to mix, mill or homogenize liquids or liquid mixtures.

3,446,150
FLUID BEARING PUMP
William Colin Doe, Bournemouth, England, assignor to Gilbert Colin Davis, Johannesburg, Transvaal, Republic of South Africa
Filed May 29, 1967, Ser. No. 641,876
Int. Cl. F04d 13/06, 29/04
U.S. Cl. 103—87 10 Claims



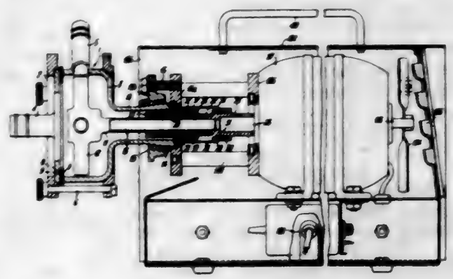
Described is a pump for fluids in which a hollow rotor is supported in a stator by fluid bearing means in a bearing gap, the bearing fluid being under a pressure greater than the pressure of fluid to be pumped through the hollow rotor by impeller means in the hollow core as the rotor rotates. The rotor may be part of a motor, e.g. an electric motor.

3,446,151
SUBMERSIBLE CENTRIFUGAL PUMP
Hilding Gustav Vincent Andersson, Lintorp, Sweden, assignor to Osby Pumpindustri, Osby, Sweden
Filed June 8, 1967, Ser. No. 644,705
Int. Cl. F04d 7/00, 3/02
U.S. Cl. 103—111 2 Claims



A submersible centrifugal pump having cutting means for comminuting straw and other fiber material suspended in the pumped medium, in which the cutting means releases uncomminuted fiber material and prevents clogging of the pump.

3,446,152
SEAL ASSEMBLIES
Roger A. Buttery, Ferring, Sussex, England, assignor to Quickfit & Quartz Limited, Stone, Staffordshire, England, a corporation of Great Britain
Filed Jan. 16, 1967, Ser. No. 609,492
Claims priority, application Great Britain, Jan. 17, 1966, 57,689/66
Int. Cl. F04d 29/10; F16j 15/16; F16k 41/00
U.S. Cl. 103—111 7 Claims

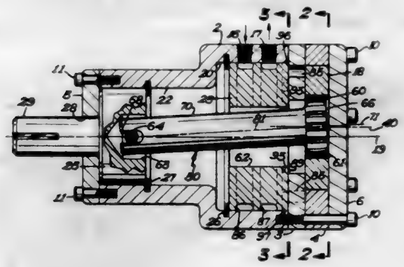


A seal assembly for sealing a rotatable shaft in a non-rotatable member, the seal assembly comprising a sleeve for said shaft, said sleeve having first and second end portions joined by an axially compressible central portion, the first end portion of the said sleeve being a fluid-tight fit on said shaft, a resilient member for urging a sealing surface on the second end portion of the sleeve into sliding sealing engagement with a surface on the non-rotatable member, and coupling means for connecting said second end portion and said shaft to driving means for rotating the sleeve and the shaft about their respective longitudinal axes.

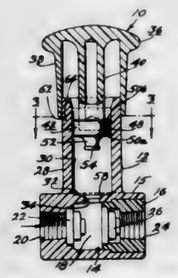
3,446,153
FLUID PRESSURE OPERATED MOTOR OR PUMP
Wayne B. Easton, Eden Prairie, Minn.
(400 Dain Tower, Minneapolis, Minn. 55402)
Filed July 17, 1967, Ser. No. 653,918
Int. Cl. F01c 1/10
U.S. Cl. 103—130 2 Claims

This invention relates in particular to a valve drive mechanism for a low speed, high torque motor or pump

of the type which utilizes a gerotor mechanism for forming expanding and contracting chambers. The valve is of the high speed type which rotates in synchronism with the orbiting movement of the gerotor and a new way for driving such a valve is provided.



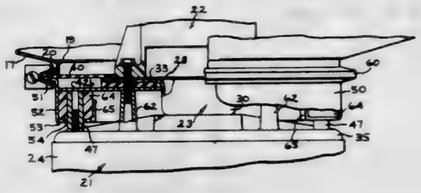
3,446,154
HAND PRIMER
Richard W. Fuchs, Simsbury, Conn., assignor to AMBAC Industries, Incorporated, Springfield, Mass., a corporation of New York
Filed May 15, 1967, Ser. No. 638,252
Int. Cl. F04b 19/22, 21/08
U.S. Cl. 103—153 7 Claims



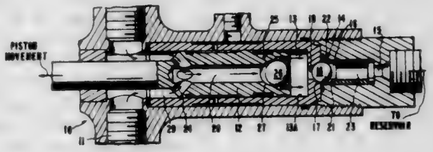
A hand primer for engine fuel systems and similar applications including means for locking the primer plunger in the retracted position, said means including a resilient flanged nub extending from the plunger piston adapted for forcible entry through the fluid opening at the cylinder end, the resilient nub in conjunction with the vacuum formed between the piston and cylinder end wall holding the plunger in the retracted position against fluid pressure.

3,446,155
MOTORIZED PUMP MOUNTING MEANS FOR AUTOMATIC DISHWASHER
Lauren W. Guth, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed June 22, 1967, Ser. No. 648,104
Int. Cl. F04b 21/00
U.S. Cl. 103—218 10 Claims

Fluid-sealing shock-absorbing mounting means for suspending a motorized pump assembly from a shouldered sump opening in the bottom wall of the wash chamber of an automatic washing machine. The mounting means includes a flexible, generally planar, solid ring-like boot and a substantially rigid support ring. The boot inner end is fluid-sealed to a shoulder or flange on the pump assembly and the boot outer end is sandwiched between the sump opening shoulder and the support ring outer end in a fluid-sealing relationship. The support ring inner end receives resilient shock-absorbing means connected to the pump assembly. A plurality of erect circumferentially spaced transverse fins are provided on the boot between its inner and outer ends and are received within the sump opening to guide installation of the pump assembly therein and to mitigate pump surging.



3,446,156
DIFFERENTIAL PRESSURE POPPET VALVE
George James Lightfoot, Rolling Hills Estates, Calif., assignor to The Cosmodyne Corporation, Torrance, Calif., a corporation of California
Filed Nov. 17, 1966, Ser. No. 595,120
Int. Cl. F04b 21/02, 21/04
U.S. Cl. 103—228 13 Claims



1. In a pump having a piston movable in a normal back-and-forth cycle of forcing a fluid through a cylindrical passageway which in part forms a pumping chamber, the improved discharge valve adapted to control the discharge of said fluid from said pumping chamber into a reservoir therefor, said discharge valve comprising:

a seat in the proximity of one end of said pumping chamber and adapted to seat a discharge blocking member;

a discharge blocking member movably mounted between the pumping chamber and reservoir, said seat and said member being so sized that when said member is seated therein, the flow of liquid through said discharge valve is substantially blocked; and

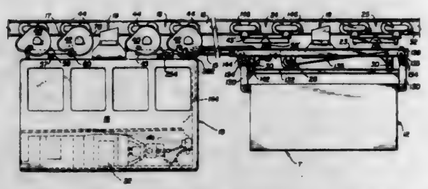
first and second ports, at least, coupling said chamber to said reservoir to enable the difference in pressure on the piston side and the reservoir side of said member to seat said member during the downstroke of said cycle when the piston is moving in said direction away from said member, whereby fluid is prevented from flowing from said reservoir into said passageway and to enable the pressure difference to hold said member away from said seat during a substantial part of the upstroke of said cycle when said piston is moving towards said member, whereby fluid can flow through said first port into said reservoir, said second port being located centrally, and said first port being laterally spaced from said centrally located first port.

3,446,157
MEANS FOR ASPIRATING LIQUID AND SOLID MATERIALS
Robert H. Schafer, Capitola, Calif., assignor to Schafer-Davis Engineering Co., Inc., Corte Madera, Calif., a corporation of California
Filed July 27, 1967, Ser. No. 656,377
Int. Cl. B65g 53/42; F04f 5/10
U.S. Cl. 103—258 5 Claims



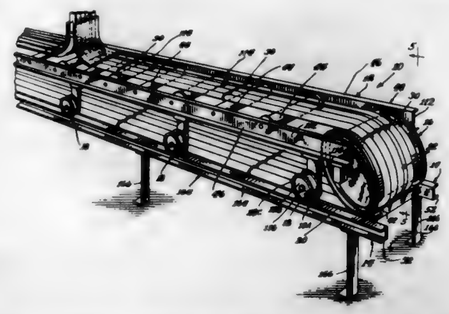
Apparatus including a pair of open ended conduits interfitted within one another in spaced relation relative to each other to form an annular high pressure axially extending chamber therebetween, means at one adjacent pair of ends of the conduits closing the adjacent end of the chamber and stabilizing the spaced relationship between the conduits, the open end of the inner conduit at the aforementioned one end thereof comprising a material inlet opening, means on the outer one of the conduits affording connection of the annular chamber with a high pressure fluid means and communicating with the chamber adjacent the closure means, and the adjacent other pair of ends of said conduits comprising the material discharge end of the apparatus and being complementarily configured so as to provide a shaped high vacuum space at this end of the apparatus.

3,446,158
SUSPENDED MONORAIL SYSTEM
Frank P. Pettit, Arvada, Colo., assignor to Projects General Corporation of America, Denver, Colo., a corporation of Colorado
Filed May 31, 1966, Ser. No. 553,938
Int. Cl. B61b 13/04
U.S. Cl. 104—95 23 Claims



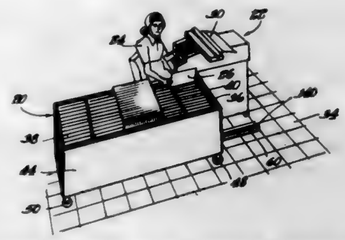
In a monorail system, a load-carrying vehicle with a hoist car is suspended from an elevated track by drive units, each unit characterized by having an eccentrically mounted drive wheel beneath the track which is urged upwardly under the weight of the vehicle into firm driving engagement with the track in either direction of travel; and brake units for the vehicle and hoist car are selectively braked and released under the control of a common hydraulic circuit utilized to reversibly drive the drive units and to control lifting and lowering of the hoist car.

3,446,159
CABLE CART ARRANGEMENT
William P. Lawson, Hammond, Ind., assignor to Ogden Engineering Corporation, a corporation of Indiana
Filed Sept. 27, 1967, Ser. No. 671,010
Int. Cl. B61b 5/00; H02g 11/00, 1/00
U.S. Cl. 104—178 19 Claims



The invention relates to a cart arrangement for supporting in an orderly manner connectors such as cables, hoses, and the like that extend or connect to a piece of movable equipment, such as a trolley or movable bridge mounted welding equipment for supplying the welding equipment with electricity, gas, etc. The cart is in the form of an open centered wheeled frame riding on an open centered trackway that parallels the path of movement of the equipment being serviced, which frame has journalled at each end thereof a free wheeling pulley. The various connectors are divided into two banks from a stationary attachment entry station adjacent one side of the cart. One of the banks is brought in a half loop around one of the cart end pulleys while the other bank is similarly applied to the other end pulley, with the banks being brought together on the other side of the cart and applied to an attachment secured to the movable equipment, from which they extend or are connected to the parts being serviced. The connectors of each bank in several embodiments are secured together in ribbon form with all of the cables, hoses, etc. disposed in approximate alignment transversely of the cart. The cart frame and connector attachments are arranged so that the lengths of the connector banks extending between the cart frame end pulleys are maintained in substantial parallelism. Several alternate ways of arranging the cart, training the connector banks, and ribboning the connectors together are disclosed.

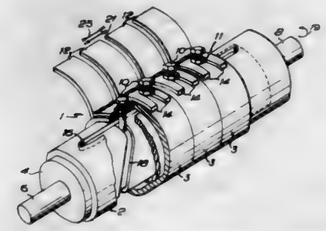
3,446,160
FILE CONTAINER
Ernest A. Dahl, Jr., 729 Greenwood Ave., Wilmette, Ill. 60091
Filed Feb. 13, 1967, Ser. No. 615,751
Int. Cl. B61b 7/20, 13/00
U.S. Cl. 104—235 5 Claims



The invention consists of a movable filing cabinet or the like, having wheels and a track-guided chain mounted

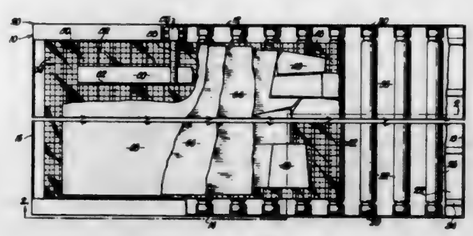
on the cabinet. The chain is entrained over motor driven sprockets which are driven by a floor mounted motor. The motor is switch controlled such that the file cabinet may be moved, under control of an operator, back and forth along its guide track which is mounted on the floor.

3,446,161
APPARATUS FOR TRANSFERRING DOUGH FROM A SUPPLY SOURCE TO A RECEIVING STATION
Frederick W. Oddy, Leeds, England, assignor to Oddy Engineering Limited, Yorkshire, England, a British company
Filed Aug. 21, 1967, Ser. No. 662,092
Claims priority, application Great Britain, Sept. 16, 1966, 41,387/66
Int. Cl. A21c; B65g 47/26
U.S. Cl. 107—15 7 Claims



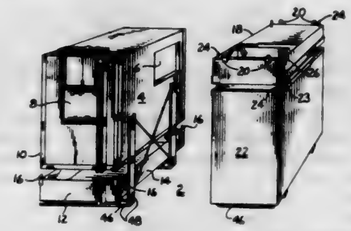
Apparatus for transferring dough from a supply source to a receiving station during processing between one machine and another prior to baking the completely processed dough comprising an inner stationary drum, an outer sleeve rotatable about the stationary drum, a plurality of rings mounted on the outer sleeve which slide axially thereon and a dough receiving finger carried by each of the rings. The fastener for the finger on the associated ring is threaded at the top and unthreaded at the bottom of the shank which extends through the outer sleeve and fits into an endless cam track on the inner drum. A locking nut serves to vary the spacing between the rings and the fingers in the axial direction of the sleeve.

3,446,162
PHOTO LAY-MARKER TABLE
Hugo E. Kranz, Overland Park, Kans., assignor to Replica Associates, Inc., Kansas City, Mo., a corporation of New York
Filed Sept. 21, 1967, Ser. No. 669,440
Int. Cl. A47b 13/00
U.S. Cl. 108—23 4 Claims



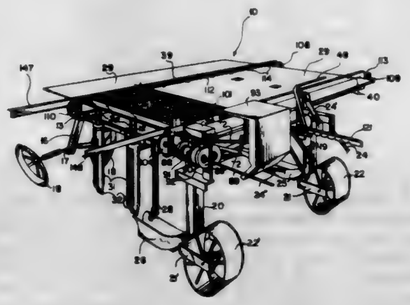
A table for use in the garment industry for producing markers which can be positioned upon a lay of material as a guide in cutting the lay. The lay marker table includes a base sheet normally disposed in a horizontal position having a reflective coating on one face thereof, said face supporting a plurality of light tubes, the light tubes, in turn, supporting a flat sheet of transparent material, there being translucent indicia on the sheet of transparent material whereby patterns may be positioned thereupon, suitable copy paper then being placed in overlying relationship to the patterns and the sheet of transparent material and the light tubes actuated whereby to reproduce said patterns on a master copy of the marker, which master copy can then be utilized to produce cutting copies of the marker for placement on the lay as a guide in cutting.

3,446,163
MODULAR INCINERATOR CONSTRUCTION
Peter S. Sharpe, Joliet, Ill., assignor to Brule Incinerator Corporation, a corporation of Illinois
Filed Dec. 7, 1967, Ser. No. 688,781
Int. Cl. F23g 3/00
U.S. Cl. 110—8 7 Claims



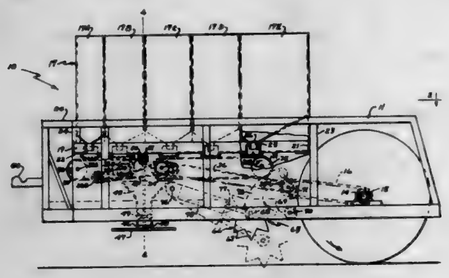
A multi-section incinerator construction wherein each of the modules making up the assembled incinerator are of a conventional height, width, breadth and weight for ease of shipment to the location where the assembled incinerator is to be located. The modules are so constructed that each is a separate, independent member that may be easily assembled in co-acting relationship to form an integral unit. Thusly, the off-site, in-plant construction of large incinerator units made up of modules provides a superior construction more economically than has heretofore been available.

3,446,164
AUTOMATIC TRANSPLANTER
Barney K. Huang, 5108 Kaplan Drive 27606, and William E. Splinter, 31 Shepherd St. 27607, both of Raleigh, N.C.
Filed Feb. 20, 1967, Ser. No. 621,722
Int. Cl. A01c 11/02; G07f 11/48
U.S. Cl. 111—3 17 Claims



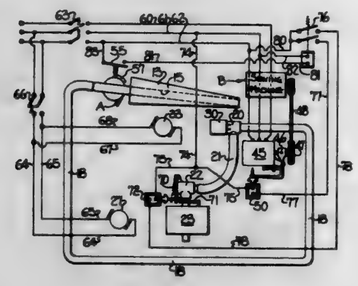
In abstract, a preferred embodiment of the present invention is a fully automatic, impact type, transplanter for field planting of potted plants through the use of a wheel driven electromechanical programming system.

3,446,165
ROLLER CART FOR LAWN TREATMENT
Robert J. Magda, Morganville, and Anthony Giordano, Jr., Colts Neck, N.J., assignors to Auto-Lawn, Inc., Matawan, N.J., a corporation of New Jersey
Filed Oct. 4, 1966, Ser. No. 584,224
Int. Cl. A01c 7/08, 19/00
U.S. Cl. 111—11 5 Claims



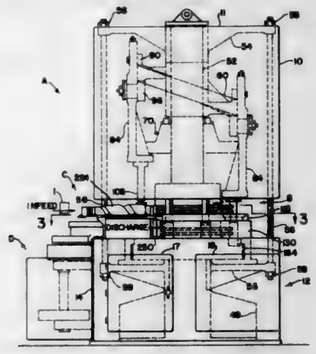
A lawn treating cart having all the necessary equipment to build and maintain a lawn, namely a plough or rotor-tiller, an aerator, a scarifier, a roller, a plurality of bins for seed, insecticide, fertilizer and a pre-emergent crabgrass control in which each bin is provided with a calibrated gate valve that is remotely controlled by the driver of the cart. The cart is also provided with means to carry the material being poured from any bin or any combination of bins to a single spreader to insure mixing and even spreading. Also the speed of movement of the cart regulates the amount of seed or material spread so that exact quantities can be laid per square foot.

3,446,166
APPARATUS FOR INSPECTING AND SEWING STOCKINGS
Daniel B. Bounous, Valdese, N.C., assignor, by mesne assignments, to Southern Textile Machinery Company, Inc., Paducah, Ky., a corporation of Kentucky
Filed Oct. 5, 1966, Ser. No. 584,455
Int. Cl. D05b 23/00, 69/00; A41h 43/00
U.S. Cl. 112—2 11 Claims



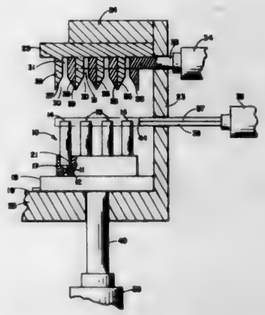
A stocking inspecting and toe closing apparatus including an elongated inspection form supported adjacent one end for pivotal movement between an inspection position and a sewing position. A sewing machine is mounted adjacent the other end of the form, when the form is at said sewing position, for sewing closed the open toe of a stocking supported on the form. Sewing machine controls responsive to movement of the inspection form are provided to actuate the machine when the form is in the sewing position and to deactuate the machine when the form is in the inspection position.

3,446,167
ROTARY DRAWING, IRONING AND DOMING PRESS FOR PARTIALLY EXTRUDED CAN BODIES
Ronald H. D. Armbruster, Battle Creek, and Joseph B. Hubert, Hastings, Mich., assignors to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware
Filed Aug. 26, 1966, Ser. No. 575,387
Int. Cl. B21d 51/26, 22/02
U.S. Cl. 113—7 8 Claims



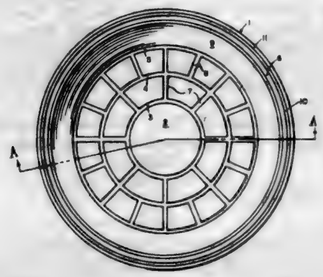
Apparatus for forming can bodies from cup-shaped blanks. The disclosed apparatus comprises a vertically extending frame on which is mounted a rotatable turret carrying a plurality of circumferentially positioned, vertically extending rams which are reciprocated vertically relative to the turret during turret rotation. A plurality of extruding orifices are carried by the turret in aligned relationship with the rams. Additionally, end shaping abutments are carried by the turret subjacent to the rams so that after the rams have moved a cup-shaped blank through the extruding orifice thereby forming a can, the lower end of the can is shaped by the end shaping abutment. Feed of blanks between the rams and the extruding orifices is accomplished by a rotatably mounted star wheel feed mechanism positioned adjacent the turret and rotatable therewith. Discharge is accomplished by a similarly arranged star wheel positioned between the end shaping abutment and the extruding orifice.

3,446,168
TUBE-FOLDING ARRANGEMENT
Mason L. Gordon, Rolling Hills, Calif., assignor to Ablestik Adhesive Company, Torrance, Calif., a corporation of California
Filed Mar. 10, 1967, Ser. No. 622,359
Int. Cl. B21d 19/12, 19/08
U.S. Cl. 113—54 14 Claims



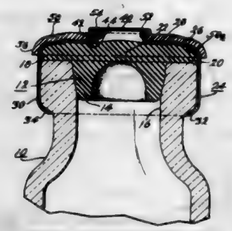
The open end of a metal foil tube is inserted between plates having a tapered entrance leading to opposed surfaces, which are brought toward each other to compress the tube end. The tube then is removed and the compressed end is pushed laterally and bent over, after which it again is introduced between the plates and compressed a second time. The cycle of bending over and flattening the tube end is repeated to create a multiple fold.

3,446,169
FOIL CONTAINER AND MACHINE FOR MAKING FOIL CONTAINERS
Warren J. Heldenbrand, 224 Cowing Road, Muncie, Ind. 47302
Filed Dec. 10, 1964, Ser. No. 417,401
Int. Cl. B21d 51/18; B21j 7/16
U.S. Cl. 113—120 5 Claims



1. A method of manufacturing a foil container including steps of forming a first bottom portion and part of a first rib; forming a second bottom portion, the remaining part of said first rib, a series of spokes and half of a second rib; forming the remaining part of the second rib, an up-turned wall, and a flange with a third rib therein.

3,446,170
METHOD AND SYSTEM FOR MAKING A CONTAINER CLOSURE
Eli Frank Andersen, Devon, Pa., assignor to The West Company, Phoenixville, Pa., a corporation of Pennsylvania
Original application Sept. 22, 1965, Ser. No. 489,184, now Patent No. 3,358,865, dated Dec. 19, 1967. Divided and this application Apr. 12, 1967, Ser. No. 650,145
Int. Cl. B21d 51/44, 51/48
U.S. Cl. 113—121 2 Claims



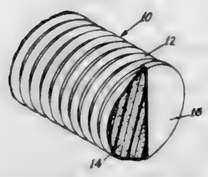
A method or system for making a truly tamperproof closure for a pharmaceutical bottle or the like by forming a cap of cup-like form with an annular top portion having a side wall depending from the outer peripheral edge of the top and a button disposed centrally of the top portion and connected thereto by fracturable bridge means. Thereafter a disc-like cover member made of a heat deformable material and having a central opening is placed over the cap so that it overlies the top thereof and circumscribes the button. The button is then deformed to securely hold the cover member in place over the top of the cap and thereafter the cover is heated to deform the cover member to provide a circumferentially extending lip engaging over the side wall of the cap whereby the cover member inner face conforms to the shape of the top.

3,446,171
NUCLEAR REACTOR CONTAINMENT SYSTEM
Robert Panoff, Annandale, Va., and Theodore Rockwell III, Bethesda, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 22, 1966, Ser. No. 596,247
Int. Cl. B63b 35/02
U.S. Cl. 114—.5 6 Claims



A containment system for a marine nuclear plant or a land-based-nuclear plant includes a containment vessel and piping means connecting the vessel to the innerbottom of a ship or to a structure having a large unoccupied volume thereby permitting vapor pressure resulting from rupture of the reactor system to be vented into the ship's innerbottom or to the enclosed volume.

3,446,172
PONTOON FLOATATION SUPPORT
Ted R. Morton, Dayton, and George A. Douglass, Trenton, Ohio, assignors to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio
Continuation-in-part of application Ser. No. 533,310, Mar. 10, 1966. This application Oct. 23, 1967, Ser. No. 685,992
Int. Cl. B63b 38/00
U.S. Cl. 114—.5 7 Claims



A load bearing pontoon floatation support for water floatation systems comprising a one-piece tube having the same average diameter throughout its length. The tube is entirely filled with expanded in situ, integral, low density, cellular foam material forming a unitary foamed element within the tube and providing maximum area contact with the interior surface of the tube, and means are provided for holding the foamed element in place within the tube.

3,446,173
OCEAN-GOING PUSH-BARGE AND BARGELINE
Ken Ohcho, Yokohama, Hiromu Ono, Nishinomiya, and Yoshikiyo Kanefusa, Takarazuka, Japan, assignors to Buludoza Koji Kabushiki Kaisha, also known as Bulldozer Koji Co., Ltd., Osaka, Japan
Continuation of application Ser. No. 589,078, Oct. 24, 1966. This application Oct. 26, 1967, Ser. No. 678,453
Claims priority, application Japan, Oct. 25, 1965, 40/66,286; Apr. 2, 1966, 41/21,389, 41/31,012
Int. Cl. B63b 21/56
U.S. Cl. 114—235 10 Claims

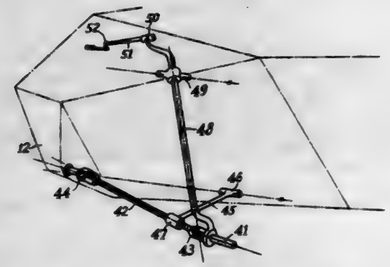
An ocean-going barge and a pusher vessel. The barge has a curved recess in the stern thereof which is open at the main deck, the stern and the bottom and has a gen-

erally elliptical cross section in a longitudinal plane and has a wall defining the recess which is concavely curved in cross section. The recess is large enough to receive the bow of the pusher vessel. The bow portion of the said pusher vessel is elliptical in cross section in the longi-



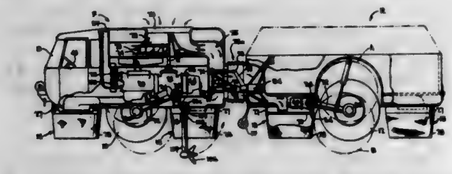
tudinal plane and having a convexly curved hull side. The bow fits into the said recess so as to leave a space therebetween. Damping members of resilient material are engaged between the bow portion of the pusher vessel and the wall defining the barge recess, and means are provided connecting the barge and the pusher vessel.

3,446,174
AMPHIBIOUS VEHICLES
Louis Henri Denis Marie Balsu, "Champfleury," Epernay, Marne, France
Filed Feb. 20, 1967, Ser. No. 617,387
Claims priority, application France, Feb. 18, 1966, 50,339
Int. Cl. B60f *3/00*
U.S. Cl. 115—1 **8 Claims**



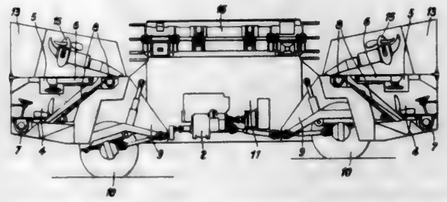
The present invention relates to amphibious vehicles of the kind having a body with mountings for front and rear wheels and according to the invention the mountings for the rear wheels are accommodated in housings of appropriate size, so that these wheels can be raised or lowered while still remaining in the same plane. The front wheels are provided with means for raising them with a composite rotational movement to apply them against the inclined body parts. The invention also provides means for raising and lowering these rear wheels.

3,446,175
MARGINAL TERRAIN VEHICLE
Gabriel D. Boehler and William F. Foshag, Washington, D.C., assignors to Aerophysics Company, Washington, D.C., a corporation of the District of Columbia
Filed July 26, 1967, Ser. No. 656,244
Int. Cl. B60f *3/00*; B60v *3/02*
U.S. Cl. 115—1 **12 Claims**



A marginal terrain vehicle capable of being sustained in selectively variable proportions by air pad cushions and/or wheels. The air supply for the cushions and the drive for the wheels is derived from a common power source, and the wheels are vertically adjustable to sustain any desired proportion of the vehicle weight. The vehicle is composed of articulately connected sections, each having a single pair only of wheels midway of its length, while the air cushion pads are disposed on opposite longitudinal sides of the wheels of each section so that, when used in conjunction with the wheels, they will balance each section on its single pair of wheels. Steering is achieved by horizontal angular movement between the body sections and pairs of wheels.

3,446,176
AMPHIBIOUS CROSSING EQUIPMENTS
Bernard Grange and Charles-Jean Long, Angers, Bernard Jugue, Puteaux, and Roger Mallet, Le-Mesnil-Saint-Denis, France, assignors to French State, represented by the Minister of Armed Forces, Ministerial Delegation for Armament, Technical Direction of Land Weapons, Technical Experiment Establishment of Angers, Paris, France
Filed Apr. 5, 1967, Ser. No. 628,707
Claims priority, application France, Oct. 5, 1966, 78,893
Int. Cl. B60f *3/00*
U.S. Cl. 115—1 **6 Claims**



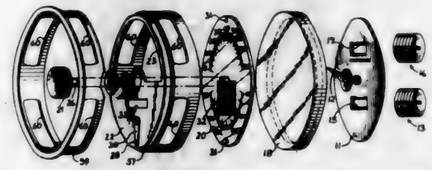
Equipment for crossing waterways comprises a series of identical amphibious vehicles each of which is completely symmetrical with reference to a transverse plane of symmetry and comprises a central water-tight cell having retractable road wheels and a driving compartment at each end and caissons articulated to opposite ends of the cell so as to fold upon top of the cell for road travel and to fold down to form extension of the cell and provide additional flotation for water navigation. Each of the caissons is provided with water propulsion means which can preferably be rotated in all directions for directional control.

3,446,177
WATER JET PROPULSION APPARATUS
Francis L. Thornburg, Canoga Park, and George E. Turnley, Jr., Los Angeles, Calif., assignors to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Apr. 18, 1968, Ser. No. 722,253
Int. Cl. B63h *11/08*
U.S. Cl. 115—16 **10 Claims**



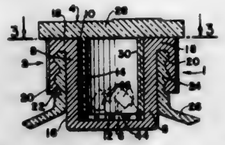
A water jet propulsion apparatus for a high speed, marine vehicle having an alternate inlet system comprising a primary inlet for operational efficiency in relatively clear water and a secondary inlet for most efficient operation in weed-infested water. A weed chopping device is located adjacent the secondary inlet to sever any weeds ingested into the apparatus.

3,446,178
CONVERTIBLE SCALE SPEEDOMETER CONSTRUCTION
Donald R. St. Clair, Mount Prospect, and William H. Redfield, Lake Forest, Ill., assignors to General Time Corp., New York, N.Y., a corporation of Delaware
Filed Nov. 29, 1966, Ser. No. 597,615
Int. Cl. G01p *1/06*
U.S. Cl. 116—116 **4 Claims**



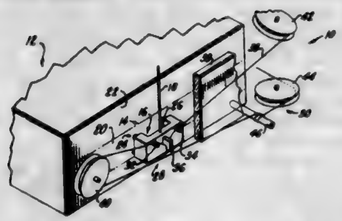
A speedometer dial face construction is described in which a transparent rotatable scale plate is used to alternately superimpose one of two scales on a single indicating dial face. One of two digital displays, each corresponding to one of the alternate dial scales, are embodied in the meter, and are selectively exposed to view in coordination with the associated dial scale in use.

3,446,179
DOSE TIME INDICATOR CLOSURE MEANS FOR RECEPTACLES
Samuel Bender, 6118 Riverdale Ave., Bronx, N.Y. 10471
Filed Mar. 14, 1967, Ser. No. 623,077
Int. Cl. G09f *9/40*; B65d *83/04, 85/56*
U.S. Cl. 116—121 **8 Claims**



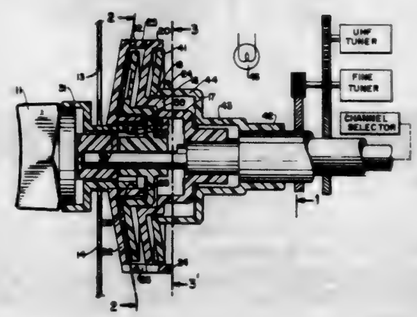
A cover for receptacles having an auxiliary pill-holding portion and a closure member to seal said pill-holding portion, said pill-receiving portion having time indicia inscribed thereon whereby indicating means carried by said closure member will coact with said time indicia to enable the user to record the time the next pill is to be taken, and orientation means provided whereby said closure member can be selectively seated within said pill-receiving portion to preclude accidental movement of said closure member once seated.

3,446,180
INDICATOR APPARATUS FOR SIGNAL RECEIVING TUNING MEANS
Joseph P. Palmer, Batavia, N.Y., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Mar. 1, 1967, Ser. No. 619,638
Int. Cl. H03j *1/02*
U.S. Cl. 116—124.1 **6 Claims**



Reduction of friction in radio receivers and the like is accomplished by elimination of the indicator guide bar and the utilization of areas of minimum contact formed between the movable indicator body and the track on the radio receiver.

3,446,181
INDICATING AND CONTROL MEANS FOR COAXIAL SHAFTS
Arthur M. Robson, Brooklyn, N.Y., assignor to Lear Siegler, Inc., Long Island City, N.Y., a corporation of Delaware
Filed June 26, 1964, Ser. No. 378,286
Int. Cl. H03j *1/04*
U.S. Cl. 116—124.4 **5 Claims**

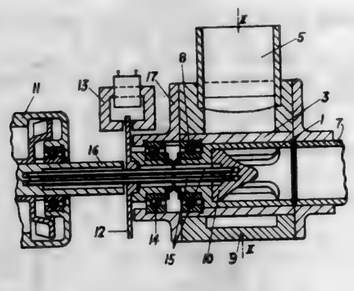


An arrangement of shaft and coaxial sleeves to provide indication of the position of the shaft and of one of the sleeves. This device is particularly useful in a television receiver, the shaft being connected to the shaft of a very high frequency tuner or channel selector, while a sleeve on the shaft is operated by a member on the forward side of the television receiver panel and controls the position of a fine tuning device for the VHF channel selector and of a UHF tuner, the tuner in turn being connected to another sleeve on the shaft and to a second indicator disc which indicates the position of the UHF tuner through the panel window so that the positioning of the VHF channel selector is indicated in a window when that selector is effective, and the position of the UHF tuner or channel selector is indicated through the same window when the VHF channel selector is turned to a particular position and the UHF tuner thus rendered effective.

3,446,182
SIREN FOR THE GENERATION OF SINE WAVE SOUND AND RANDOM NOISE
Oskar Bschorr, 3 Biedersteinerstrasse, Munich 23, Germany, and Detlev Kubanke, 46 Rosenheimer Strasse, Munich 8, Germany
Filed Sept. 2, 1965, Ser. No. 484,540
Int. Cl. G10k *7/06*
U.S. Cl. 116—147 **18 Claims**

A noise generator for producing sine wave sound and random noise of high intensity. The generator comprises a stator having a wall with openings formed therein. A rotor having a wall with openings formed therein is mounted inside the said stator. A driving means is coupled to said rotor to rotate the rotor within the said stator structure. A means providing compressed air is included to cause air flow through said stator openings into and through said rotor openings whereby the intensity of said sound and noise is dependent upon the pressure behind the said air flow. The varying of the rotor speed generates random noise. This is accomplished by providing an elastic spring coupling means connecting the rotor driving means and the said rotor. By varying the motor

moment or braking alternately, the rotor is subjected to a torsional oscillation. This oscillation is superposed to a constant speed for the motor so that the rotor speed varies rapidly. The particular sound being generated by this apparatus is a function of the particular placement of the openings or ports in the stator and rotor structures.

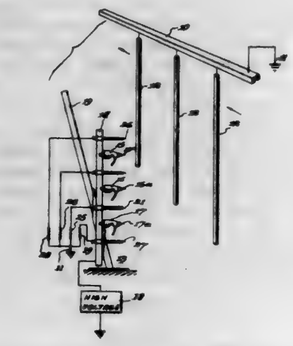


3,446,183

COATING SYSTEM

Edward W. Drum, Indianapolis, Ind., assignor to Ransburg Electro-Coating Corporation, a corporation of Indiana

Filed July 14, 1967, Ser. No. 653,390
Int. Cl. B05b 5/02
U.S. Cl. 118—629 13 Claims



A coating system including a plurality of electrostatically charged coating devices of conductive material, with electrodes between adjacent devices, connected to ground through resistors. The grounded electfodes establish an electrostatic reference for the coating system and increase the efficiency thereof.

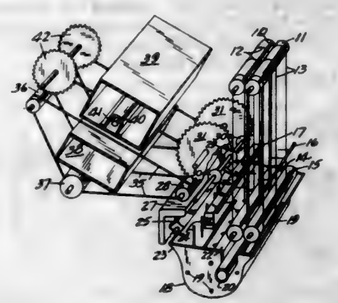
3,446,184

APPARATUS FOR POWDER DEVELOPMENT OF LIQUID LATENT IMAGES

Lee W. Johnson, North St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed Oct. 26, 1964, Ser. No. 406,417
Int. Cl. B44c 1/094
U.S. Cl. 118—637 3 Claims

Apparatus for developing a sticky latent image copy by pushing the sheet into a trough containing a constantly regulated weight of developer powder, the excess powder being returned to the trough and the sheet then heated to fix the image.

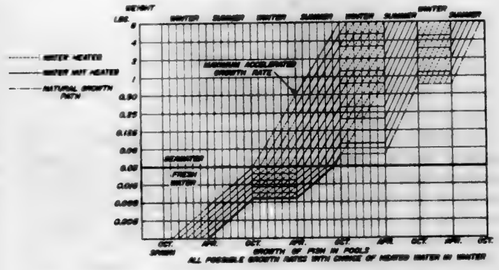


3,446,185

METHOD OF RAISING FISH

Patrick Edgar Cavanagh, Westmount, Montreal, Quebec, Canada, assignor to Premium Iron Ores Limited

Filed Mar. 14, 1966, Ser. No. 533,920
The portion of the term of the patent subsequent to May 27, 1985, has been disclaimed
Int. Cl. A01k 61/00
U.S. Cl. 119—3 6 Claims



1. A method of raising marketable fish in tanks from eggs spawned in the fall of the year to provide a predetermined monthly uniform delivery of fresh fish in the third year of growing by utilizing the variation in temperature from a low in the fall and winter seasons to a high in the spring and summer seasons, and comprising the steps of: hatching the eggs in the tanks to provide twelve equal units of fingerlings; accelerating the growth of all said units by supplying heat to the tanks during the first fall and winter seasons; providing a suitable supply of feed to the tanks, selecting seven of said units and accelerating the growth thereof during the second fall and winter seasons by supplying heat to the tanks; selecting the remaining five units, one each month of the second fall and winter seasons, and accelerating the growth thereof by supplying heat to the tanks, to provide five different growth paths; and selecting said seven units, one each month of the third fall and winter seasons, and accelerating the growth thereof by supplying heat to the tanks, to provide seven different growth paths, the seven growth paths providing marketable fish for the first seven months of the third year of raising, and the five growth paths providing marketable fish for the remaining five months of the third year.

3,446,186

POULTRY PECKING SHIELD

Milton Gene Harwood and Louis Jay Harwood, both % P.O. Box 38, Farmingdale, N.J. 07727

Filed May 26, 1967, Ser. No. 646,141
Int. Cl. A01k 37/00, 45/00
U.S. Cl. 119—97 1 Claim



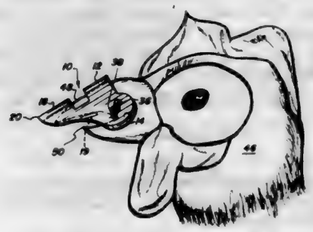
A poultry shield having a mouth portion terminating in a dull rounded tip for projecting beyond the mouth of poultry when positioned between the upper and lower beak portions and having securing means extending from the lateral sides of the mouth portion for engaging the nostrils of the poultry.

3,446,187

PECKING SHIELD FOR POULTRY

Milton G. Harwood and Louis J. Harwood, both % P.O. Box 38, Farmingdale, N.J. 07727

Filed Sept. 26, 1967, Ser. No. 670,583
Int. Cl. A01k 39/00
U.S. Cl. 119—97 3 Claims



A pecking shield for poultry having a beak covering portion terminating in a dull rounded tip for projecting beyond the beak of poultry provided with a mouth bit, and securing means for locking the poultry shield to the upper beak, to prevent pecking injury to other poultry.

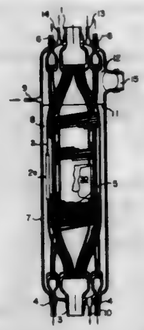
3,446,188

STEAM GENERATOR OR HEATER FOR AN ATOMIC POWER GENERATING PLANT

Masao Nozawa and Kiyoshi Sako, Ibaragi-ken, and Hiroshi Ueda, Tokyo, Japan, assignors to Japan Atomic Energy Research Institute, Minato-ku, Tokyo, and Nippon Kohkan Kabushiki Kaisha, Tokyo, Japan

Filed Jan. 3, 1967, Ser. No. 606,781
Claims priority, application Japan, Jan. 14, 1966, 41/1,936
Int. Cl. F22b 1/06
U.S. Cl. 122—32 7 Claims

A steam generator or heater using liquid metal as a heat transmission medium having both a primary side tubing for circulating the liquid metal of a heated side and a secondary side tubing for producing and heating the steam contained in the steam generator body, and the same or a different kind of liquid metal as is used on the heated side is used in the generator vessel as a heat transmission medium between the primary and secondary side tubes.

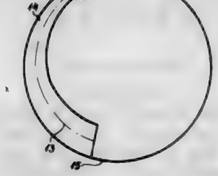


3,446,189

APPARATUS FOR FLASH-EVAPORATING LIQUIDS

Laszlo Szucs, Csaba Tarnadi, and Tamas Kornyey, Budapest, Hungary, assignors to Chemokomplex Ia Gep es Berendezes Export-Import Vallalat, Budapest, Hungary

Filed Feb. 20, 1967, Ser. No. 617,356
Int. Cl. F22b 3/04
U.S. Cl. 122—40 4 Claims



Apparatus for flash-evaporating liquids in which at least one nozzle is connected to a separator vessel having the form of a solid of revolution so as to open thereinto. The nozzle has a convergent section in which liquid is brought to saturation pressure and a subsequent divergent section in which the liquid is expanded and forms a vapor. The divergent section opens into the vessel to cause the vapor to form a vortex therein while any liquid droplets which remain are centrifugally separated and discharged at an outlet which is remote from the outlet for the vapor.

3,446,190

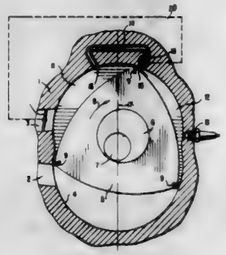
MIXTURE-COMPRESSING ROTARY PISTON INTERNAL COMBUSTION ENGINE

Wolf-Dieter Bensinger, Stuttgart-Riedenberg, Heinz Lamm, Esslingen-St. Bernhardt, and Hubert Zu Hohenlohe, Eschenau-Waldhof, Germany, assignors to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany

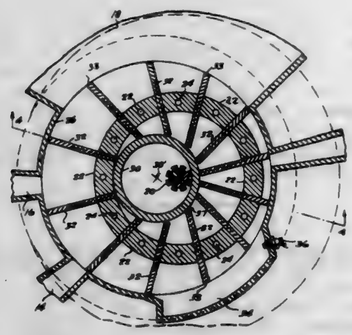
Filed May 8, 1967, Ser. No. 636,710
Claims priority, application Germany, May 11, 1966, D 50,085
Int. Cl. F02b 55/08, 53/06
U.S. Cl. 123—8 16 Claims

A mixture-compressing rotary piston internal combustion engine, especially of trochoidal construction, having a polygonal piston rotatable relative to the housing on the

eccentric of an eccentric shaft, the eccentric shaft itself being rotatably supported in the lateral housing parts and the housing case being provided with an inlet channel and an outlet channel valved by the piston corners of the polygonal piston, and which includes an overflow channel arranged in the housing case within that area in which, during the passage of a piston corner, a pressure drop exists between the compression chamber and the suction chamber in the direction toward the suction chamber; a control member, for example, a throttling member, is arranged in this overflow channel which is open during idling speed and partial loads but is closed during the remaining operation. The control member may be appropriately connected with the throttle valve arranged in the inlet channel. Additionally, the orifices of the overflow channel may be arranged approximately at the same distance from the major axis of the housing case while the spacing between the orifices may correspond approximately to a duration of overflow of 90 to 130° of eccentric shaft angle.

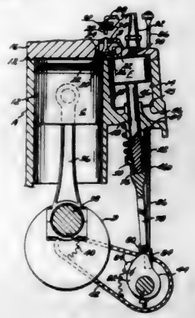


3,446,191
ROTARY COMBUSTION ENGINE
James C. Vernon, R.R. 1, Alexis, Ill. 61412
Filed July 7, 1967, Ser. No. 651,728
Int. Cl. F02b *53/00, 55/00*
U.S. Cl. 123—16 6 Claims



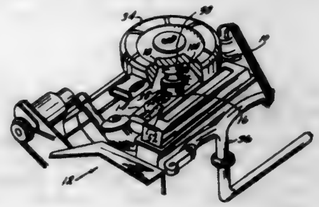
A rotary internal combustion engine of the type having rotary, radically slidable blades defining consecutive chambers and characterized by having the inner ends of the blades bear on a ring which is freely rotatable about its own axis, said axis being spaced from the axis of rotation of said blades.

3,446,192
FOUR-CYCLE INTERNAL COMBUSTION ENGINE
Mitchell J. Woodward, 9136 Artesia Blvd., Bellflower, Calif. 90706
Filed Sept. 5, 1967, Ser. No. 665,401
Int. Cl. F02b *75/04, 25/08;* F01l *11/00*
U.S. Cl. 123—78 7 Claims



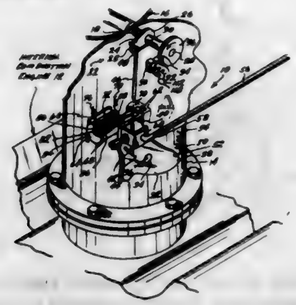
An internal combustion engine having a plurality of firing chambers in the block adjacent the cylinder openings therein and connected thereto, with a plurality of valved pistons being reciprocably movable in said chambers in such a manner that gaseous fuel is discharged into the upper portion of each of said chambers as the piston in the cylindrical opening associated with that cylindrical opening moves through an intake and compression stroke. Each of said valved pistons move from a lowermost to an uppermost position in one of said chambers to discharge all products of combustion from said chamber as the piston in said cylindrical opening associated with that chamber moves through a power and exhaust stroke, whereby said engine, due to the structure thereof, provides improved operating characteristics and discharges a minimum of partially burned fuel into the ambient atmosphere.

3,446,193
MEANS FOR IMPROVING COMBUSTION IN AN INTERNAL COMBUSTION ENGINE DURING DECELERATION
Edward S. Goller, 179 W. 50th St., San Bernardino, Calif. 92407
Filed June 21, 1967, Ser. No. 647,671
Int. Cl. F02m *3/06*
U.S. Cl. 123—97 4 Claims



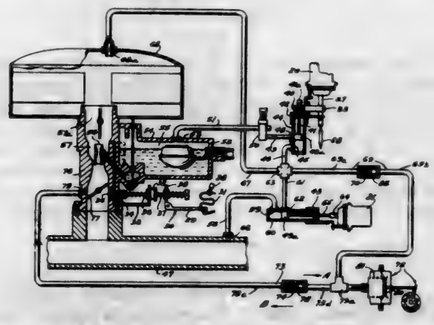
An air-flow control valve is connected to the intake manifold on an internal combustion engine immediately downstream of the carburetor butterfly valve and is actuated by a solenoid for a few seconds when the butterfly valve is closed for decelerating the engine. A time-delay relay is connected in a circuit with the solenoid and a switch. The switch is closed by a cam rotated by the butterfly-valve rod.

3,446,194
CARBURETOR CONTROL MEANS FOR INTERNAL COMBUSTION ENGINE
Edward S. Goller, 179 W. 50th St., San Bernardino, Calif. 92407
Filed June 21, 1967, Ser. No. 647,672
Int. Cl. F02m *3/06*
U.S. Cl. 123—97 8 Claims



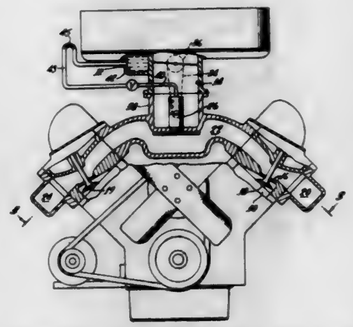
The set screw which adjusts the idling speed of an internal combustion engine is replaced by a solenoid having its armature normally extended to give the engine a faster-than-normal idle. The armature is automatically withdrawn to give the engine a normal idle 3–10 seconds after accelerator pedal is released to slow engine so that engine is given extra air for a few seconds after deceleration is initiated for the purpase of minimizing air pollution during deceleration, by combusting raw fuel which hangs on carburetor and intake manifold walls when butterfly valve is suddenly closed to decelerate.

3,446,195
DEVICE FOR CONTROLLING THE ADMISSION AND COMBUSTION OF FUEL IN AN INTERNAL COMBUSTION ENGINE
Frank A. Kane, Jr., Monrovia, Calif., assignor of one-fourth each to Girard F. Oberrender and Emanuel R. Posnack, both of New York, N.Y., and one-fourth to the estate of Frank A. Kane, administrator being Frank A. Kane, Jr., Monrovia, Calif.
Filed Dec. 8, 1967, Ser. No. 689,078
Int. Cl. F02d *31/00, 11/10*
U.S. Cl. 123—97 34 Claims



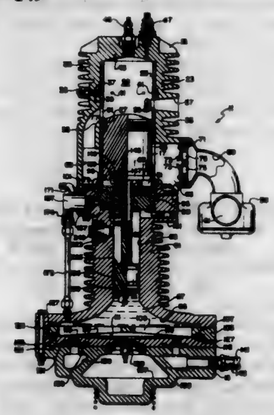
A device for controlling the admission and combustion of fuel in an internal combustion engine, and for effecting reductions in unburnt hydrocarbons, carbon monoxide and nitrogen oxides in automobile exhaust emissions. Spark control and air admission means are actuated, through an electro-mechanical system responsive to engine speed, for advancing the spark and coactively introducing additional air during deceleration and at cruising or partial throttle speeds. The said spark and air control is coactively combined with an idler shut-off and float bowl pressure-control means for preventing the introduction of unduly rich fuel and gas mixtures during deceleration. Means are provided for restoring normal settings, that is, retarded spark timing and air-fuel ratios required at acceleration and full-power operation, said electro-mechanical system effecting such restoration instantly and without the danger of stalling.

3,446,196
FUEL GASIFIER SYSTEM
Harold D. Daigh, Rolling Hills Estate, Calif., assignor to Atlantic Richfield Company, Philadelphia, Pa., a corporation of Pennsylvania
Continuation-in-part of application Ser. No. 597,963, Nov. 30, 1966. This application Feb. 13, 1967, Ser. No. 615,445
Int. Cl. F02m *29/00*
U.S. Cl. 123—119 13 Claims



This application relates to a novel fuel gasifier system for an internal combustion engine having a conduit for recycling exhaust gas into the induction system below the carburetor wherein fuel is inducted or pumped into the recycle gas distribution system for improved gasification of the fuel.

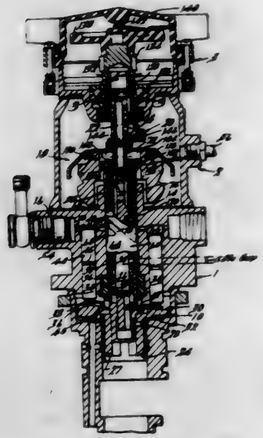
3,446,197
IGNITION SYSTEM FOR FREE-PISTON ENGINE
Svend E. Sorensen, King of Prussia, and William L. McHale, Broomall, Pa., assignors, by mesne assignments, to The Battelle Development Corporation, Columbus, Ohio, a corporation of Delaware
Original application Oct. 22, 1965, Ser. No. 501,719, now Patent No. 3,386,647, dated June 4, 1968. Divided and this application July 12, 1967, Ser. No. 688,282
Int. Cl. F02b *71/00;* F02p *3/00*
U.S. Cl. 123—149 1 Claim



An ignition system especially adapted to a free-piston engine wherein a signal, generated by movement of the

free piston with respect to a pick-up device, is amplified to provide sufficient electrical energy to fire a spark plug. Preferably the pick-up device is positioned for activation by a working piston that is connected to the free piston.

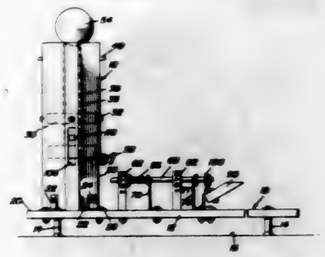
3,446,198
INTEGRATED FUEL INJECTION AND IGNITION DISTRIBUTOR ASSEMBLY
Alador O. Simko, Dearborn Heights, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed July 3, 1967, Ser. No. 650,796
Int. Cl. F02m 57/00
U.S. Cl. 123—140 17 Claims



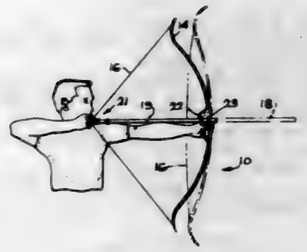
An internal combustion engine fuel injection pump and an ignition distributor are integrated into a single unit with a common mechanical governor simultaneously controlling changes in fuel flow and spark advance as a function of engine speed changes. Additionally, the engine throttle lever is connected to the assembly in a manner to simultaneously also control spark advance changes and fuel flow changes as a function of the load as indicated by changes in the position of the conventional engine accelerator pedal. The pump is of the central feed type, with a fuel flow control sleeve surrounding the pump and rotatable with it and also relative to it. The distributor is of the centrifugal advance type. The pump and distributor have a common driveshaft that is axially movable in one direction by the vehicle accelerator pedal, and the metering sleeve is movable in the opposite direction relative to the driveshaft, to vary fuel flow and spark advance changes.

3,446,199
SPRING ACTUATED BALL PROJECTING DEVICE
Arthur L. Saveca, 108 Forest St., Gloversville, N.Y. 12078
Filed Nov. 12, 1965, Ser. No. 507,400
Int. Cl. A63b 69/40
U.S. Cl. 124—16 8 Claims

A ball-pitching apparatus including a base from which an elevated ball cradling and support member is supported defining more than two surface portions thereof facing upwardly and spaced circumferentially about a generally horizontally disposed circular path for engaging a ball to be pitched from more than two spaced points disposed below the horizontal center of the ball and with the central lowermost portion of the ball exposed for impact from below. The apparatus includes an impact member supported from the base for reciprocal movement along an upstanding path in which the apparatus is operable to support a ball to be pitched and the apparatus further includes spring means yieldingly biasing the impact member to an upper position for impact with a supported ball, the apparatus further including means by which the ball supported therefrom may be supported in selected elevated positions.



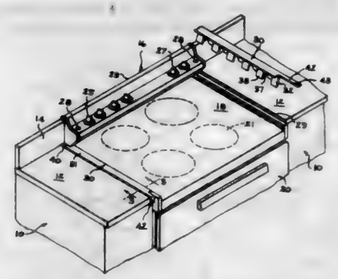
3,446,200
NATURAL ARCHERY ASSIST DEVICE
Norton M. Gross, Los Angeles County, Calif. (16510 San Jose St., Granada Hills, Calif. 91344)
Filed Aug. 11, 1966, Ser. No. 571,917
Int. Cl. F41b 5/00
U.S. Cl. 124—24 11 Claims



This invention relates to archery and, more particularly, to a novel archery shooting aid incorporating means for permitting the bow string of a long bow to be drawn to its shooting position with a nocked arrow and to be retained in its taut shooting position during the archer's aiming procedure and further including a mechanism for manually releasing the taut bow string from its shooting position at the will of the archer.

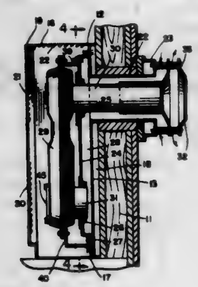
3,446,201
ACCESSORY TRIM FOR KITCHEN RANGE
Philip J. More, Evanston, Ill., assignor to General Electric Company, a corporation of New York
Filed Sept. 25, 1967, Ser. No. 670,029
Int. Cl. F24c 3/00
U.S. Cl. 126—39 3 Claims

This invention relates to a kitchen range including a combined cooktop and oven, where the cooktop is provided with a plurality of surface heating means and the oven is disposed directly beneath the cooktop. The range is a free-standing range where at least one side of the range is positioned against the side of a kitchen counter cabinet. A trim strip is provided to close the gap that exists between the side edge of the counter cabinet and the adjacent side edge of the cooktop to prevent soil from falling therein. The trim strip is an elongated member of generally T-shaped cross-section having a vertical shank and a horizontal crown, where the shank is adapted to enter the gap while the crown serves to bridge the gap and overlie the edge of the cooktop and the adjacent edge of



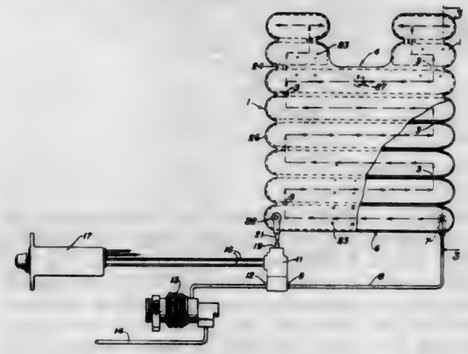
the counter cabinet. The shank of the trim strip has a series of vertical slits along the length thereof to form the shank into a plurality of resilient fingers that are alternately spread in opposite directions and exert an outward force against the side of the cooktop and the side of the edge of the counter cabinet.

3,446,202
RADIATOR MOUNTING ASSEMBLY FOR GAS WALL HEATER
Robert R. Cooper and Anthony M. Castello, Wichita, Kans., assignors to The Coleman Company, Inc., Wichita, Kans., a corporation of Kansas
Filed Sept. 2, 1966, Ser. No. 576,910
Int. Cl. F24c 3/04
U.S. Cl. 126—90 3 Claims



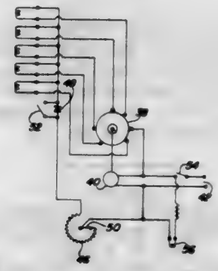
A mounting assembly for a gas wall heater which hermetically seals the combustion chamber of the heater from the room to be heated and firmly supports the radiator casing without metal-to-metal contact with the casing. The heater includes a support wall which is provided with a pair of vertically spaced openings. A non-combustible gasket provided with a central opening therethrough of a diameter smaller than the openings in the support wall is secured to the support wall about each of its openings. Each of the air inlet tube and the flue exhaust tube of the radiator casing, which has a diameter greater than the diameter of the gasket openings, is inserted through aligned openings of a gasket and the support wall, thereby compressing the gaskets between the radiator tubes and the support wall and firmly securing the radiator casing. A plurality of aligning brackets properly position the radiator casing and provide further support thereto, and a non-combustible washer is interposed between each bracket and the radiator casing.

3,446,203
PNEUMATIC STIMULATOR CUSHION
Norris N. Murray, San Bruno, Calif., assignor to H. Koch & Sons Inc., Corte Madera, Calif., a corporation of California
Filed Feb. 6, 1967, Ser. No. 614,292
Int. Cl. A61h 21/00, 1/00
U.S. Cl. 128—24.2 10 Claims



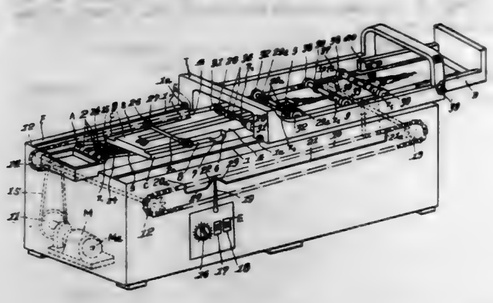
A pneumatic stimulator cushion having a series of cells which expand and contract seriatim as air under pressure is introduced from one end to the other end of the cushion and then exhausted back through the intake end, alternately in a predetermined cycle; the cells are connected by restricted openings between the cells so that the introduction or exhausting of air occurs in a progressive manner, which causes expansion or contraction of the overall bladder assembly, resulting in an undulating effect in both the vertical and horizontal planes of the cushion.

3,446,204
VIBRATORY MASSAGER WITH TRAVELING ACTION
Frank M. Murphy, 4120 W. Chicago Ave., Chicago, Ill. 60651
Filed Jan. 20, 1967, Ser. No. 610,622
Int. Cl. A61h 1/00
U.S. Cl. 128—33 9 Claims



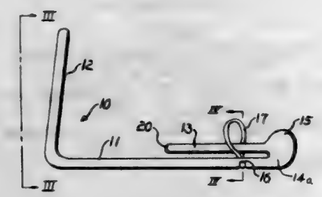
A traveling action vibratory massager consisting of a plurality of individual electrical vibrators mounted on a supporting surface of a chair or the like. Means such as a motor driven rotary switch is provided for operating the vibrators in timed sequence to provide the traveling action.

3,446,205
BED WITH MASSAGING ROLLERS
Teruaki Minohara, 1535, Kitabara-cho, Miyakonojo-shi, Miyazaki-ken, Japan
Filed May 11, 1966, Ser. No. 549,275
Claims priority, application Japan, May 20, 1965, 40/39,340
Int. Cl. A61h 15/00
U.S. Cl. 128—57 2 Claims



A bed for medical treatment has a first frame. A pair of rails are provided on the frame and movably support a second frame. A head support is provided on the first frame, as well as a back support and a scapula support. Roller elements mount the supports for rolling increment along the first frame and also effect rolling massage of the body of a person supported on these supports within the confines of the second frame when the latter, and thereby the person and the supports on which the person rests, are reciprocated relative to the first frame.

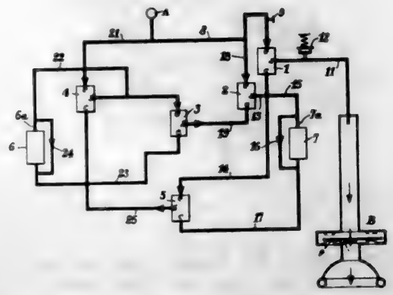
3,446,206
SURGICAL SPLINT
Artus D. De Lano, 17 Tennyson, Battle Creek, Mich. 49015
Filed Oct. 22, 1965, Ser. No. 500,535
Int. Cl. A61f 5/42
U.S. Cl. 128—79 14 Claims



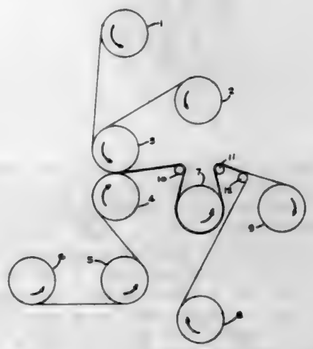
A splint having a support means for the generative organ of the human male, said support means extending substantially full length of the splint and having in combination therewith a penetrator means insertable into the outer end of the urethra of the male organ to stabilize the assembly under conditions of use.

3,446,207
CYCLING SYSTEM FOR RESPIRATOR
Robert Metivier, 49 Rue du Docteur Blanche, Paris 16, France
Filed Dec. 22, 1966, Ser. No. 603,923
Claims priority, application France, Dec. 28, 1965, 43,941
Int. Cl. A62b 7/00; F17d 3/00
U.S. Cl. 128—145.8 4 Claims

1. Generator of periodic fluid signals applied to a utilizing device, notably a respiratory mask, which comprises a source of fluid under pressure, first, second, third, fourth and fifth pneumatically controlled valves having each an inlet, an outlet and a control inlet, each valve being closed or open according as a fluid signal is respectively applied or not to the control inlet of the valve, the inlet, outlet and control inlet of said first valve being connected respectively to said source of fluid under pressure, to said utilizing device and to the outlet of said second valve, the inlet of said second valve being connected to the source of fluid under pressure and the control inlet of said second valve being connected to the outlet of said third valve, the inlet, outlet and control inlet of said fourth valve being connected respectively to the source of fluid under pressure, to the inlet of said third valve and to the outlet of said fifth valve, a first pneumatic time-lag device connected between the outlet of said fourth valve and the control inlet of said third valve and a second pneumatic time-lag device connected between the outlet of said second valve which is connected to the inlet of said fifth valve, and the control inlet of said fifth valve.



3,446,208
POROUS POLYOLEFIN GAUZE
Tomiichi Fukuda, Tokyo, Japan, assignor to Sumitomo Chemical Company, Limited, Osaka, Japan, a corporation of Japan and Alc Limited, Tokyo, Japan, a corporation of Japan
Filed June 27, 1966, Ser. No. 561,657
Claims priority, application Japan, Aug. 13, 1965, 40/49,429
Int. Cl. A61l 15/00; A61f 13/00; B32b 3/10
U.S. Cl. 128—156 2 Claims



A new and useful dressing comprising a cotton gauze on which is laminated a film of polyolefin such as polyethylene and polypropylene, said film having a plurality of small holes on the order of from 0.1 to 3 mm. in diameter. The dressing is prepared by continuously heating and pressing with rolls a perforated film of polyolefin, said film being overlapped with gauze on one side and with a sheet or film of low affinity with respect to the polyolefin on the other side; cooling the resulting laminate and thereafter removing the low affinity sheet or film.

3,446,209
DEVICE FOR FACILITATING SELF-INTRODUCTION OF MEDICINAL DROPS IN EYES
August Macha, 12019 Browning Ave., Cleveland, Ohio 44120
Filed Apr. 7, 1966, Ser. No. 540,946
Int. Cl. A61m 35/00
U.S. Cl. 128—233 4 Claims



The device comprises a shield with positioning means thereon which engage the head of a user, exclusive of the eye of the user, and position the shield in forwardly spaced aligned relation to the eye but out of contact therewith. The shield carries a guide which detachably engages and holds a medicinal eyedropper in alignment with, and directed toward, the center of the exposed eyeball, and with its discharge end close to, but spaced forwardly from, the surface of the eyeball. The positioning means may be a spectacle frame worn in the usual manner or it may be a rim on the shield which engages the head in the general region of the eye socket entrance.

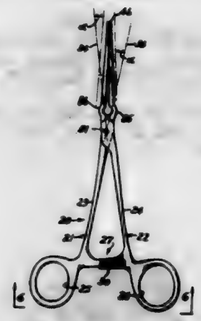
3,446,210
THERAPEUTIC DEVICE
William L. Bosak, Rte. 2, Frederic, Wis. 54837
Filed Oct. 27, 1964, Ser. No. 406,817
Int. Cl. A61f 7/00; A61m 3/00
U.S. Cl. 128—254 9 Claims



Elongated conduit means including an inlet portion adapted to be secured to a common hot and cold water outlet of a bath tub and an outlet end portion including a plurality of upwardly opening apertures with the conduit means being of a length to extend from the common water outlet of a bathtub to a point on the bottom of a tub upon which a person would normally be seated and the outlet end portion of the conduit means being of a cross-sectional size and shape adapted to rest upon the bottom of a bathtub and to be received in the crotch area of a patient seated on the bottom of the tube astraddle the outlet end portion of the conduit means.

3,446,211
SURGICAL CLAMP
Harold A. Markham, 6637 Drexel Ave., Los Angeles, Calif. 90048
Continuation-in-part of application Ser. No. 594,887, Nov. 16, 1966. This application Nov. 9, 1967, Ser. No. 685,235
Int. Cl. A61b 17/12, 17/28
U.S. Cl. 128—322 18 Claims

A surgical clamp which comprises a pair of pivotally joined members having a handle portion on one side of the pivot and a clamping portion on the other, the clamping portions being oppositely concave and convex, the chord of the convex member being shorter than the chord of the concave member. Each of the members includes a spacer portion between the pivot and its clamping portion so that the clamping portions incline toward each other at an angle which differs from the angles made by the handles. Initial closure thereby occurs at the free (distal) end instead of at the pivot end. A resilient, elongated grip element is fixed to the concave member so as to exert a resiliently yielding instead of a rigid force on the body being occluded.

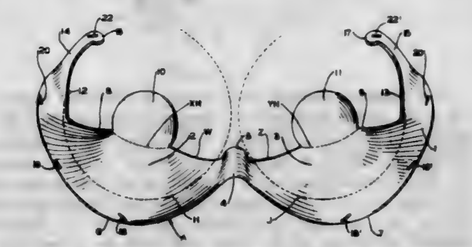


3,446,212
HEMOSTATIC CLIP AND APPLICATOR THEREFOR
Pierre L. Le Roy, Wilmington, Del., assignor to New Research and Development Laboratories, Inc., Wilmington, Del., a corporation of Delaware
Filed July 19, 1965, Ser. No. 473,055
Int. Cl. A61b 17/12
U.S. Cl. 128—325 7 Claims



A hemostatic clip includes a tubular body having an elongated slit extending completely thereacross with a pair of diametrically opposed slots extending from the end of the body inwardly, substantially halfway across the body. The slots are also disposed approximately 90 degrees from the longitudinal slit. A pivoting forceps type applicator is also provided for operatively placing the clip onto body wounds.

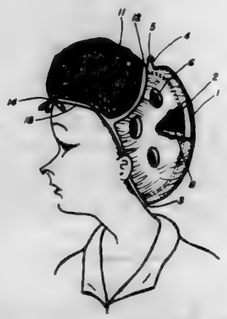
3,446,213
BRASSIERE
Cleo W. Goldman, 2517 Marigold St., Fort Worth, Tex. 76111
Filed Mar. 15, 1967, Ser. No. 624,664
Int. Cl. A41c 3/04, 3/06
U.S. Cl. 128—463 21 Claims



A brassiere constructed of plastic and including a center portion and a pair of breast supporting cups. Mounted

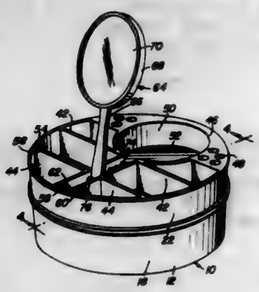
on the cups, either integrally or detachably, and projecting upwardly beyond the upper margins thereof are nipple covers. Flanges project upwardly from the extreme sides of the cups and are connected to shoulder straps at their ends.

3,446,214
HAIR RETAINER ISOLATOR
Joseph M. Eannarino, 610 Highland Ave., and Michael S. Granieri, Jr., 1805 N. James St., both of Rome, N.Y. 13440
Filed June 29, 1966, Ser. No. 561,459
Int. Cl. A45d 8/40
U.S. Cl. 132—49 4 Claims



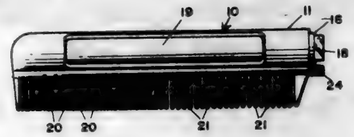
An inflatable dual wall diaphragm hair retainer with ventilation between the hair and inner wall of the diaphragm provided by a vented material and strings or lace for securing the hair retainer to the head of the user.

3,446,215
COMPARTMENTALIZED COSMETIC TRAY
Robert F. Howe, 96 Exchange St., Leominster, Mass. 01453
Filed Oct. 18, 1966, Ser. No. 587,533
Int. Cl. A45d 33/26
U.S. Cl. 132—83 7 Claims



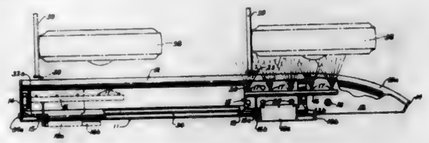
A compartmentalized tray having a rotatable supporting base and a plurality of compartments defined by a peripheral wall and partition walls. One compartment is shaped to receive a hand mirror which forms a closure for that compartment with the mirror compartment also including supports for supporting the handle of the hand mirror in a manner to position the mirror in different angular positions so that the tray may be placed on a dressing table or the like so that various cosmetic articles are readily accessible to the person using the device.

3,446,216
HAIR GROOMING COMB
Gregory J. Sala, 120 E. 55th St., Hialeah, Fla. 33012
Filed Apr. 3, 1967, Ser. No. 627,908
Int. Cl. A45d 24/22
U.S. Cl. 132—116 2 Claims



A hair grooming comb for dispensing a hair grooming fluid to the hair during the combing operation consisting of a cylindrical member having a reservoir, a filler cap mounted at one end of the cylindrical member, the cylindrical member being thinner walled at the mid-portion to permit flexing the side walls, a plurality of teeth in coplanar relation mounted along one side of the cylindrical member, a portion of the teeth being fine while the remainder of the teeth being coarse, a plurality of bores communicating with the reservoir positioned between the coarse teeth, and a slide valve controlling the discharge of fluid from the reservoir.

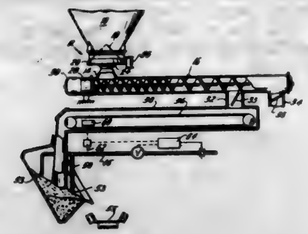
3,446,217
AUTOMATIC CAR WHEEL WASHING APPARATUS
George A. Collier, 10031 Fontana Lane, Overland Park, Kans. 66207
Filed Sept. 26, 1967, Ser. No. 670,724
Int. Cl. B60s 3/04
U.S. Cl. 134—45 10 Claims



A wheel washing apparatus which is usable in conjunction with automatic car washes. A car entering the wash stall institutes a wheel cleaning spraying action against the outside of the front wheels, same being continued until the car reaches a predetermined position with the stall. Upon reaching said position, the spray is directed against the rear wheels by movement of nozzle carriages to a position adjacent the rear wheels. The carriages' forward movement is facilitated by the front wheel contacting and moving laterally extending push rods, which pivotally connect with each carriage, until the predetermined position of each carriage is reached within the stall. These rods are then depressed to the floor, the wheels rolling thereover, and the carriages returned to the rear wheel spraying position.

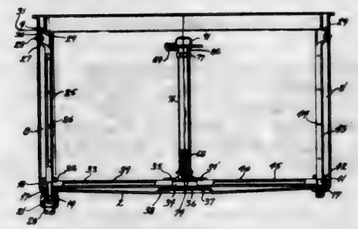
3,446,218
AGGLOMERATING FINELY DIVIDED MATERIAL
Harold T. Stirling, Pittsburgh, Pa., assignor to Stirling Sintering Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 22, 1966, Ser. No. 536,348
Int. Cl. B01f 5/18, 9/02
U.S. Cl. 134—57 6 Claims

Method and apparatus for handling and wetting dry finely divided particulate material including feeding the finely divided material through a dust-tight device to a previously wetted bed of material and feeding the dry



particulate material directly into the bed of material below its surface to obtain better wetting while simultaneously avoiding atmospheric pollution.

3,446,219
DISHWASHING MACHINE
George L. Hilleman, St. Louis County, Mo., assignor to Vulcan Manufacturing Company, Inc., St. Louis, Mo., a corporation of Missouri
Filed Jan. 3, 1967, Ser. No. 606,833
Int. Cl. A47l 15/23, 15/44
U.S. Cl. 134—100 11 Claims



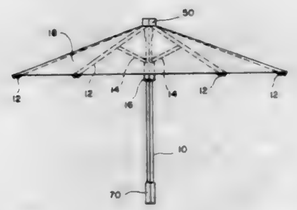
A dishwashing machine having a tub with vertical recesses for receiving spray pipes with deflector caps at the upper ends of said pipes; there being a centrally located rotating spray head connected to said spray pipes by horizontal spray tubes with a deflector cap provided on the upper end of said spray head. A detergent pipe provided in one of the recesses of said tub for receiving water at its lower end whereby detergent may be entrained and discharged through a horizontal spray pipe.

3,446,220
READILY ACCESSIBLE ROOFTOP CARRIER
Francis A. Schafer, 2916 Riverside Drive, McHenry, Ill. 60050
Filed Feb. 21, 1967, Ser. No. 617,680
Int. Cl. E04f 10/06
U.S. Cl. 135—5 15 Claims



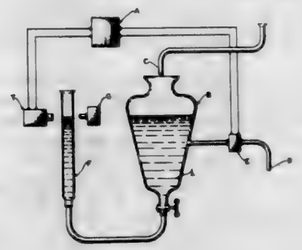
A carrier which is especially constructed for mounting on the roof of a mobile house trailer or camper comprises a supporting frame having a track by which an article-carrying frame is movable on wheels to be swung between a horizontal top position and a downwardly hanging position at one side of the vehicle to facilitate loading and unloading. On the carrying frame is a roll-up awning which may protectively cover articles on the carrier, or serve as an awning or canopy alongside the vehicle when the carrying frame is fully or partially drawn out on its track.

3,446,221
PAPER UMBRELLA
Martha I. Truitt, 1622 Abingdon Drive, Alexandria, Va. 22314
Filed Mar. 11, 1968, Ser. No. 711,978
Int. Cl. A45b 13/00, 23/00
U.S. Cl. 135—19.5 6 Claims



A disposable umbrella is formed substantially entirely of paper and cardboard. The mast, struts, and ribs are constructed of tubular structural elements, triangular in cross-section, formed of folded cardboard. The ribs include a pair of these triangular elements in a unitary structure with a V-shaped groove provided therebetween. The struts are formed of single triangular elements and include end extensions, at one end, received in the V-shaped grooves of corresponding ribs and end tabs, at the other end, secured within a sleeve slidable along the mast. The mast is formed of a bundle of hollow triangular structural elements.

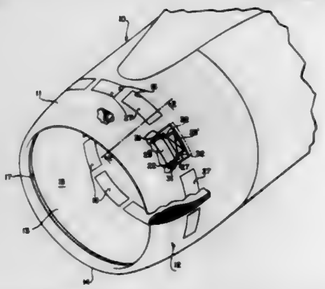
3,466,222
LIQUID LEVEL CONTROLLERS
George E. Barker, St. Louis, Mo., assignor to Monsanto Company, a corporation of Delaware
Original application Nov. 13, 1963, Ser. No. 323,383, now Patent No. 3,311,834, dated Mar. 28, 1967. Divided and this application Dec. 7, 1966, Ser. No. 599,926
Int. Cl. F17d 1/00, 3/00; F16k 21/18
U.S. Cl. 137—2 13 Claims



A liquid level controller for maintaining a relatively constant liquid level within a vessel having changing liquid input quantities. A solenoid actuable valve is disposed in the output line of the vessel and adapted to open and close in response to control signals from the liquid level controller. A level sensory mechanism is operatively associated with the vessel and is connected to the liquid level controller. The time proportioning controller also

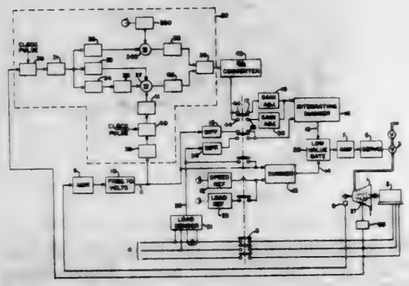
includes a false signal producing means which applies a false level signal to the control valve at comparatively rapid time intervals to effect a time proportioning action and thereby causing comparatively rapid valve operation.

3,446,223
AIR INTAKE FOR GAS TURBINE ENGINES
John P. Hancock, Marietta, Ga., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Feb. 4, 1966, Ser. No. 525,063
Int. Cl. F02b 27/00
U.S. Cl. 137—15.2 10 Claims



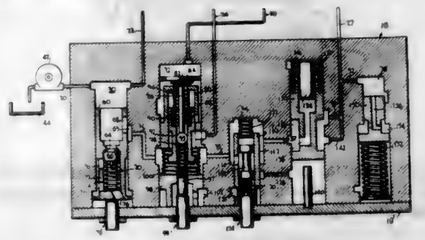
A double slotted inlet is designed to maximize total pressure recovery for a given size and weight in the static and low speed operating range without penalizing cruise performance. It accomplishes this objective by drawing in ambient air through an auxiliary inlet system and injecting it into a main duct system at two widely separated key positions. Thus, it provides an improvement of single slotted performance in the same manner that a double slotted flap system provides a higher maximum lift coefficient than a single slotted flap. As an added feature, a single door system supplies the two separate slots at different locations in the ducts.

3,446,224
ROTOR STRESS CONTROLLED STARTUP SYSTEM
Everett E. Zwicky, Jr., Latham, N.Y., assignor to General Electric Company, a corporation of New York
Filed Jan. 3, 1967, Ser. No. 606,843
Int. Cl. F01d 17/00
U.S. Cl. 137—26 12 Claims



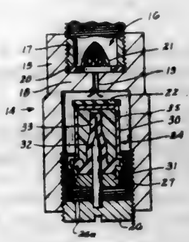
Startup and loading of steam turbine is controlled by simulated rotor bore and surface stresses derived by analog or digital means from temperature and speed measurement.

3,446,225
CONTROL VALVE SYSTEM
Miles A. Townsend, Rockford, Ill., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Jan. 6, 1967, Ser. No. 607,857
Int. Cl. F01b 25/06, 25/14; F01d 19/00
U.S. Cl. 137—28 7 Claims



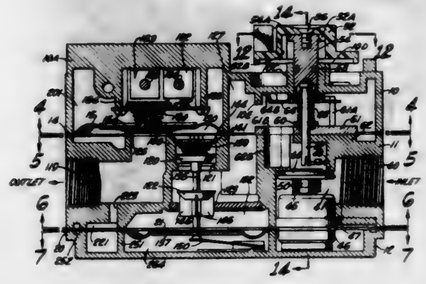
An apparatus for regulating the speed of a driven shaft by supplementing the normal governor speed control of a fluid driven prime mover. A system of hydraulic valves is arranged to lubricate the shaft and to operate a servo mechanism in accordance with the variation in bearing pressure of the hydraulic fluid and the servo mechanism overrides the governor speed control of the driven shaft.

3,446,226
AUTOMATIC HYDRANT DRIPPING APPARATUS
Howard M. Canterbury, 6306 Schevers, Houston, Tex. 77017
Filed Mar. 22, 1967, Ser. No. 625,180
Int. Cl. F16k 21/02; E03b 9/14
U.S. Cl. 137—62 2 Claims



Automatic hydrant dripping apparatus for attaching to an outside water hydrant to permit a small stream of water to flow from the hydrant when the ambient temperature is near or below the freezing temperature of water. The apparatus includes a housing for attaching to the faucet of the water hydrant. The housing has a passageway through which the water from the hydrant must flow. A flow restriction is located in the passageway to prevent the loss of an excessive amount of water and allow only such amount of water as is necessary to prevent freezing to flow through the passageway. A valve element is located downstream of the flow restriction. A temperature sensitive element is located downstream of the valve element to hold the valve element in sealing engagement with the partition to close the flow restriction when the temperature is above freezing. The temperature sensitive element contracts as the ambient temperature drops to a point near the freezing temperature of water to permit the valve element to move out of sealing engagement with the partition and allow the flow of water through the orifice. An adjusting nut is provided to set the apparatus to open at a preselected ambient temperature.

3,446,227
FLUID CONTROL APPARATUS
Richard D. Grayson, Arcadia, Calif., assignor, by mesne assignments, to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland
Filed Feb. 6, 1964, Ser. No. 343,056
Int. Cl. F23d 5/16, 13/26
U.S. Cl. 137—66 12 Claims



3. In a control of the character described, a casing having a gas inlet, a main gas outlet and a pilot gas outlet; a valve structure controlling gas flow from said inlet to said outlets; said valve structure including: a flat apertured valve seat in communication with said inlet; a flat rotatable valve element on said seat and incorporating means, in a first position thereof, for preventing gas flow to said outlets and incorporating means, in a second position thereof, to communicate said inlet to said pilot gas outlet and incorporating means, in a third position thereof, to communicate said inlet to said main gas outlet; knob means mounted on said casing for both rotatable and axial movement thereon, first resilient means acting between said valve element and said knob means to normally urge said valve element against said seat; an operating connection between said knob means and said flat valve element for rotating the same; an electromagnetically maintainable safety valve in the fluid flow path between said inlet and said outlets comprising: an electromagnetic structure mounted on said casing; a safety valve seat in said casing; a movable valve member; second resilient means urging said valve member to normally engage said safety valve seat to close said safety valve; an operating element between said knob means and said movable valve member to move it from its seat upon inward movement of said knob means; said casing including two separable sections with said flat valve seat being coplanar with the outer surface of one of said casing sections; said one casing section having a second valve seat coplanar with said first valve seat; a diaphragm valve member cooperating with said second seat for controlling flow between said valve structure and main outlet and having one side communicating with said flow path at the outlet side of said valve structure and having the other side thereof, defining one wall of an expansible chamber in the other of said casing sections; and means for alternately intercommunicating said chamber with the fluid flow path at the outlet side of said valve structure or for venting said chamber.

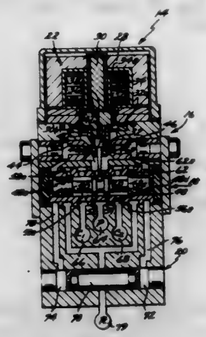
3,446,228
OPPOSED JET PURE FLUID AMPLIFIER
Ronald D. Stouffer, Bel Air, and John W. Gerber, Baltimore, Md., assignors to Martin-Marietta Corporation, New York, N.Y., a corporation of Maryland
Filed Oct. 19, 1966, Ser. No. 587,886
Int. Cl. F15c 1/10, 1/12
U.S. Cl. 137—81.5 8 Claims

Opposed, coaxial power streams are emitted from opposite ends of an "hourglass" shaped interaction chamber. Two sets of outlet ports straddle the power stream inlets, one set at each end of the chamber, and are formed in part by extensions of the curved chamber wall. At least



one pair of control stream passages open into the chamber, and the particular outlets into which the impacting power streams are directed are selectively controlled by the control streams.

3,446,229
HYDRAULIC SERVOSYSTEM
Donald C. Howland, Costa Mesa, Calif., assignor to Cadillac Gage Company, Detroit, Mich., a corporation of Michigan
Filed May 12, 1966, Ser. No. 549,691
Int. Cl. F15c 3/00; G05d 16/20
U.S. Cl. 137—85 5 Claims



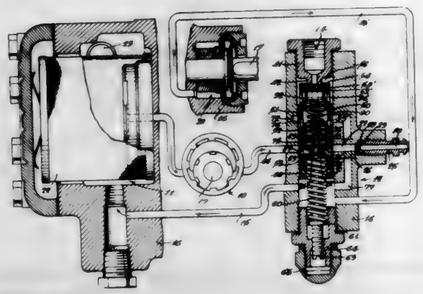
This is an improved hydraulic servosystem wherein relatively small changes in electrical current flow through an electromagnetic operator effects predetermined accurate changes in the control function of a flow control device.

It is characterized by requiring the fluid controlled by the valve member to flow around such member prior to its entering the flow control orifice. More specifically, the source of fluid pressure is so oriented with respect to the valve or flow control member that the flow of fluid is not in opposition to the magnetic force attempting to locate the precise position of the flow control member but rather is additive to such magnetic force. Thus, the valve member is upsteam of the flow control orifice.

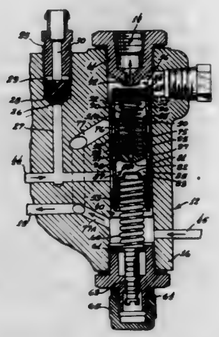
3,446,230
FUEL REGULATING VALVE
Nils E. Swedberg, Rockford, Ill., assignor to Sundstrand Corporation, a corporation of Delaware
Filed June 13, 1966, Ser. No. 557,056
Int. Cl. F16k 11/22; F02m 55/00
U.S. Cl. 137—108 18 Claims

A fuel burner regulating valve including a main valve

for regulating the supply of fuel to a burner nozzle and a flow responsive valve upstream and in series with the main valve for bypassing fluid from the main valve until a predetermined flow rate is achieved.



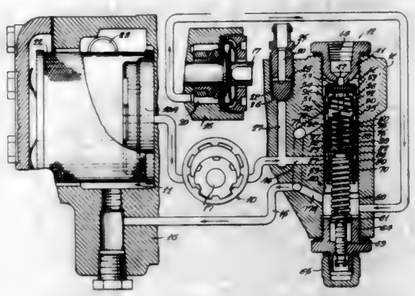
3,446,231
OIL BURNER VALVE
Karl G. Magnusson, Vendelsoe, Sweden, assignor, by mesne assignments, to Sundstrand Corporation, a corporation of Delaware
Filed Nov. 25, 1966, Ser. No. 597,134
Int. Cl. G05d *7/00, 9/00*
U.S. Cl. 137—108 15 Claims



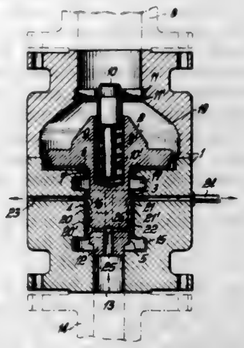
A fuel oil regulating valve between a fuel pump and a burner nozzle including a flow responsive valve upstream of the regulating valve for achieving a high start-up r.p.m. and a high cut-off r.p.m. with an additional valve upstream of the flow responsive valve for limiting the pressure drop thereacross to a predetermined value regardless of pump discharge rate so that an unnecessarily high back pressure is not imposed upon the pump.

3,446,232
FUEL REGULATING VALVE
Robert W. Erikson, Rockford, Ill., assignor to Sundstrand Corporation, a corporation of Delaware
Filed Sept. 15, 1967, Ser. No. 667,949
Int. Cl. G05d *7/00*; F04b *49/08*
U.S. Cl. 137—117 7 Claims

An oil burner regulating valve for controlling the flow of fuel to burner nozzles with a flow responsive valve in the regulating valve for controlling the flow of fuel from a pump to the regulating valve to provide high pump r.p.m. start-up and cut-off of the fuel supply by the regulating valve, in combination with a bleed passage in the flow responsive valve for providing high cut-off r.p.m. when the flow responsive valve sticks.



3,446,233
VALVES FOR CENTRIFUGAL PUMPS
Wilhelm Hans Herold and Gustav Ernst Rubi, Baden-Wurttemberg, Germany, assignors to Werner & Pfleiderer, Stuttgart-Feuerbach, Germany, a corporation of Germany
Filed Nov. 15, 1966, Ser. No. 594,560
Claims priority, application Germany, Nov. 25, 1965, W 40,372
Int. Cl. F04b *49/08, 49/02*; F04d *15/00*
U.S. Cl. 137—119 7 Claims

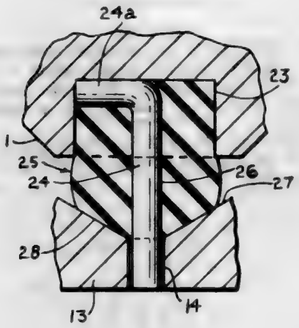


A pressure responsive valve for centrifugal pumps to allow bypass flow when the pump output pressure falls below predetermined value wherein a single movable valve element having plural seating surfaces automatically controls the flow between a valve inlet and outlet and the inlet and bypass as required.

3,446,234
VALVE DISPOSING ORIFICE CLEANER IN ORIFICE AS STEM TIP IS COMPRESSED-SEATED
William Hungate, 1315 Waugh Drive, Houston, Tex. 77019
Filed Apr. 14, 1966, Ser. No. 542,558
Int. Cl. F16k *1/36, 1/44, 29/00*
U.S. Cl. 137—244 6 Claims

A valve body has a stem resiliently urged seated on a counterbored and countersunk valve seat; a stem tip being

deformable except for a small, rigidly extending clean-out rod extending through the counterbore. Thus, when seated, the deformed tip seals the countersunk surface while the clean-out rod extends through, and cleans the small counterbore.

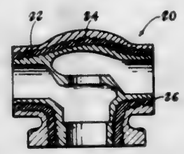


3,446,235
HOSE-HANDLING APPARATUS, SELF-PROPELLED, WITH HORIZONTAL DRUM
Shayne Linderman, Clementsville, Idaho (Newdale, Idaho 83436)
Filed June 13, 1966, Ser. No. 557,316
Int. Cl. B60p *3/30*
U.S. Cl. 137—344 10 Claims



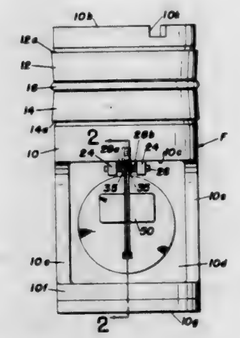
An apparatus for winding and unwinding hose, including a frame with drum means on it and guide means for lifting the hose from the ground including cantilever means which consists of a truss structure pivotally connected to the apparatus and ram means operatively connected to the structure to raise and lower it.

3,446,236
FOUNDRY TECHNIQUE FOR THE MANUFACTURE OF HEAVY WALL THICKNESS VALVES AND FITTINGS FOR NUCLEAR APPLICATION
Robert R. Waltien, 8935 116th St., Richmond Hill, N.Y. 11418
Filed Jan. 26, 1966, Ser. No. 523,510
Int. Cl. F16l *59/16*; F16k *51/00*
U.S. Cl. 137—375 1 Claim



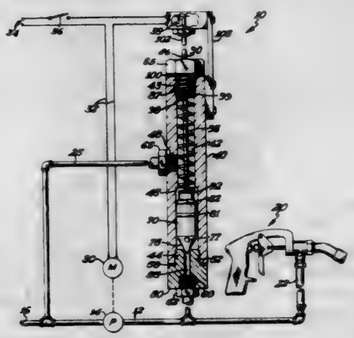
A lamellar casting founded in comparatively thin layers, each one fused to the preceding and succeeding layer, each layer formed by a separate pouring. The outer surface of each layer other than the outermost layer being cast with tapered thin-edged ridges or flutes. Prior to each of the pourings, following the first, the previously founded casting is treated to attain a high quality bond.

3,446,237
DRILL PIPE FLOAT VALVE
William L. Haley, 146 Beadle Road, Lafayette, La. 70501
Filed Apr. 3, 1967, Ser. No. 628,080
Int. Cl. F16k *15/18*
U.S. Cl. 137—463 3 Claims



A float valve for use with drill pipe in a well wherein the valve is maintained in an open position while lowering the pipe in the well to thereby automatically fill the pipe with drilling mud or fluid, and wherein such valve is adapted to be closed with pressure fluid which is under the control of an operator at the surface of the well for effecting a subsequent floating of the drill pipe or for closing the drill pipe due to an incipient blowout or for any other reason.

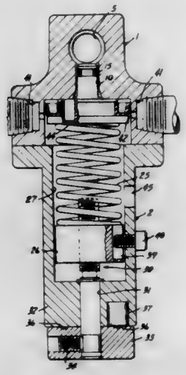
3,446,238
PRESSURE ACTUATED VALVE
Iven R. Norstrud and John H. Threlkeld, Britt, Iowa, assignors to Britt Tech Corporation, Britt, Iowa, a corporation of Iowa
Filed Oct. 6, 1964, Ser. No. 401,839
Int. Cl. F16k *17/20, 31/14*; G05d *7/00*
U.S. Cl. 137—469 6 Claims



The disclosure is directed to an improvement in a relief valve construction which is used primarily with a pressure washer. The improvement lies in the increased ability of the piston in the relief valve to "snap" between

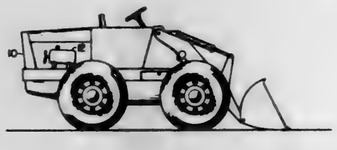
the open and closed positions by allowing the liquid to pass through passages formed in the piston. All of the liquid which is by-passed, passes through a restricted passage in the piston. The control member is also actuated by the piston and is used to control a switching device.

3,446,239
PRESSURE CONTROL VALVE
Karl A. Klenz, Oakland, Calif., assignor to Rheem Manufacturing Company, New York, N.Y., a corporation of California
Filed Jan. 3, 1967, Ser. No. 607,032
Int. Cl. F16k *17/30*
U.S. Cl. 137—469 4 Claims



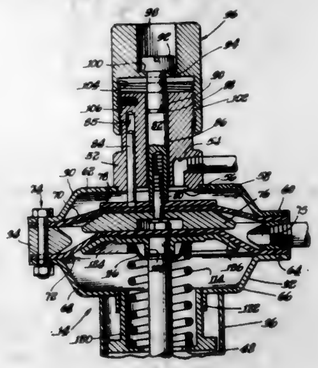
A valve adapted for use in hydraulic and pneumatic circuits which is spring loaded to open at a predetermined adjustable inlet pressure to divert fluid flow to a part of the circuit. The valve structure is designed to provide a fast action when the predetermined pressure is reached.

3,446,240
HYDROSTATIC TRANSMISSION
Carl E. Schou, Bloomfield Hills, Mich., assignor to North American Rockwell Corporation, a corporation of Delaware
Original application Dec. 31, 1964, Ser. No. 422,652. Divided and this application Dec. 8, 1966, Ser. No. 600,198
Int. Cl. F16k *25/00*; B60k *23/00*
U.S. Cl. 137—495 10 Claims



A valve structure particularly useful in a hydrostatic transmission or the like comprising a sleeve axially slidable in a bore of a valve housing and a spool valve slidably mounted in the sleeve with spaced spool sections defining a chamber within the sleeve. Spring means in the bore bias the sleeve in one direction and axially spaced sets of slots in the sleeve wall connect the sleeve chamber with inlet and outlet ports in the housing. The spool valve has operator means extending through one end of the housing for external operation thereof and the sleeve has axially facing differential area means responsive to the fluid pressure in the sleeve chamber for shifting the sleeve in the direction opposite to that in which it is urged by the spring means.

3,446,241
FLOW CONTROL VALVE WITH PLURAL DIAPHRAGM OPERATOR
Sigmund P. Skoli, Elmwood Park, Ill., assignor to Mojonnier Bros. Co., Chicago, Ill., a corporation of Illinois
Filed Aug. 28, 1967, Ser. No. 663,610
Int. Cl. E03b *7/07*; F16k *37/00*; F17d *3/00*
U.S. Cl. 137—553 5 Claims



A fluid-actuated valve operator in which a pair of valve casings and a medially disposed spacer ring define a diaphragm chamber. Flexible diaphragms are secure respectively between each of the casings and the spacer ring. One of the casings and the spacer ring are perforated to admit control fluid for selectively manipulating the two diaphragms and thereby the associated valve element.

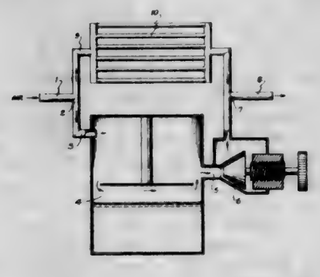
3,446,242
WATER FLOW REGULATING AND WARNING SYSTEM
Dale A. Weum, Minneapolis, Minn., assignor to Red Owl Stores, Inc., Hopkins, Minn., a corporation of Delaware
Filed May 13, 1966, Ser. No. 549,890
Int. Cl. F16k *37/00*
U.S. Cl. 137—557 5 Claims



An elongated tubular restricting member having a radially outwardly flared inlet opening and a beveled or

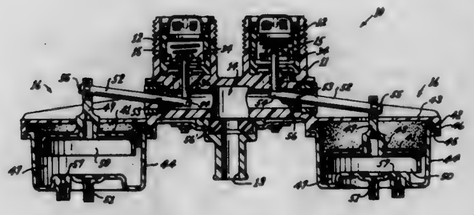
radially outwardly tapered outlet opening at the opposite end, mounted coaxially within a water carrying conduit by an imperforate mounting member to restrict the flow of water through the conduit to a predetermined amount while reducing the fouling of the inlet end by foreign objects and mineral deposits and the like at the outlet end to a minimum. Further, the system includes two such regulating devices mounted within a conduit in axially spaced apart relationship to form a chamber therebetween with a pressure sensitive device therein to indicate any reduction in flow beyond the predetermined amount.

3,446,243
NARCOSIS APPARATUS
Josef Haupt, Lubeck, Germany, assignor to Otto Heinrich Drager, Lubeck, Germany
Filed Dec. 12, 1966, Ser. No. 601,030
Claims priority, application Germany, Jan. 7, 1966, D 49,090
Int. Cl. B01f *3/02*; A61m *17/00*
U.S. Cl. 137—599.1 1 Claim



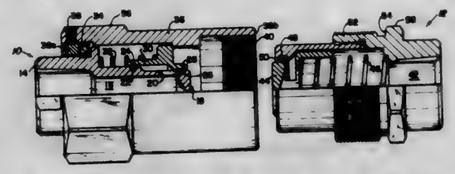
A plurality of tubes connected in parallel is used as a throttle in the by-pass line of a vaporizer.

3,446,244
FLUIDIC CONTROLLED WATER VALVE OR THE LIKE AND PARTS THEREFOR
Roland D. Beck, La Crescenta, Calif., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed June 8, 1966, Ser. No. 556,049
Int. Cl. F16k *11/22*, *31/145*
U.S. Cl. 137—606 12 Claims



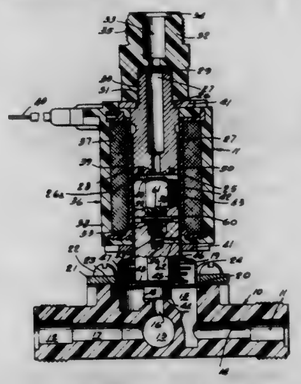
This disclosure relates to a water valve having a valve seat member disposed between the inlet and outlet therof and being provided with a flexible internal flange which is flexed in an unconstrained manner by a valve member seating against the valve seat flange and being forced thereagainst by the pressure of the fluid in the inlet whereby such free flexing of the resilient flange prevents adverse "water-hammer."

3,446,245
THREADED FLUID COUPLING
Clifford H. Snyder, Jr., Coraopolis, Pa., assignor to SRM Company, a corporation of Pennsylvania
Filed Feb. 28, 1966, Ser. No. 530,504
Int. Cl. F16l *29/00*, *37/28*
U.S. Cl. 137—614.03 1 Claim



A threaded coupling is disclosed in which the sleeve which is rotated to threadingly secure the coupling together is supported by ball bearings on the housing of the coupling. The ball bearings facilitate rotation of the sleeve to connect the coupling and also permit the sleeve to the body of the coupling to permit swiveling of the coupling under pressure.

3,446,246
FLOW ADJUSTMENT VALVE
William G. Huley, Palatine, Ill., assignor to The Dole Valve Company, Morton Grove, Ill., a corporation of Illinois
Filed Jan. 18, 1966, Ser. No. 521,287
Int. Cl. F16k *11/04*, *31/06*
U.S. Cl. 137—625.5 2 Claims



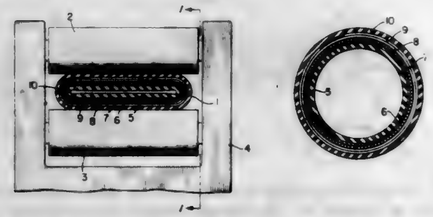
A flow adjustment valve having a pair of valve heads disposed at opposite end of a solenoid operated armature. One of the valve heads consists of a spring loaded piston which is disposed within a bore formed within the armature. Energizing of the solenoid moves the armature against a valve seat opening one of the valve heads and contacting the spring loaded piston against a second valve seat thereby eliminating chatter in the operation of the armature.

3,446,247
HOSE
Loran E. Manning, Medina, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Apr. 21, 1966, Ser. No. 544,300
Int. Cl. F16l *11/08*
U.S. Cl. 138—119 10 Claims

1. A flexible hose for use between parallel pinch rollers on lineal actuator devices comprising:
(A) an inner tube of elastomeric material;
(B) at least one layer of flexible longitudinal, reinforcement strands surrounding the tube, said strands having low elongation properties;

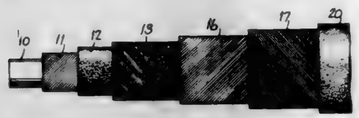
(C) at least one layer of circumferentially wrapped reinforcement strands having higher elongation properties than the longitudinal strands;

(D) the elastomeric portion of said hose being vulcanized to form an integral whole with the reinforcement layers embedded therein; and



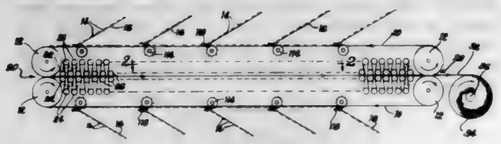
(E) the longitudinal reinforcement strands preventing longitudinal elongation of the hose when used on a lineal actuator and the circumferential strands permitting the hose to expand radially under internal pressure to act upon the pinch rollers of the lineal actuator to move it in a longitudinal direction along the hose.

3,446,248
REINFORCED HOSE
Irving D. Press, West Orange, N.J., assignor to Resistoflex Corporation, Roseland, N.J., a corporation of New York
Filed June 20, 1967, Ser. No. 647,398
Int. Cl. F16l *11/00, 11/16, 11/12*
U.S. Cl. 138—133 **9 Claims**



The reinforcement for a hose with a PTFE liner has a first spiral wrap of metal wire covered with an elastomeric layer followed by at least two additional metal reinforcing layers without an intervening elastomeric layer and with the innermost of the two additional layers being a spiral wrap.

3,446,249
WEAVING MACHINE SYSTEM
Lester R. Wellman, 110 Lakewood, Highland Park, Ill. 60035
Filed May 12, 1966, Ser. No. 549,680
Int. Cl. D03d *41/00*
U.S. Cl. 139—11 **22 Claims**



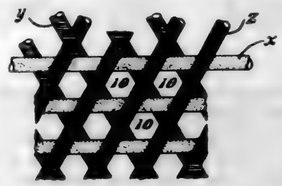
In a weaving machine, longitudinal threads are interwoven with transverse threads in a weaving plane, the transverse threads being moved along the weaving plane by their ends, and for a length of travel are restricted in all but a forward direction, the ends of alternate threads being moved forward in diverging directions through wave paths extending above and below the weaving plane forming side openings, thus controllably compacting thread spacing at the restriction area and longitudinal threads being inserted through said side openings and trapped progressively outwardly toward the ends of the transverse threads, the longitudinal threads being trapped by the crossing alternate transverse threads to form a woven web moving generally along the weaving plane.

3,446,250
TEMPLE FOR LOOMS
Erwin Pfarrwaller, Winterthur, Switzerland, assignor to Sulzer Brothers Limited, Winterthur, Switzerland, a Swiss company
Filed May 26, 1967, Ser. No. 641,649
Claims priority, application Switzerland, May 27, 1966, 7,791/66
Int. Cl. D03j *1/22;* **D06c** *3/06*
U.S. Cl. 139—294 **4 Claims**



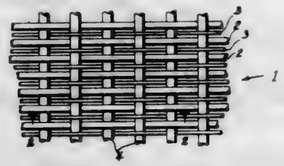
There is disclosed a loom having on the cloth side of the beat-up position of the reed a temple comprising a bar extending crosswise of the loom. The bar has a slot therein in which is loosely disposed a rod whose diameter is larger than the width of the mouth of the slot, and the cloth passes from the fell thereof into the slot, around the major portion of the periphery of the rod and out of the slot in its passage toward the cloth beam. The rod is provided, in the portions thereof engaged by the edges of the cloth, with threads of opposite hand so selected that the relative movement between the cloth and the rod, as the cloth slips over the latter, tends to stretch the cloth laterally outward away from the center of the web of cloth. This relative motion may be due entirely to the motion of the cloth, the rod being stationary, or it may be due in part to rotation of the rod with respect to the loom frame, the rod rotating either continuously or intermittently at each pick, to move its periphery in either the same direction as that of the cloth in contact therewith or in the opposite direction. In embodiments in which the rod rotates with respect to the loom frame, its rate of rotation is chosen to produce relative motion between it and the cloth, and the handedness of the threads with reference to the passage of the cloth over the rod is chosen accordingly to produce lateral stretching of the cloth.

3,446,251
TRIAXIAL FABRIC
Norris F. Dow, Radnor, Pa., assignor to General Electric Company, a corporation of New York
Continuation-in-part of application Ser. No. 515,028, Dec. 20, 1965. This application Apr. 23, 1968, Ser. No. 725,585
Int. Cl. D03d *13/00*
U.S. Cl. 139—383 **23 Claims**



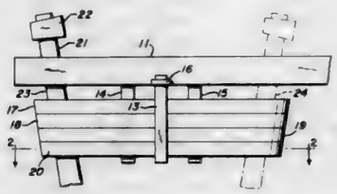
Fabrics of this invention comprise three angularly displaced sets of parallel courses of yarn, interwoven to prevent slippage of at least one yarn course set along any other yarn course set. The interweaving may be such as to prevent slippage of all three yarn course sets. Each yarn course may comprise one or more individual strands of yarn. Fabrics woven in this manner are substantially isotropic, i.e. their strength and resistance to stretching or shearing forces in a plane of the fabric is relatively constant regardless of the direction of force application.

3,446,252
BELT FABRIC
Daniel W. Maxham, Austell, Ga., assignor to Uniroyal, Inc., New York, N.Y., a corporation of New Jersey
Filed Sept. 5, 1967, Ser. No. 665,466
Int. Cl. D03d *15/00*
U.S. Cl. 139—420 **10 Claims**



A fabric having first and second warp yarns of different breaking strength. The percentages of crimp of each being chosen of such magnitude that both said first and said second warp yarns will substantially simultaneously reach their individual breaking loads when an increasing tensile load is applied to the fabric so that the fabric exhibits optimum tensile strength characteristics for the materials employed.

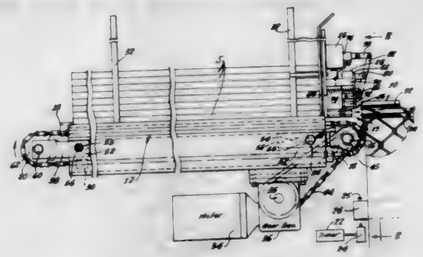
3,446,253
PICKER STICK CHECKING MECHANISM
Emory L. Howell, Greenville, S.C., assignor to Dayco Corporation, Dayton, Ohio, a corporation of Delaware
Filed Mar. 16, 1966, Ser. No. 534,866
Int. Cl. D03d *49/40, 49/36*
U.S. Cl. 139—161 **7 Claims**



A picker stick checking mechanism comprising a plurality of rigid endless check straps having different circumferences mounted in superimposed relationship, and the uppermost of said straps has a greater circumference than the lowermost of said straps. The picker stick simultaneously contacts all of the said straps.

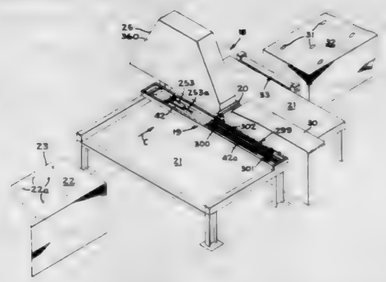
3,446,254
FABRICATION OF WOVEN WIRE FENCING INCORPORATING SLATS
Herbert E. Rohrbacher, Whittier, Calif., assignor to Bergandi Manufacturing Company, Inc., El Monte, Calif., a corporation of California
Filed Aug. 7, 1967, Ser. No. 658,819
Int. Cl. B21f *29/02*
U.S. Cl. 140—27 **19 Claims**

As chain link fencing is fabricated in a step-by-step manner, slats from a supply magazine are automatically inserted transversely of the advancing fencing to result in a fence structure suitable for dividing highways. Retractable guide heads for introducing the leading ends of



the slats into the fencing are operated automatically with safeguards to halt the operation of the machine in the event of malfunctioning.

3,446,255
SCANNER LOCKOUT MECHANISM
Arthur L. McGee, San Jose, and Donald William Irving, Los Gatos, Calif., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed May 1, 1967, Ser. No. 635,221
Int. Cl. B27d *5/00;* **B27c** *9/00*
U.S. Cl. 144—2 **11 Claims**

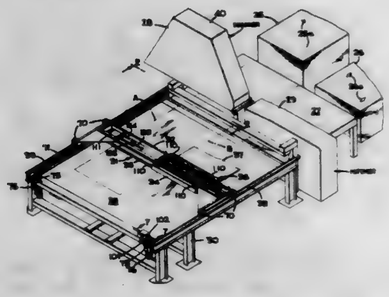


A sheet patching machine having a conveying system for rapidly moving veneer sheets along a linear path through a defect scanner that is disposed in transverse alignment with a plywood patcher. A control system associated with the conveying systems and responsive to the position and shape of the sheet being scanned for defects to prevent detected defects near any of the marginal edges of the sheet to interrupt the normal forward movement of the sheet, while detected defects disposed inwardly of the sheet a predetermined distance from each marginal edge will stop the defect on the scanning plane and will thereafter effect movement of the detected defect into axial alignment with the patching head.

3,446,256
POSITIONING MECHANISM
Thomas E. Roberts, Jr., Saratoga, and Robert K. Houston, Santa Clara, Calif., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed May 1, 1967, Ser. No. 635,238
Int. Cl. B27m *3/00;* **B27d** *5/00;* **B62d** *5/02*
U.S. Cl. 144—2 **10 Claims**

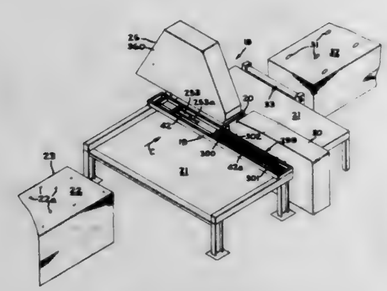
An automatic plywood patching machine has a scanner to detect defects and a patcher laterally spaced

therefrom to patch the defects. The plywood is moved longitudinally under the scanner by travel of a longitudinal carriage which has a cross carriage thereon to carry the plywood to and from the patcher. A cam mechanism, resting in a null position, is connected to the drive system of the longitudinal carriage by a clutch which



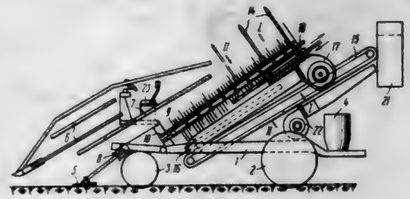
is operated in response to the scanner when a defect is detected. When the inertia of the carriage rotates the cam mechanism out of the null position, two motors and a brake are alternately operated by the cam mechanism to return the carriage to a null position. The carriage is then moved laterally to the patcher.

3,446,257
SHEET PATCHING MACHINE
Arthur L. McGee, San Jose, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed May 1, 1967, Ser. No. 635,239
Int. Cl. B27d *5/00;* **B27c** *9/00*
U.S. Cl. 144—2 **10 Claims**



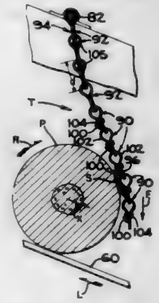
A sheet patching machine having a conveying system for rapidly moving veneer sheets along a linear path through a defect scanner disposed in transverse alignment with a plywood patcher. The conveying system include pairs of driven clamping rollers for advancing sheets longitudinally from one end of the machine to the other end for accurately positioning the defect in a transverse scanning plane by forward and reverse movement of rollers in response to a scanner activated control system. The rollers are supported on a carriage which then disconnects rollers from their drive and moves carriage and sheet transversely into alignment with the patching head, and after the patch has been applied, returns the sheet to the linear path to continue its longitudinal movement while scanning for additional defects and to subsequently discharge the patched sheet from the other end of the machine.

3,446,258
CANE HARVESTER
Alexandr Konstantinovich Vyaznikov, ul. Kirova, 39, kv. 43; Vasily Pavlovich Egorov, pos. Kalinina, 94, kv. 6; Nikolai Nikitovich Melnikov, Krasnogorskaya ul., 22, korp. 6, kv. 10; Boris Andreevich Popov, Oktyabrsky pr., 143, kv. 3; and Evgeny Ilich Khokhlov, 1 Zavodskoi dvor, 11, kv. 32, all of Ljubertsy Moskovskoi Oblasti, U.S.S.R.
Filed Mar. 1, 1967, Ser. No. 619,788
Int. Cl. A01d *55/02;* **B62c** *13/00;* **A01f** *11/00*
U.S. Cl. 146—108 **3 Claims**



A harvester for cane including a stem chopper and a conveyor disposed under the chopper for carrying the chopped mass. A board is positioned between the conveyor and chopper for taking stem tops aside from the conveyor and the board is capable of movement along the chopper.

3,446,259
REMOVING SCABS FROM FRUIT
Katsuji Hirahara, San Jose, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Aug. 29, 1966, Ser. No. 575,763
Int. Cl. A23n *7/00, 15/00*
U.S. Cl. 146—231 **10 Claims**

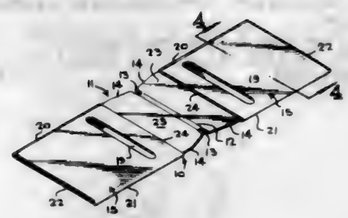


Scabby pears are lye peeled and then rolled down an upwardly moving belt and across suspended chain knives which have sharp edges that hook under and pry loose the scabs.

3,446,260
CARD HOLDER FOR WALLETS
Benjamin B. Osher, Lawrence, N.Y., assignor to Kleer-Vu Industries, Inc., New York, N.Y.
Filed Apr. 13, 1967, Ser. No. 630,635
Int. Cl. A45c *11/18;* **G09f** *1/10*
U.S. Cl. 150—39 **3 Claims**

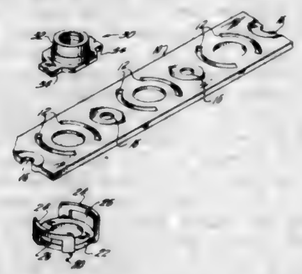
A card holder for wallets, pass cases and the like which is made of transparent plastic material and which

has a body piece having flaps affixed thereto. The spaces between the flaps and body piece define pockets for re-



ceiving cards. Each of the flaps has a cutout for receiving frequently used cards.

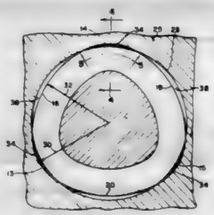
3,446,261
FASTENER STRIP
Ervin J. Dey, Santa Fe Springs, Calif., assignor to Standard Pressed Steel Co., Jenkintown, Pa., a corporation of Pennsylvania
Filed July 27, 1967, Ser. No. 656,579
Int. Cl. F16b *39/00*
U.S. Cl. 151—41.71 **5 Claims**



A fastener strip having a plurality of fasteners which are mounted by means of a plurality of retaining clips. The clips have bases which bear against one surface of the strip and slotted flanges which extend away from the bases and through correspondingly shaped slots in the strip. The slots in the flanges extend beyond the opposite surface of the strip and are arranged to receive lugs provided on the fasteners. As a result, the fasteners are held captive by the clips on the surface of the strip opposite from the one against which the bases of the clips bear.

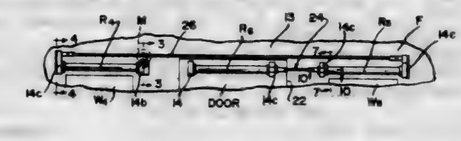
3,446,262
COMBINATION OF SCREW OF SOFT MATERIAL AND FEMALE THREADED BODY OF HARD MATERIAL
Harvey F. Phipard, Jr., South Dartmouth, Mass., assignor to Research Engineering & Manufacturing, Inc., New Bedford, Mass., a corporation of Massachusetts
Filed Feb. 1, 1968, Ser. No. 702,239
Int. Cl. F16f *39/30, 29/00;* **B23g** *9/00*
U.S. Cl. 151—14.5 **1 Claim**

The screw of the present combination is of polygonal cross section and is provided with a plurality of circumferentially spaced apart lobes. The lobes of the screw thread have a greater maximum radial dimension than the corresponding radial dimension of the thread of the female member into which the screw is adapted to be driven so that an interference condition exists between the lobes of the screw and the female thread. That part of the screw thread between the lobes has a lesser radial dimension than the corresponding points of the female thread. At least the surface portion of the screw thread is of a material which is softer than the material of the female thread so that the female member will reform



the lobular portions of the male thread as it is driven relatively into the female member. The material displaced from the lobes of the screw thread will be forced into the area of the screw thread intermediate the lobes thereof.

3,446,263
WINDOW SHADE APPARATUS
Leo J. Roth, 11950 S. 71st Ave., Palos Heights, Ill. 60463
Original application Feb. 23, 1967, Ser. No. 618,143, now Patent No. 3,389,738, dated June 25, 1968. Divided and this application May 20, 1968, Ser. No. 730,271
Int. Cl. E06b *9/08, 9/20;* **A47h** *1/00*
U.S. Cl. 160—120 **1 Claim**

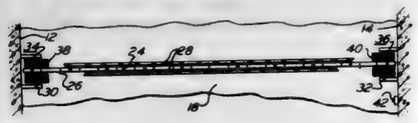


A universal connection for adjacent window shade rollers on a door and a framework adjacent the hinge of the door to connect the rollers for simultaneous rotation while permitting the door to be opened without disconnecting the rollers. The universal connection includes a flexible universal shaft having an elongated slot in at least one of its ends, said slot extending in the direction of the axis of the shaft, and a pin extending through the slot for connection to the adjacent roller for imparting rotary movement to the universal shaft. The slot provides a lost motion connection to permit the universal shaft to move in relation to the adjacent roller as the door opens and closes.

3,446,264
FOLDING WALL SAFETY DEVICE
Henry C. Roemer, deceased, late of Cheltenham Township, Pa., by Provident National Bank, Philadelphia, and George J. Hauptfuhrer, Jr., Huntingdon Valley, Pa., executors, assignors to Industrial Corporation of America, Quakertown, Pa., a corporation of Pennsylvania
Filed Jan. 26, 1967, Ser. No. 612,055
Int. Cl. E05f *15/14, 15/20;* **E05d** *15/26*
U.S. Cl. 160—188 **2 Claims**

A motor-driven folding wall or partition comprising hingedly interconnected panels, and a safety device to prevent entrapment of persons or objects between the panels as the panels move from their in-line position to a folded

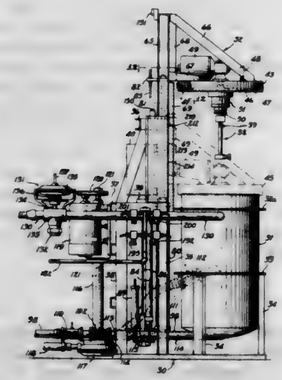
or "stacked" position. Means are provided at danger areas not readily seen by persons operating the wall or partition for sensing the presence of persons or objects, and preventing movement of the wall or partition.



3,446,265
PROCESS FOR MAKING PERMANENTLY BACKED SHELL MOLDS
Ronald H. Buck, Jr., Farmington, Mich., assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio
No Drawing. Filed May 17, 1966, Ser. No. 550,632
Int. Cl. B22c *13/08*
U.S. Cl. 164—21 **8 Claims**

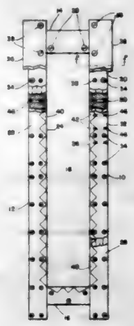
A process for making permanently backed shell molds by which a particulated refractory material containing a resin binding agent is introduced under controlled pressure into a cavity defined by a heated pattern and metal backing member which are vibrated at high frequency during the injection of the refractory material and continuously vibrated thereafter until a partial curing of the binding agent occurs.

3,446,266
INVESTMENT CASTING APPARATUS
Claude H. Watts and Arthur A. Shields, Lyndhurst, and Harvey W. Krohn, Cleveland, Ohio, assignors to Precision Metalsmiths, Inc.
Original application Dec. 28, 1962, Ser. No. 248,076, now Patent No. 3,231,946, dated Feb. 1, 1966. Divided and this application Oct. 19, 1965, Ser. No. 509,464
Int. Cl. B22c *15/22*
U.S. Cl. 164—160 **5 Claims**



Apparatus for use in making refractory molds including a conveyor for transporting a pattern set-up from station to station, structure at one of the stations for applying a refractory slurry coating to a pattern set-up, the structure including means for rotatively supporting the set-up and for raising and lowering the set-up relative to a slurry tank, and means for transferring the set-up between the conveyor and the supporting means.

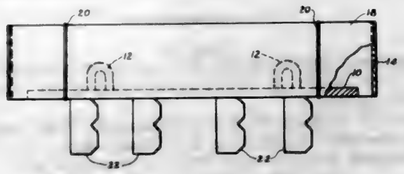
3,446,267
CONTINUOUS CASTING MOLD
Joseph D. Gricol, Flat Rock, and George E. Schmidt, Trenton, Mich., assignors, by mesne assignments, to Concast Incorporated, New York, N.Y., a corporation of Delaware
Filed Sept. 7, 1966, Ser. No. 577,717
Int. Cl. B22d *11/12, 27/04;* **F16n** *1/00*
U.S. Cl. 164—268 **3 Claims**



In an open-ended continuous-casting mold, means for lubricating the surface of the mold comprises a series of metal blocks around the upper end of the mold cavity with serrated shims between the upper ends of the mold walls and the blocks. Passages in the blocks are connectible to a supply of oil and communicate with the recesses between the serrations. The shim is arranged with the recesses opening into the mold cavity along a horizontal line around the cavity so that oil passing into the mold through the recesses forms a continuous film.

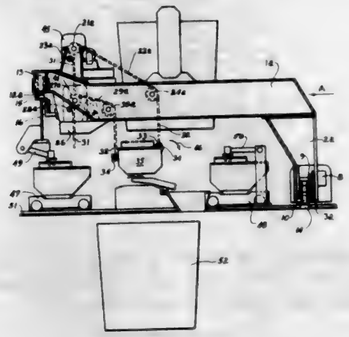
A curtain of burning gas for shielding metal being poured into the mold cavity is also provided for by another series of metal blocks above the first. Similar serrated shims are placed between the lower and upper series and passages through the blocks of the upper series connect a source of a flammable gas to the recesses between the serrations of the latter shims.

3,446,268
CAPPING DEVICE
Jack O. Horsley, Trenton, Mich., assignor, by mesne assignments, to Concast Incorporated, New York, N.Y., a corporation of Delaware
Filed Feb. 24, 1967, Ser. No. 618,487
Int. Cl. B22d *11/08*
U.S. Cl. 164—274 **4 Claims**



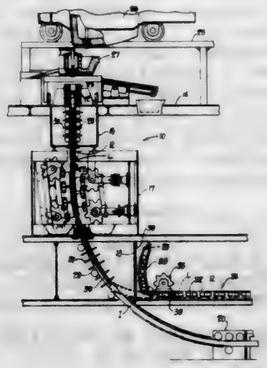
A capping device for a continuous cast strand consisting of a base plate having deoxidizer bars extending downwardly from the bottom surface thereof and having a can positioned around the periphery of said base plate, but having spaces between said can and said base plate. The capping device is lowered into the continuous casting mold until the deoxidizer bars sink into the molten metal to kill the metal. Thereafter, spraying of the capping device with water caps off the strand for removal.

3,446,269
APPARATUS FOR THE TRANSPORTING OF THE INTERMEDIATE CONTAINER OF CONTINUOUS CASTING MACHINES
Horst Buschmann, Solingen-Ohligs, and Karl Heinz Golde, Ratingen, Germany, assignors to Schloemann Aktiengesellschaft, Dusseldorf, Germany
Filed Aug. 8, 1966, Ser. No. 570,795
Int. Cl. B22d *11/10, 11/14, 39/00*
U.S. Cl. 164—281 **4 Claims**



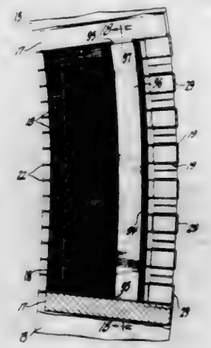
A casting car movable along a path above a mold carries a ladle of molten metal and has lifting mechanism for detachably engaging and supporting an intermediate container thereon. The casting car is movable selectively to one point on its path at which the lifting mechanism is operable to set the intermediate container in position to pour metal into the mold and to another point at which the lift mechanism is adapted either to deposit an intermediate container on, or pick one off, a transport car. The transport car is movable along a path across the path of the casting car and is adapted to carry an intermediate container to a heating station at which the intermediate container is preheated. With this arrangement one intermediate container can be in pouring position while another is being preheated, and two transport cars and two casting cars can be utilized to provide substantially continuous pouring.

3,446,270
APPARATUS FOR CONTINUOUS CASTING
Anatol Michelson, Glenolden, Pa., assignor to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware
Filed May 9, 1966, Ser. No. 548,743
Int. Cl. B22d *11/12*
U.S. Cl. 164—282 **3 Claims**



A continuous casting installation of the type including a generally downwardly directed flow-through mold from which an ingot is continuously cast. The disclosure provides guide means positioned subjacent the mold and including a pair of articulated link type guide means positioned in opposed ingot engaging relationship. The means are positioned to define a curvilinear path and include a plurality of curved ingot contact members which engage opposite sides of the ingot and guide it along the curvilinear path.

3,446,271
KEYED MATRIX
David M. Lyon, La Grange, Ill., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 9, 1967, Ser. No. 673,866
Int. Cl. F28d *19/04, 19/00*
U.S. Cl. 165—9 **6 Claims**

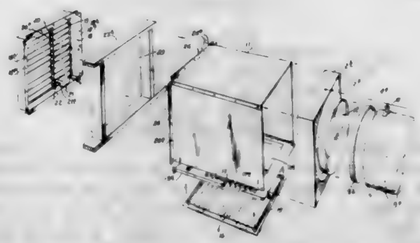


A radial-flow rotary regenerator matrix includes two coaxial steel rims. Twenty-five rigid steel stiffeners are joined rigidly to the rim by tongue-and-groove type connections and keyed against disconnection. Labyrinth seal elements mounted in spacer plates are alternated with sheet metal shim pack heat transfer material in segments between the stiffeners, received in grooves in the inner face of the rims. Circumferential keepers fitted in slots in the shim pack and spacers hold these parts aligned.

The seal elements are held in tension by support bars which fit over shoulders on the outside of the rims, the bars being retained by latches.

The spacers next to the stiffeners are keyed to the stiffeners to prevent relative radial shifting of the spacers. The keys are held operative by a deformable wire lock.

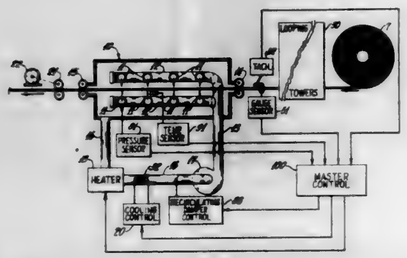
3,446,272
AUTOMATIC TEMPERATURE CONTROL OF GREENHOUSE
Floyd C. Gaines, Jr., Dallas, Tex., assignor to Pan American Hydroponics, Inc., Grapevine, Tex.
Filed Apr. 19, 1967, Ser. No. 632,097
Int. Cl. F24f *3/14;* **B01f** *3/02;* **G05d** *21/00*
U.S. Cl. 165—21 **5 Claims**



An automatic greenhouse having basic environmental control systems incorporated therein including exhaust

fans and evaporative pads through which air is drawn by the exhaust fans to provide cooling and humidity control in the summer. Propeller driven unit heaters within same are thermostatically controlled to provide heating when desired. Thermostatically and/or humidistatically controlled circulating and recirculating and ventilating means for controlling the temperature and humidity within the greenhouse operate both summer and winter.

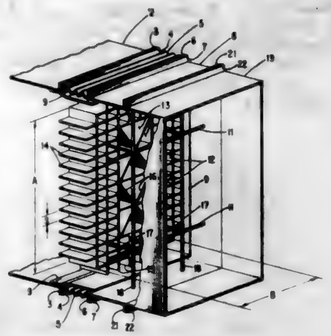
3,446,273
CONTROL SYSTEM
William Leonard Thome, Toledo, Ohio, assignor to Midland-Ross Corporation, Toledo, Ohio, a corporation of Ohio
Filed Oct. 18, 1967, Ser. No. 676,148
Int. Cl. F25b *29/00*
U.S. Cl. 165—26 **22 Claims**



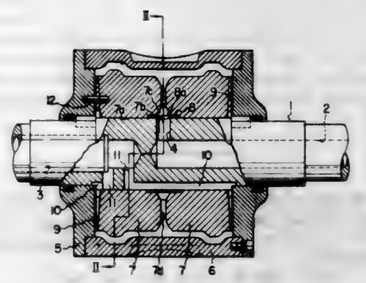
A control system for apparatus which includes a convection heating housing and means for directing gases in heat transfer relationship with the material as it passes through the housing. The gases are heated and circulated between the heating means and the gas directing means. Two controls are exercised over the heating effect. First, the wind pressure in the circulating means is sensed and a signal is supplied proportional to that pressure. A signal is also supplied proportional to the load demand on the heating in the housing. Means responsive to the wind pressure signal and the load demand signal control the flow of gases in the circulating means. Secondly, the temperature of the gases is sensed, compared with a preset temperature value, and a temperature error signal is provided proportional to the difference between the sensed and preset values. Means responsive to the load demand signal and the temperature error signal controls the heating means.

3,446,274
GAS TURBINE EXHAUST SYSTEM
William D. Moore, 1904 Zapp Lane, Pasadena, Tex. 77502
Filed Oct. 9, 1967, Ser. No. 673,775
Int. Cl. F28f *7/00*; F28b *9/00*
U.S. Cl. 165—83 **2 Claims**

Gas turbines, such as used in the generation of electricity, are made more efficient by using the hot turbine exhaust gases to drive a heat exchanger. In the ductwork from the turbine to the heat exchanger, a flexible joint provides essential freedom to the thermal movements of the turbine without the heat exchanger exerting substantial force or weight on the turbine. Positioned at about the zone of the flexible joint, a rigid honeycombed straightening vane within the ductwork imparts extended operating life to the flexible joint and provides enhanced turbine efficiency and mechanical performance.



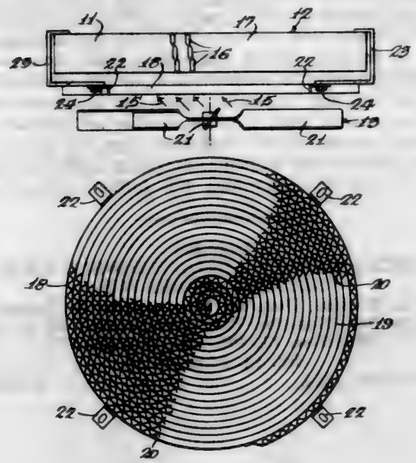
3,446,275
COOLED ROLLER
Takaai Kurokawa, Chigasaki-shi, and Mitsugu Fukuda, Kawasaki-shi, Japan, assignors to Tokyo Shibaura Denki Kabushiki Kaisha, Kawasaki-shi, Japan, a joint-stock company of Japan
Filed May 18, 1967, Ser. No. 639,380
Claims priority, application Japan, Sept. 10, 1966, 41/85,305
Int. Cl. F28d *21/00*; C03b *13/00*
U.S. Cl. 165—90 **3 Claims**



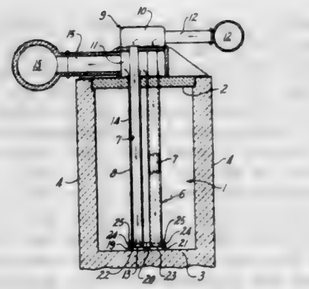
A roll, for example a feed roll operating at elevated temperatures comprises a cylindrical drum clamped between end plates, and a core member made of a solid good heat conductive material and contained in the cylindrical drum. A passage for cooling liquid is provided for the roll through a plurality of first radial passages extending through the central portion of the core member, through an annular space between the core and the drum, and a plurality of second radial passages at the opposite ends of the core member.

3,446,276
VEHICLE RADIATOR CORE ASSEMBLY
Robert F. Poehlman, South Milwaukee, Wis., assignor to Modine Manufacturing Company, a corporation of Wisconsin
Filed July 7, 1967, Ser. No. 651,817
Int. Cl. F28f *19/00, 13/12*
U.S. Cl. 165—119 **3 Claims**

A vehicle radiator core assembly having a plurality of spaced coolant tubes subjected when in use to a cooling air stream that carries entrained solid particles and a core protector mounted on the upstream side of the core with relation to the air stream for intercepting the solid particles and preventing damage to the core and other parts of the radiator in which the protector is a spiral flat metal strip with spaced coils, with the strip being edgewise to the fan and radiator and an air pervious filler member located between adjacent coils in the spirals.

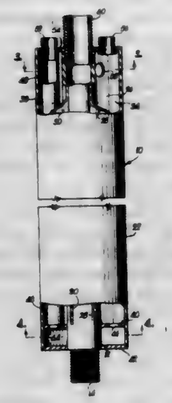


3,446,277
SPINE RECUPERATOR
Alan J. White, Pittsburgh, Pa., assignor to The American Schack Company, Inc., Pittsburgh, Pa., a corporation of Delaware
Filed Aug. 30, 1967, Ser. No. 664,345
Int. Cl. F28f *13/18*; F28d *7/12*
U.S. Cl. 165—136 **11 Claims**



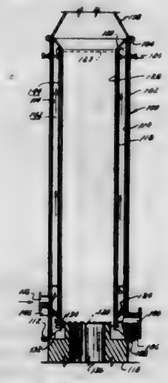
A multi-stage heat exchanger recuperator having a multiplicity of recuperator tubes suspended in an elongate heat exchanger chamber. The recuperator tubes, each of which has an inner and outer tube, are disposed in two lines which are parallel to the central longitudinal axis of the chamber. The tubes in one line are disposed in staggered relationship with respect to the tubes in the other line. The bottom portion of the outer tube is closed and is shielded from thermal absorption by refractory materials.

3,446,278
NONFREEZING FLUID CONNECTION
Elmer G. Heinrich, Hays, Kans. (4490 Garfield St., Denver, Colo. 80216)
Filed Apr. 17, 1967, Ser. No. 631,268
Int. Cl. F28d *7/00*; A23c *3/02*
U.S. Cl. 165—155 **4 Claims**



A flexible fluid connection suitable for use in connecting house trailers to a water source. The connection includes a main flexible inlet line and a water conduit adapted for coupling with a hot water heater and extending adjacent the inlet line in thermal exchange relationship therewith. The water condit is adapted for returning the heating water to the cold water pipe of the water heater so that heating water is circulated through the conduit for preventing freezing of the main line.

3,446,279
AIR-COOLED RADIATION RECUPERATOR
Alan J. White and Siegfried R. Meder, Pittsburgh, Pa., assignors to The American Schack Company, Inc., Pittsburgh, Pa., a corporation of Delaware
Filed July 5, 1967, Ser. No. 651,301
Int. Cl. F28d *7/10*; F23l *15/04*
U.S. Cl. 165—155 **7 Claims**



A radiation recuperator or heat exchanger having an outer cylindrical shell, an inner cylindrical shell and an

intermediate shell concentric with the inner and outer shells. The outer cylindrical shell has a lining of insulating material secured to the inner surface and forms a first or outer annular passageway between the insulated inner surface of the outer shell and the exterior surface of the intermediate shell. The concentric intermediate shell is spaced from the exterior surface of the inner shell and forms a second or inner annular passageway between the exterior surface of the inner shell and the inner surface of the intermediate shell. The inner shell has suitable outwardly fianged end portions that enclose the annular passageway between the exterior surface of the inner shell and the interior surface of the outer shell. An inlet opening is provided into the outer annular passageway between the outer shell and the intermediate shell and an outlet opening is provided for the inner annular passageway between the inner shell and the intermediate shell. Flue gas at elevated temperature flows through the inner shell and transfers heat to the shells of the recuperator and the gas flowing through the annular passageways. Air, at ambient temperature, enters the outer annular passageway between the outer shell and the intermediate shell and flows through the outer passageway in one direction where the air is heated by radiation and convection. The heated air then flows through the inner annular passageway where it is further heated by radiation and convection. The heated air leaves the inner annular passageway of the recuperator through the outlet opening. In one embodiment, the inlet opening and outlet opening are positioned adjacent the base of the recuperator and in another embodiment a pair of inlet openings are provided for flow in both directions through the outer annular passageway and inner annular passageway to a single outlet opening.

3,446,280

ACTUATING MEANS FOR WELL TOOLS

Benjamin P. Nutter, Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas

Filed Oct. 26, 1967, Ser. No. 678,281
Int. Cl. E21b *23/00, 33/12*
U.S. Cl. 166—152 **28 Claims**



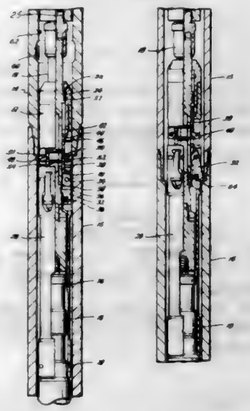
The particular embodiments described herein as illustrative of the invention are directed to actuating means for well tools having relatively rotatable inner and outer telescopically arranged members. To accomplish this, the disclosed tools include a threaded member, such as a nut, that is disposed in the annular space between the telescoped members between two spaced stops on one of the members such as, for example, the outer member. Threads on the other member, for example the inner member, are normally engaged with the threaded member. So long as the threaded member remains engaged with the threads, the other member cannot be moved over a first longitudinal span any greater than allowed by the spaced stops. A circuitous groove system on one member receives a lateral guide member loosely mounted on the other and, in response to relative telescoping movement of the two members, will permit the two members to be placed in various selected longitudinal positions within this first longitudinal span to perform various operations. Once, however, it is desired to move the members to a position outside of the limits of this first longitudinal span, the telescoped members are rotated relative to one another to disengage the threaded member from the threads. This will permit the telescoped members to then be moved in a different longitudinal span for performing still further operations.

3,446,281

MECHANICALLY ACTUATED WELL LOCK SETTING APPARATUS

Fred E. Watkins, Houston, Tex., assignor to Camco Incorporated, Houston, Tex., a corporation of Texas

Filed Dec. 11, 1967, Ser. No. 689,375
Int. Cl. E21b *23/02*
U.S. Cl. 166—214 **9 Claims**



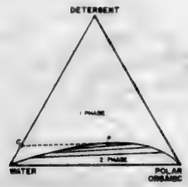
A setting apparatus for setting a subsurface well lock in a tubing including a mandrel, a holding skirt slidably supported on the mandrel and releasably holding the well lock, dogs pivotally mounted on the skirt and initially held in a retracted position by a retaining sleeve but yieldably urged outwardly for engagement with a shoulder in the tubing by a spring when pawl means which engage the sleeve are actuated by contact with a downwardly facing shoulder in the tubing. A plurality of tubing landing nipples vertically spaced in the tubing including an annular internal recess for receiving the locking dogs on the well lock and an annular upstanding shoulder above the recess for engagement by the setting dogs of the setting tool, and the recess and shoulder being spaced a fixed distance apart such that when the setting dogs engage the upstanding shoulder the locking dogs of the lock are aligned with the recess. Releasable locking means between the mandrel and the skirt for allowing downward jarring action when locked but preventing premature release of the well lock. Detent means engaging the retaining sleeve for holding the sleeve in the position in which it is mechanically set. The pawls extending outwardly from setting tool sufficiently to be engaged by a restriction in a tubing nipple, but not extending out sufficiently to be engaged by the tubing.

3,446,282

MISCIBLE DISPLACEMENT OIL RECOVERY PROCESS

Claude E. Cooke, Jr., Houston, Tex., assignor to Esso Production, Research Company, a corporation of Delaware

Continuation-in-part of application Ser. No. 507,836, Nov. 15, 1965. This application Oct. 27, 1966, Ser. No. 590,457
Int. Cl. E21b *43/22*
U.S. Cl. 166—274 **6 Claims**



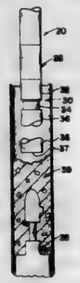
In the recovery of oil from subterranean oil-bearing formations, a polar organic solvent is injected into the formation. The polar organic solvent is followed by an aqueous detergent solution having a detergent concentration which is, at least, the minimum miscibility concentration in a system of aqueous liquid, polar organic solvent, and detergent. The polar organic solvent and detergent solution are displaced into the reservoir and oil is recovered from the formation. The volume of injected solvent should be about 3 percent to 20 percent of the pore volume of the reservoir to be flooded and the volume of aqueous detergent solution injected should be about 3 percent to 20 percent of the pore volume of the reservoir to be flooded.

3,446,283

METHOD AND APPARATUS FOR SIMULTANEOUSLY CLEANING A WELL AND REMOVING A DOWNHOLE TOOL

August B. Baumstimler, 4101 Mankins, Odessa, Tex. 79760

Continuation-in-part of application Ser. No. 654,453, July 19, 1967. This application Jan. 2, 1968, Ser. No. 694,926
Int. Cl. E21b *37/00, 31/08, 27/00*
U.S. Cl. 166—311 **11 Claims**



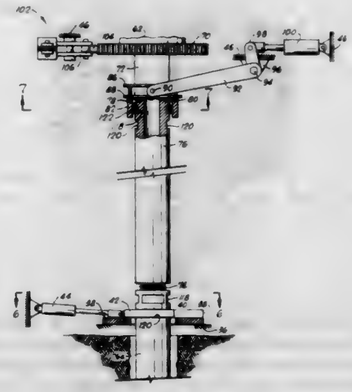
A hydrostatic sand retriever in the form of a downhole tool string for cleaning the bottom of a borehole and for retrieving a downhole removable tool in a single round trip into the well. The tool string is preferably attached to the depending end of a drill or tubing string. The downhole tool string is comprised of a well cleanout tool having a telescopingly actuated relief valve which controls a sand catching valve means associated with the lowermost portion of the string and which accommodates a downhole tool retriever at the lower terminal end thereof. The assembled downhole tool string is lowered into the well in the usual manner until the retriever contacts debris which covers the downhole removable tool. Further downward movement of the downhole tool string actuates the telescoping relief valve associated with the well clean out tool to the open position to thereby cause a flow of debris thereinto as the retriever is lowered into contact with the downhole removable tool. Engagement of the downhole tool retriever with the removable downhole tool enables the entire downhole tool string along with the removable downhole tool to be lifted from the well, all in a single round trip.

3,446,284

PIPE HANDLING APPARATUS

Norman D. Dyer, Beaumont, and Roy L. Van Winkle, Dallas, Tex., assignors to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware

Filed Sept. 15, 1967, Ser. No. 667,957
Int. Cl. E21b *19/16, 17/02*
U.S. Cl. 166—315 **18 Claims**



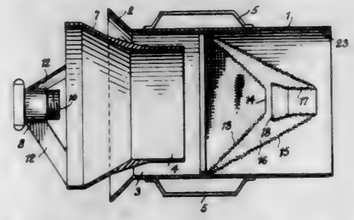
Apparatus for unscrewing selected threaded connections between sections of pipe and the like. Each pipe section having flats on the exterior thereof that are engaged by a wrench whereby torque can be applied to the pipe. Rotation is applied to one of the pipe sections through the wrench and flats while a subjacent pipe section is being held against rotation by a slip device that engages the flats on the subjacent pipe section, whereby the threaded connection therebetween is broken.

3,446,285

FOAM DEVICES FOR FOG NOZZLES

Norman C. Hout, 4841 NW. 10th Terrace, Fort Lauderdale, Fla. 33309

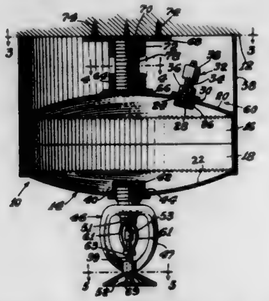
Filed Aug. 7, 1967, Ser. No. 658,714
Int. Cl. A62c *35/44, 35/16;* **B05b** *1/16*
U.S. Cl. 169—15 **7 Claims**



An attachment for fog nozzles of the character employed by firemen comprising, a pair of concentric tubes or sleeves disposed in spaced relation, the innermost tube or sleeve being shaped to form a primary Venturi passage; the spacing between the two tubes constituting a secondary Venturi passage. A coupling for a hose and an attachment for a fog nozzle is located centrally and at the mouth of the innermost tube. The outermost tube

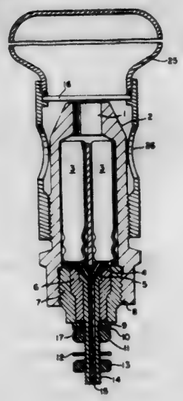
has a portion projecting beyond an end of the innermost tube and said portion of the outermost tube contains nested, concentric frusto-conical foraminous screens of different angularity, each of the screens having a central opening, which openings are axially aligned, and one of the screens has a foraminous aerator tube disposed in its central opening and which tube is directed therefrom toward the central opening in the other screen.

3,446,286
AUTOMATIC FIRE EXTINGUISHER
William E. Kreidler, Blackpoint Horseshoe, Runnson, N.J. 07760
Filed July 12, 1965, Ser. No. 471,030
Int. Cl. A62c *35/02, 37/30;* **E04g** *17/18*
U.S. Cl. 169—26 **2 Claims**



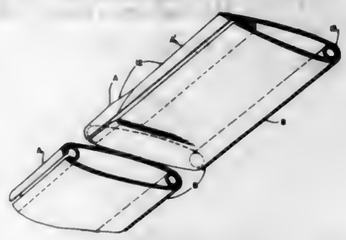
An automatic fire extinguisher has a container for fluid fire extinguishant under pressure which is dischargeable under control of a thermal responsive sprinkler head beneath which is a diffusing plate, the container having secured thereto a cylindrical housing one end of which is adapted to be held tightly in engagement with a ceiling by adjustable mounting means including relatively movable parts one of which is attached to the container and another is adapted to be secured to the ceiling.

3,446,287
FIRE EXTINGUISHER APPARATUS
John H. Hook, Hewitt, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Oct. 19, 1966, Ser. No. 587,752
Int. Cl. A62c *13/24, 13/44, 37/28*
U.S. Cl. 169—28 **4 Claims**



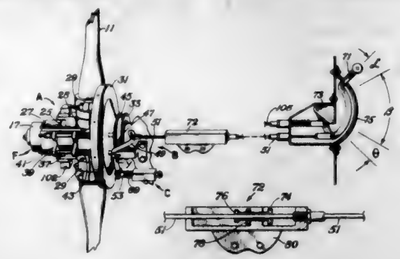
A temperature resistant explosive cartridge assembly utilizing a jet of gas to break a frangible closure in a fire extinguishing apparatus.

3,446,288
HIGH SPEED ROTOR
Shao Wen Yuan, 16 Peak Road, Austin, Tex. 78746
Filed June 28, 1967, Ser. No. 649,719
Int. Cl. B64c *27/18*
U.S. Cl. 170—135.4 **3 Claims**



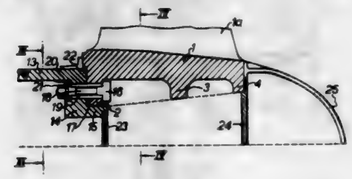
An airfoil formation for the blades of helicopter rotors, the blades each having inner and outer portions extending from the axis of rotation thereof and the outer portion having a relatively sharp normally leading edge with respect to a round normally trailing edge extending to the tip of the blade, the respective edges having jet means therein to provide a calculated dividing streamline at the trailing edge of the blades to control circulation to thereby increase the coefficient of lift thereof. Also, jet means may be formed in the sharp normally leading edge of the blades of the outer portion to increase the coefficient of lift of each of the blades in like manner during the retreating cycle of the blades.

3,446,289
REVERSIBLE PITCH PROPELLER CONTROL SYSTEM
Albert Earl Morris, Jr., 3244 Childress, Fort Worth, Tex. 76118; Helen Knox Morris, executrix of said Albert Earl Morris, deceased
Filed Feb. 8, 1967, Ser. No. 614,586
Int. Cl. B64c *11/40, 27/64, 27/66*
U.S. Cl. 170—160.2 **15 Claims**



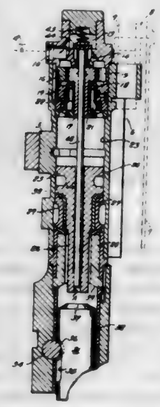
Disclosed herein is a variable pitch propeller control system which utilizes a hydraulically actuated propeller assembly and control system of the type disclosed in Biermann's U.S. Patent No. 3,249,159. I have improved this system to enable safe application even to small aircraft by providing an upper positive pitch stop at the normal maximum pitch for the propellers, along with control linkage improvements that prevent interference with governor control of the porpeller blade pitch so long as the pitch is in a selected upper positive pitch range. Downward movement of the propeller pitch control handle when the propeller blades are in the above positive pitch range tends to further open the propeller pitch control valve, which is already partially open, thus preventing interference with governor control. Upward movement of the control handle is prevented by a positioner means or mechanical stop, thereby prohibiting control valve movement in the opposite or closed direction. The pitch control and the throttle are interconnected in one embodiment to program predetermined motions between them to eliminate necessity for operating simultaneously the throttle and the pitch control handle in many instances. Also, a governor by-pass valve is provided in one embodiment to enable rapid governor control override but only when the propeller pitch is in a range below the above described upper positive pitch range. I also disclose control means for utilizing an intermediate pitch range and a method that further insures safe utilization of the system on small single engine aircraft.

3,446,290
PROPELLER BOSSES
John Hamilton Attwood, Kealey, Surrey, Great Britain, assignor to Esso Research and Engineering Company, a corporation of Delaware
Continuation of application Ser. No. 596,190, Nov. 22, 1966. This application Nov. 2, 1967, Ser. No. 680,263
Claims priority, application Great Britain, Nov. 24, 1965, 49,958/65
Int. Cl. B63h *1/00, 7/00;* **B64c** *11/00*
U.S. Cl. 170—173 **16 Claims**



The disclosure of the instant invention relates to an improved propeller shaft assembly comprising a propeller shaft provided with an internal radial flange connected to an internal radial flange of a hollow propeller boss. The shaft and propeller boss are connected together by fastening elements which pass through apertures in the flanges of both the propeller shaft and propeller boss; said fastening elements being housed entirely inside the boss and shaft.

3,446,291
CRUST BREAKER WITH AUTOMATIC AIR CONTROL VALVE
Sebastian F. Judd, Whitesboro, and Frederick C. Wickersheim, Utica, N.Y., assignors to Chicago Pneumatic Tool Company, New York, N.Y., a corporation of New Jersey
Filed Mar. 13, 1967, Ser. No. 622,655
Int. Cl. E21c *3/20;* **B23q** *5/00*
U.S. Cl. 173—17 **1 Claim**

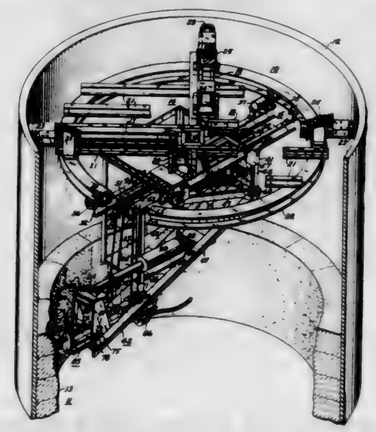


An improved pneumatic percussive crust breaker tool including an air-blown distributing valve for directing operating air alternately to opposite ends of a piston chamber to forcefully reciprocate a piston hammer against a work steel, and equipped with an automatic air control valve mechanism feature normally blocking flow of operating air through the distributing valve to the piston chamber adapted to be opened upon pressed engagement of the steel with the work and to be automatically returned to closed condition upon removal of the steel from the work. The valve mechanism having an association with the hammer and steel so as to be movable to open condition only after the head of the hammer has first been raised clear of the piston block upon pressed engagement of the steel with the work.

It is necessary, in order to avoid piston hammer damage to the housing in conventional crust breaker tools not equipped with the air control valve mechanism feature, to manually open the air supply valve after the tool has been pressed into engagement with the work to clear the head of the hammer from the piston liner. It is also necessary, so as to avoid piston hammer damage to the housing in conventional tools, for the operator to manually close the usual air supply valve before the tool is withdrawn from the work, or to timely close it when the steel has broken through the hard crust into a soft area. The control valve mechanism feature of the crust breaker tool of the present invention avoids the foregoing faults. It remains closed until the tool is properly positioned for operation relative to the work so as to open the valve; and it automatically returns to closed condition as the hammer becomes unsupported by the steel.

Control mechanism is known from Patent No. 1,102,271 for avoiding damage to a pneumatic percussive tool when the tool is not in working position; but this mechanism is a latch for restraining piston movement. Other mechanism is known from Patent 1,590,269 for automatically stopping inlet air to the hammer of a percussive tool when the bit is removed from the work. This known mechanism is a complex arrangement having a mode of operation which, unlike that of the mechanism of the present invention, does not solve the foregoing mentioned problems of crust breaker tools.

3,446,292
IMPACT HAMMER DEMOLITION APPARATUS
Donald R. Stauffer, Baltimore, Md., assignor to Bethlehem Steel Corporation, a corporation of Delaware
Filed Jan. 5, 1967, Ser. No. 607,556
Int. Cl. E21c *11/00, 9/00, 3/02*
U.S. Cl. 173—35 **1 Claim**



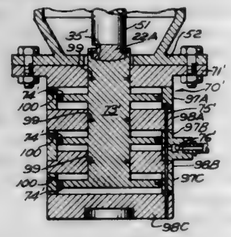
Impact hammer demolition apparatus, having a suspended supporting framework, adapted to be progres-

sively lowered into a tall, refractory-lined structure to cut out its lining. The framework supports a parallel, horizontally rotatable track assembly upon which moves a trolley. A cable operated boom, pivotally connected at one end to the trolley, has at its outer end an impact hammer. At each positioned location of the track assembly the outer end of the boom can be raised or lowered to bring the hammer into engagement with a vertical band of refractory.

3,446,293
PILE DRIVER

Charles L. Guild, East Providence, R.I., and Willard B. Goodman, Sherman Oaks, Calif., assignors to American Drilling & Boring Co., Inc., a corporation of Rhode Island

Filed Dec. 28, 1966, Ser. No. 605,317
Int. Cl. E02d 7/06; B25d 17/12
U.S. Cl. 173—131 2 Claims

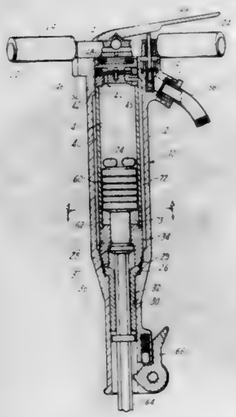


A pile driving cushioning device for use for driving a member into the earth which may be readily attached to a driving ram and which includes a plurality of cushioning members which may be adjustable to vary the stiffness of the assembly and provide proper balance.

3,446,294
PERCUSSION TOOL

Edward A. Bailey, Newport, and Richard W. Beaumont, Claremont, N.H., assignors to Joy Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 14, 1966, Ser. No. 534,162
Int. Cl. E21b 1/00; E21c 3/00
U.S. Cl. 173—138 6 Claims

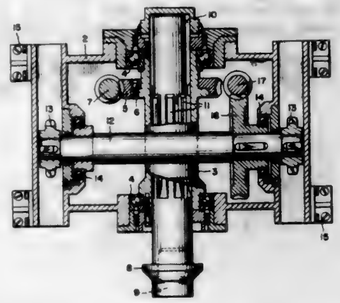


1. In a hand held percussion tool of the type which comprises an elongated body portion with a through body cavity therein having an elongated hollow cylindrical sleeve insertable from one end thereof, said sleeve forming a cylinder wherein a piston is supported and guided for reciprocal motion therein, the improvement comprising: said sleeve having at least the inner surface thereof treated with a friction reducing solid material having a lower coefficient of friction with respect to said piston than the coefficient of friction of the material of said sleeve with respect to said piston.

3,446,295
DRILLING HEAD

Samuel Leven, Easton, Pa., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey

Filed June 28, 1967, Ser. No. 649,585
Int. Cl. E21c 5/06, 5/04; B23q 5/06
U.S. Cl. 173—147 10 Claims

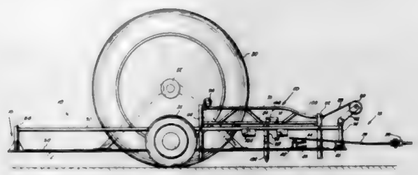


A drilling head, slidably mounted on a drill tower, which carries a spindle, both rotary and feed fluid-actuated motors, and feed and pivot sprockets. The feed motor raises and lowers the head through chains engaging the sprockets in a block-and-tackle arrangement to apply the displacement force along a line transverse to, and on a plane bisecting the centerline of the spindle. Further, the head carries a junction block, and tubing, for receipt and distribution of pressurized fluid for the motors and spindle.

3,446,296
FENCEPOST DRIVING APPARATUS

Everett G. Anderson, 2311 S. Lemon St., Sioux City, Iowa 51106

Filed Feb. 26, 1968, Ser. No. 708,262
Int. Cl. E21b 11/02, 7/00; E21c 1/00
U.S. Cl. 175—19 10 Claims

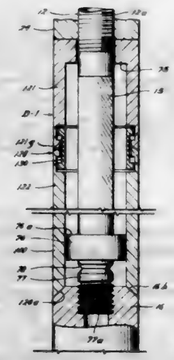


Apparatus to facilitate erecting a line of fence posts. Utilizes a flatbed trailer to be pulled by a tractor or the like; the trailer having one small wheel, adjustable for leveling purposes, and a large wheel carrying an eccentric boss, which, during rotation of the wheel in the forward movement of the trailer, engages and vertically moves a frame that in turn imbeds a post receiving standard in the ground. The frame is longitudinally movable relative to the trailer bed so that it will remain in the same vertical plane relative to the ground during its downward movement and while the trailer is moving forwardly and is designed to engage a manually positioned hollow fence post standard which is driven into the ground by the downward movement of such frame. The trailer bed is designed to carry personnel who will manually mount fence posts in each standard.

3,446,297
FLEXIBLE DRILL COLLAR

Roy H. Cullen, Charles H. Elliott, Jimmie R. Aker, and William E. Burke, Houston, Tex., assignors, by direct and mesne assignments, to The Youngstown Sheet and Tube Company, a corporation of Ohio

Continuation-in-part of application Ser. No. 501,936, Oct. 22, 1965. This application July 15, 1966, Ser. No. 581,666
Int. Cl. E21b 17/02; E21c 15/00; F16c 1/02
U.S. Cl. 175—301 24 Claims

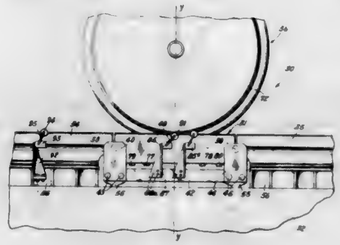


This patent discloses a segmented drill collar which in one condition is rigid for drilling and in another condition is nonrigid for handling. The patent also discloses the combination of segmented drill collar with a jarring system to jar the segments loose one at a time.

3,446,298
WEIGHING APPARATUS

William E. Cory and Melvin A. Schrader, San Antonio, Tex., assignors, by mesne assignments, to Sands Measurement Corporation, Dallas, Tex., a corporation of Texas

Filed Oct. 17, 1966, Ser. No. 587,145
Int. Cl. G01g 23/38
U.S. Cl. 177—7 15 Claims

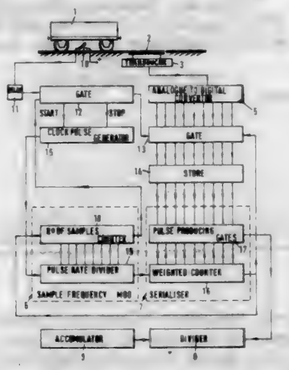


A weighing apparatus for weighing moving loads which includes a beam supported at longitudinally spaced locations, a plurality of sensor means spaced along the beam for measuring the strain of the beam due to the vertical force applied to the beam by a load as it moves thereover, the strain gauges being connected in a sensing circuit to produce a signal which varies in accordance with the strain or deflection of the beam while the load is at a predetermined location along the beam.

3,446,299
DYNAMIC WEIGHING

Jan Leonowicz, Kingswinford, England, assignor to W. & T. Avery Limited, Birmingham, England, a British company

Filed Feb. 28, 1966, Ser. No. 530,441
Claims priority, application Great Britain, Mar. 3, 1965, 9,000/65
Int. Cl. G01g 19/04
U.S. Cl. 177—25 13 Claims

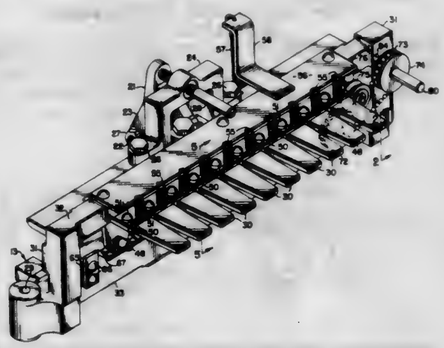


An apparatus for dynamic weighing wherein the product of a load-sensing, transducer output signal, which is representative of the true static weight of the moving load plus a time-varying analogue error signal, and a predetermined function is integrated with respect to time over the weighing period, and wherein the integrated result is divided by the integral of the aforesaid function to provide a readout representative of the true static weight of the load. The predetermined function is one of time, is single-valued, is positive throughout the weighing period, and is substantially symmetrical about a maximum value equal to one-half the weighing period.

3,446,300
WEIGHING SCALE KEYBOARD TARE ADJUSTMENT MEANS

Roger A. Willyard, Toledo, Ohio, assignor, by mesne assignments, to The Reliance Electric and Engineering Company, Toledo, Ohio, a corporation of Ohio

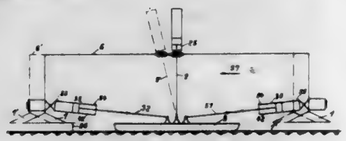
Filed Mar. 14, 1966, Ser. No. 534,218
Int. Cl. G01g 23/14
U.S. Cl. 177—168 12 Claims



A weighing scale having a keyboard for making stepwise tare adjustments. The scale includes a load counterbalancing spring, first and second bell crank means for

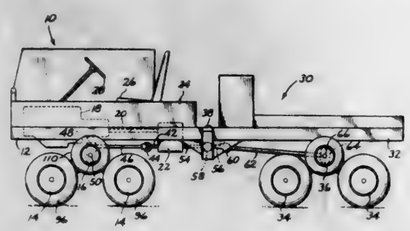
making zero adjustments, and a latch bar with a cam portion for releasing previously operated keys of said keyboard. The tare adjustment means includes springs to obtain the predetermined tare adjustments and an adjustment screw for fine tare adjustments.

3,446,301
LOAD MOVING STRIDING DEVICE
Adolf Thomas, Duisburg, Germany, assignor to Esch-Werke KG, Duisburg, Germany
Filed Jan. 12, 1967, Ser. No. 608,851
Claims priority, application Germany, Jan. 12, 1966, E 30,827
Int. Cl. B62d *57/02*
U.S. Cl. 180—8 **17 Claims**



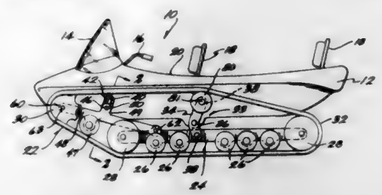
The present disclosure relates to a striding device for rigidly supporting and moving heavy loads, for example 100 tons. The device comprises basically a frame for rigidly supporting the load on the ground and a striding foot assembly connected to the frame by both horizontally acting and vertically acting control power operators for changing the vertical and horizontal relative positions of the frame and stride foot so that the stride foot may selectively engage the ground to lift the frame off of the ground and move relative to the frame to horizontally shift the frame with respect to the ground. Thereafter, the frame is lowered to engage the ground and the stride foot is moved out of engagement with the ground and advanced to a suitable position with respect to the frame. The device provides for the movement of the frame in any horizontal direction with simple controls for fluid power cylinders. The horizontally acting power cylinders are designed to act only in tension and the vertically acting power cylinders are arranged outside of the connecting distance between the frame and stride foot so that bending moments will not interfere with the operation of the power cylinder and will allow a simpler, more economical construction.

3,446,302
VEHICLE DRIVE SYSTEM
Richard H. A. Schoonover, Albany, Oreg., assignor to Katrak Vehicle Company, Albany, Oreg., a corporation of Oregon
Filed Aug. 15, 1967, Ser. No. 660,827
Int. Cl. B62d *61/10*
U.S. Cl. 180—9.2 **8 Claims**



A pair of longitudinally spaced driving wheels are supported independently on coaxilly pivoted arms secured together for relative angular adjustment for varying the spacing between wheels to bring the latter operatively into driving engagement with an interposed driven wheel. The driving and driven wheels may include pneumatic tires, or the driving wheels may support an endless track and the driven wheel a track driving sprocket. A fluid pressure piston-cylinder unit interconnecting the vehicle frame and one of the arms is operable to pivot the interconnected arms to raise or lower the driving wheels.

3,446,303
ENDLESS TRACK VEHICLE
Robert L. Trapp, Milwaukee, Wis., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware
Filed June 22, 1966, Ser. No. 559,560
Int. Cl. B62d *55/06, 55/16*
U.S. Cl. 180—9.5 **4 Claims**



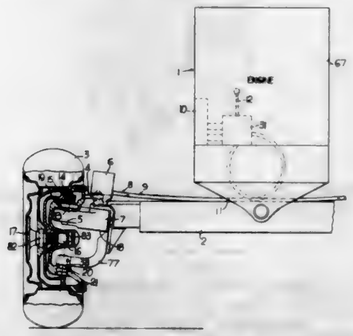
Disclosed herein is a vehicle comprising spaced apart track frames with endless tracks carried on the track frames, drive sprockets carried on the vehicle and respectively disposed for operative driving engagement with the tracks, means pivotally connecting the track frames to the vehicle at points spaced from the drive sprockets to afford oscillatory movement of the track frames about an axis transverse of said track frames, and cross-coupled means for connecting said track frames to said vehicle to afford pivotal movement of one of said track frames in response to opposite pivotal movement of the other of said track frames. Also disclosed herein is means located in part on the vehicle body for affording automatic track tensioning in response to movement of said track frames.

3,446,304
PORTABLE CONVEYOR
Constantin Alimanestiano, 200 S. Michigan Ave., Chicago, Ill. 60604
Filed Aug. 8, 1966, Ser. No. 571,026
Int. Cl. B62d *11/00;* **B60k** *1/00;* **B62b** *1/00*
U.S. Cl. 180—9.24 **1 Claim**



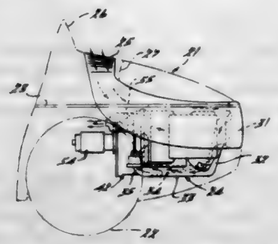
A portable self-powered conveyor for transporting a person standing thereupon and having a handle for controlling speed and direction.

3,446,305
HYDRAULIC TRANSMISSION SYSTEM FOR DRIVING STEERABLE WHEELS OF A MOTOR VEHICLE
Craig W. Cannon, New Berlin, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed June 12, 1967, Ser. No. 645,294
Int. Cl. B62d *7/00, 7/06*
U.S. Cl. 180—43 **8 Claims**



A high pressure hydrostatic drive system having conduits and connectors positioned in such a manner to substantially reduce the bending curvature of the conduit or eliminate their need for bending entirely.

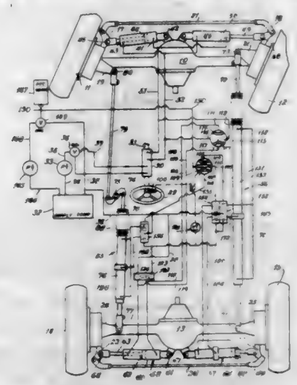
3,446,306
GAS TURBINE FOR AUTOMOTIVE VEHICLES
Sam B. Williams, Walled Lake, Mich., assignor to Williams Research Corporation, Walled Lake, Mich., a corporation of Michigan
Original application Feb. 1, 1965, Ser. No. 429,600, now Patent No. 3,363,415, dated Jan. 16, 1968. Divided and this application Dec. 12, 1966, Ser. No. 630,475
Int. Cl. B60k *3/04*
U.S. Cl. 180—66 **7 Claims**



A vehicle having a rear gas turbine engine beneath the deck, an air intake on the vehicle, a rearwardly facing exhaust gas opening, a permanent connection between a power shaft and vehicle wheels including a power pinion, and a sleeve bearing for the power pinion supported by a compressor shaft.

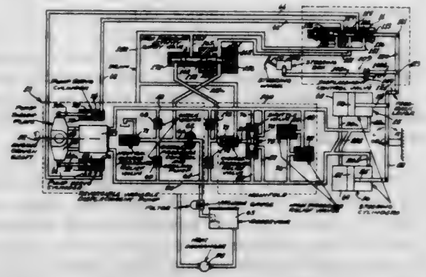
3,446,307
SELECTIVE STEERING WITH SINGLE VALVE
Anthony T. Logus, Chicago, Ill., assignor to Pettibone Mulliken Corporation, a corporation of Delaware
Continuation-in-part of application Ser. No. 484,019, Aug. 31, 1965. This application Feb. 13, 1967, Ser. No. 615,429
Int. Cl. B62d *5/06;* **F01b** *13/00*
U.S. Cl. 180—79.2 **30 Claims**

By turning a lever the driver of the vehicle may select between ordinary two-wheel steering, ordinary four-wheel steering, or four-wheel crab steering. The driver's selection lever selects which one of three tracking-rod or tie-rod assemblies will be made effective to control the coupled rear wheels. Each tie rod includes a lock cylinder having a mid-point abutment, with pistons on each side thereof. When hydraulic pressure fluid is applied to both



ends of the cylinder, both pistons are forced against the abutment thereby drawing that tie rod to the proper length and locking it at that length. Other disclosure, including control valves, is included. Some control valves, one of rotary type, connect one lock cylinder to a pressure source while connecting the others to tank.

3,446,308
HYDRAULIC SYSTEM
Melvin M. Hann, Ottawa, Ill., assignor to Sundstrand Corporation, a corporation of Delaware
Filed June 19, 1967, Ser. No. 647,114
Int. Cl. B62d *5/08*
U.S. Cl. 180—79.2 **6 Claims**

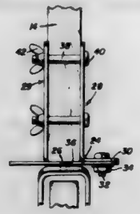


A hydraulic positioning system having a variable displacement multiple piston pump for supplying hydraulic fluid to actuators with feedback linkage from the actuators to a pump displacement control valve.

3,446,309
ROLLER MOUNT FOR LADDERS
Ralph D. Davis, 9241 SW. 59th St. 33143, and John E. Polley, 1411 NW. 199th St. 33169, both of Miami, Fla.
Filed June 1, 1966, Ser. No. 554,392
Int. Cl. E06c *5/32, 7/42;* **E04g** *5/02*
U.S. Cl. 182—129 **10 Claims**

A roller mount particularly adapted for folding ladders including a caster-type wheel depending from a horizontal base. A first side plate is fixed to the base and projects vertically therefrom for engagement against one side of a ladder leg. A second plate is positioned laterally of the first plate so as to lie against the second side of a ladder

leg, the second plate being free of the base and selectively movable toward the first plate so as to clamp a received ladder leg therebetween by front and rear sets of trans-



verse bolts positioned both forward and rearward of the front and rear edges of the ladder leg so as to lie against these edges and further stabilize the mount relative to the leg.

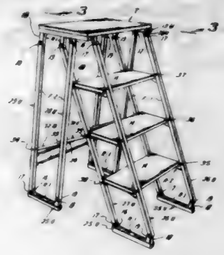
3,446,310
SCAFFOLADDER, DECORATOR MODEL
Conrad L. Alfie, 6614 Mercer St., Houston, Tex. 77005
Filed June 22, 1967, Ser. No. 648,121
Int. Cl. A64b *1/00, 7/16*
U.S. Cl. 182—156 **1 Claim**



A two section top ends hinged divergeable and compactly foldable scaffoladder device, comprising a moderately broad and wide work platform either end, near endmost rigidly mounted atop a pair of space apart parallel U channel support bars having rightangle appended sideflanges of a width pertinent to function as linkage brackets, wherewith by means of the outer members of said U channel linkage brackets said work platform is pivotally secured atop a rear portion multirail load supporting framework; and a front ladder portion, comprising a plurality of lesser dimensions auxiliary work platforms which are either end side corners pivotally joined to appertain spaced apart parallel elongated side rails of a compactly foldable duo-rail endframe situated at said front ladder portion either side end, which side rail top ends are pivotally joined to appertain inner parallel members of a said rear portion work platform either end, near endmost affixed spaced apart parallel support bar linkage brackets.

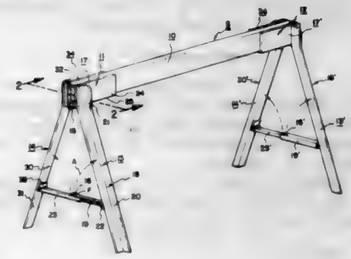
3,446,311
SCAFFOLADDER, INDUSTRIAL MODEL
Conrad L. Alfie, 6614 Mercer St., Houston, Tex. 77005
Filed July 26, 1967, Ser. No. 656,183
Int. Cl. A64b *1/00, 7/16*
U.S. Cl. 182—156 **1 Claim**

A compactly foldable builder mechanics ladder device, comprising; a relevantly broad and wide work platform pivotally secured atop a foldable multirail load supporting rear portion framework, and; an expandable spread limit controlled front ladder portion in ascending to and descending from said elevated work platform, comprising a plurality of lesser dimensions auxiliary work platformsteps either end, near endmost rigidly mounted atop a load support bar having end-arm mounting brackets which tip-ends are embedded between and pivotally joined to the sideflanges of U channel type elongated spaced apart



parallel siderails of a load supporting foldable duo-rail endframe situated at said auxiliary platforms either endside.

3,446,312
STRUCTURAL SUPPORT
Rex L. Jones, 477 Jewell Court, Montpelier, Idaho 83254
Filed Jan. 26, 1968, Ser. No. 700,927
Int. Cl. E04g *1/32, 1/00*
U.S. Cl. 182—226 **8 Claims**

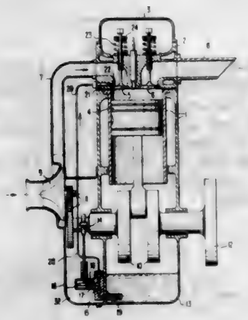


The present invention relates to structural supports such as saw-horses and, more particularly, provides collapsible end stands as such supports which are easily assembled and are storable in a very small space. The stand halves of each of the supports are pivoted together, provided with suitable pivot and brace means so that the combined stand halves on each side of the crossbar of the sawhorse may grip the crossbar in a secure manner and at the same time provide rugged construction of the stand through the braces used. This disassembly from the crossbar is easily accomplished through disconnection of the braces and their urging in respective inward movements so as to arcuately space apart and thereby separate the angle supports of the stand halves from the theretofore gripped crossbar. Similar constructions may be disposed on opposite ends of the crossbar used.

3,446,313
APPARATUS FOR PREVENTING THE INLET VALVE WEAR OF SUPERCHARGED INTERNAL COMBUSTION ENGINES
Hans O. Scherenberg, Stuttgart-Heumaden, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Feb. 25, 1966, Ser. No. 530,229
Claims priority, application Germany, Feb. 25, 1965, D 46,606
Int. Cl. F01m *1/08*
U.S. Cl. 184—6 **21 Claims**

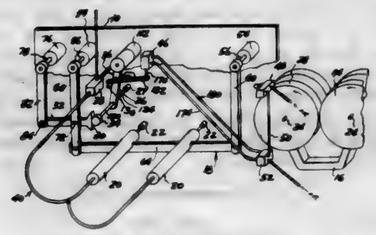
A poppet valve for a supercharged internal combustion engine provided with means to directly lubricate the inlet valve seat independently of the inlet charge. The lubricant

may be sprayed on to the valve seat surfaces, or delivered thereto by means of bores communicating with an annular channel, or a single opening in combination with a rotat-



able valve, for example. The supercharger drive and lubricant pump with its drive may be provided in a separate chamber of the internal combustion engine.

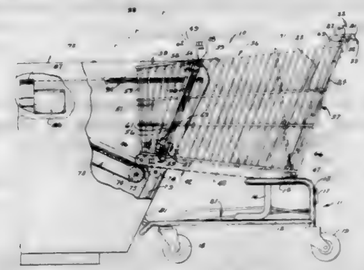
3,446,314
CONVEYOR TROLLEY WHEEL LUBRICATOR
John A. Sweeney, 1221 Stephens, Clawson, Mich. 48017
Filed Dec. 20, 1965, Ser. No. 514,920
Int. Cl. F16n *9/02*
U.S. Cl. 184—15 **7 Claims**



An automatic system to be mounted on an existing trolley wheel channel for lubricating high speed multiple bearing conveyors. The system includes a cradle which carries two or more lubricant guns and upon actuation by means responsive to the motion of the lead trolley wheel of the conveyor carrier assembly swings the lubricant guns into the lubricant fittings on the passing conveyor assembly.

3,446,315
GROCERY CART WITH FRONT OPENING GATE
Garth Close, Lubbock, Tex., assignor to United Steel and Wire Company, Battle Creek, Mich., a corporation of Michigan
Filed Aug. 21, 1967, Ser. No. 662,057
Int. Cl. B62b *3/00;* **B65g** *67/24*
U.S. Cl. 186—1 **3 Claims**

A basket construction for a shopping carrier having a pair of generally upstanding spaced-apart sidewalls and a bottom wall comprising a conveyor belt extending between said sidewalls. Hinge means are provided for pivotally connecting the upper edges of the closure member with the upper forward edges of the sidewalls for opening and closing the front end of the basket construction. Locking means are provided for locking said closure



member to the basket to prevent pivotal movement thereof when the shopping carrier is filled with merchandise.

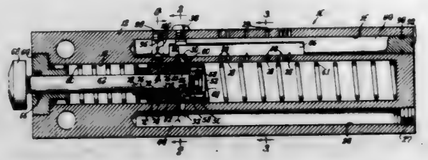
3,446,316
LANCE CARRIAGE STOP
Robert C. Kania, Gibsonia, and Thomas Gregord, Glenshaw, Pa., assignors to Titzel Engineering, Inc., Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 1, 1966, Ser. No. 569,420
Int. Cl. B66b *5/16;* **C21c** *5/42*
U.S. Cl. 187—83 **11 Claims**



We disclose in a carriage and stopping mechanism therefor mounted for ascending and descending movement along guideways therefor having a plurality of spaced stops disposed along the length thereof and providing arresting surfaces for engaging and holding said carriage, the combination comprising retractable anchor means disposed between said carriage and said guideways and engageable with said stops to define a descending position of said carriage, a retractable drawbar member mounted for limited movement upon said carriage and engageable with elevating means for said carriage, means for coupling said drawbar member when so engaged to said anchor means to retain said anchor means in said retracted position thereof, biasing means coupled to said anchor means for urging said anchor means into engagement with said stops, said biasing means being operable upon disengagement of said elevating means from said drawbar member and movement of said drawbar member to its retracted position, a stop bar movably mounted on said carriage, said anchor means being movably mounted on said stop

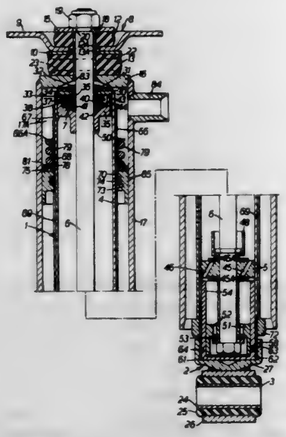
bar, and shock-absorbing means for limiting the movement of said stop bar, said anchor means being mounted on a stop bar, movably mounted on said carriage structure, and shock-absorbing means coupled to said stop bar.

3,446,317
ADJUSTABLE SHOCK ABSORBER
Bogdan Gryglas, Chicago, Ill., assignor to Efdyn Corporation, Chicago, Ill., a corporation of Illinois
Filed Aug. 28, 1967, Ser. No. 663,728
Int. Cl. F16d *57/00*; E05f *3/04, 3/10*
U.S. Cl. 188—88 8 Claims



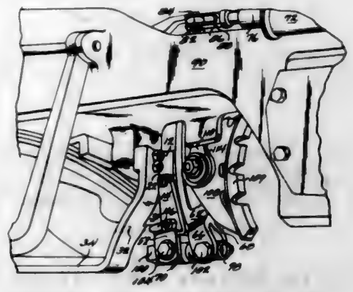
A shock absorber having ports through which fluid is metered from a primary chamber upon application of an impact force to a piston slidable in the chamber, and an adjustable flow control member for regulating the flow of fluid through the ports.

3,446,318
SUSPENSION SYSTEM AND SEAL MEANS THEREFOR
William A. Duckett, Kingsway, Ossett, England, assignor to Woodhead Manufacturing Company Limited, Kingsway, Ossett, England, a company of Great Britain
Filed Sept. 27, 1967, Ser. No. 671,087
Claims priority, application Great Britain, Sept. 28, 1966, 43,292/66
Int. Cl. F16d *57/00*; F16f *9/00*; F16j *15/56*
U.S. Cl. 188—100 9 Claims



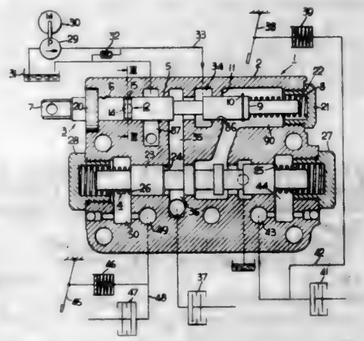
A suspension unit for a vehicle comprising a shock absorber of the telescopic hydraulic type, the relatively reciprocating parts respectively of which (i.e. the piston rod and casing) are connected to the sprung and unsprung masses of the vehicle, and an outer cylinder having a closed end connected to the piston rod. The outer cylinder surrounds and is separated by an annular space from the casing and is arranged to slide telescopically with respect thereto. An annular piston and sealing ring assembly forming sealing means is spaced from the closed end of the outer cylinder to provide a chamber for containing a fluid under pressure serving partially or wholly to support the sprung mass from the unsprung mass, the sealing means including a retaining ring biassing a sealing ring against a face of the piston assembly, the retaining ring being formed of low friction material.

3,446,319
BRAKE RIGGING MODIFICATION FOR COMPOSITION BRAKE SHOES
Leonard A. McLean, Jacksonville, Fla., assignor to Atlantic Coast Line Railroad Company, Jacksonville, Fla., a corporation of Virginia
Filed Apr. 3, 1967, Ser. No. 627,765
Int. Cl. F16d *65/14, 65/52*
U.S. Cl. 188—206 12 Claims



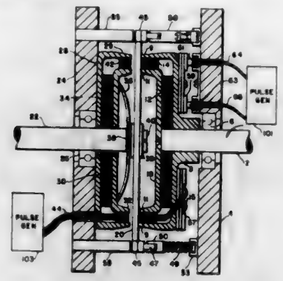
A unique bracket permanently fastened to an existing spring plank safety strap of a diesel locomotive truck, which permits the conversion of the braking system of the locomotive truck from a double shoe clasp-type of assembly to a single brake shoe assembly. The bracket consists of three separate plates with a stop plate welded to the spring plant safety strap and the other two plates fixedly secured on either side of the first member. The second and third members have downwardly extending flanges between which is fastened one end of a slack adjuster, which, in turn, is connected to and provides a fixed fulcrum for the bottom of the vertical brake head actuating lever.

3,446,320
DIFFERENTIAL LOCK
Robert E. Schott, New Berlin, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Aug. 15, 1967, Ser. No. 660,671
Int. Cl. F16d *41/24, 67/00*; F16h *57/10*
U.S. Cl. 192—4 7 Claims



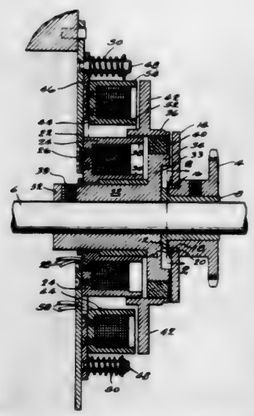
A hydraulically engageable clutch controlling differential rotation of the final drive shafts.

3,446,321
CLUTCH-BRAKE WITH PERMANENT MAGNETS
Alexander Nyman, Dover, Mass., assignor to Mohawk Data Sciences Corporation, East Herkimer, N.Y., a corporation of New York
Filed June 13, 1967, Ser. No. 645,814
Int. Cl. F16d *11/06, 13/22, 67/02*
U.S. Cl. 192—18 10 Claims



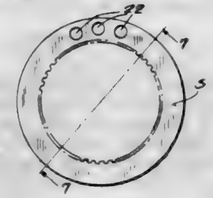
A rotatable, axially transferrable output disk is alternately shifted into latching engagement with two magnetic input members, one stationary and one rotating, thus causing alternating rotation and braking of the output. Each input member includes an annular, ceramic permanent magnet connected to a pair of pole pieces having annular, concentric pole faces adapted to engage the output disk. A degaussing coil stationed between each set of pole faces permits selective release of the disk whereby the output is transferred to the opposite state. For applications where fixed angular increments are desired at the output, spring assist means are provided to more positively control transfer of the output disk and stop lugs are provided to more accurately position it upon arrest.

3,446,322
ELECTROMAGNETIC CLUTCH WITH AUXILIARY CLUTCH OR BRAKE INDEPENDENTLY ENERGIZED
Bernard E. Wrensch, Brookfield, Wis., assignor to Stearns Electric Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed Sept. 12, 1967, Ser. No. 667,206
Int. Cl. F16d *11/06, 13/22, 67/02*
U.S. Cl. 192—18 6 Claims



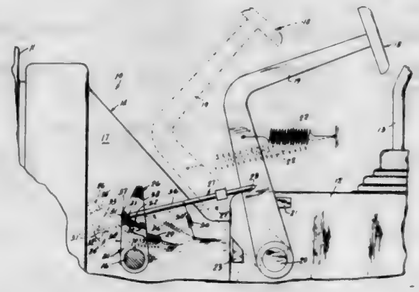
Axially aligned rotors have electromagnetic means for clutching them together, there being a separate electromagnetically operable clutch which may be used as a means for applying a brake to one of the rotors for operating selectively upon that rotor or upon both if they are clutched together.

3,446,323
CLUTCH PLATES HAVING MEANS TO PREVENT FLUTTER
Conrad R. Hilpert, Winnebago, Ill., assignor to Twin Disc Clutch Company, Racine, Wis., a corporation of Wisconsin
Filed June 2, 1967, Ser. No. 643,245
Int. Cl. F16d *13/22, 11/04, 23/10*
U.S. Cl. 192—70.11 3 Claims



Means for preventing disengaged clutch plates from fluttering, that is, from wobbling like a coin that is coming to rest after it has been spinning on its edge. This gyroscopic instability, caused when the plates do not rotate in a plane normal to the clutch axis, occurs when alternate plates rotate in opposite directions.

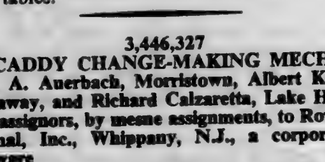
3,446,324
MECHANISM FOR RELEASING AND QUICKLY REENGAGING CLUTCHES
Peter C. Granata, Jr., 1025 S. May St., Chicago, Ill. 60607, Edward P. Andrychowski, 2900 N. Dora St., Franklin Park, Ill. 60131, and Charles A. Pantaleo, 820 S. Carpenter St., Chicago, Ill. 60607
Filed Aug. 2, 1967, Ser. No. 657,835
Int. Cl. F16d *19/00, 21/00, 23/00*
U.S. Cl. 192—99 3 Claims



A clutch mechanism for vehicles having a manual gear shift lever including a pivotal clutch shaft biased in one direction for effecting engagement of the clutch plates and pivotal in an opposite direction for disengaging the clutch plates. A clutch pedal is adapted to be pivotally mounted on the vehicle for movement from a released position to a depressed position. The clutch pedal is operatively connected to the clutch shaft by means of an elongated trip rod pivotally connected to the clutch pedal and extending at its free distal end to a trip block fixedly connected to the clutch shaft. In the released position of the clutch pedal the trip rod is biased so that the free end is adjacent an abutment surface or shoulder formed on the trip block. The shoulder extends in a direction which includes a component radially disposed with respect to the axis of rotation of the clutch shaft. As the clutch pedal is depressed a given distance the free end of the trip rod engages the shoulder of the trip block and causes the trip block and the clutch shaft to pivot in one direction sufficiently to disengage the clutch plates. As the clutch pedal is depressed further the free end of

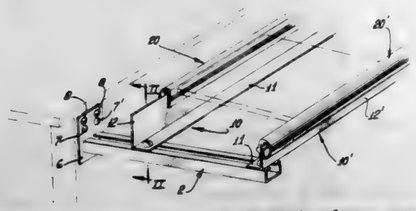
the trip rod becomes disengaged with the shoulder and the trip block and clutch shaft are immediately pivotally biased in an opposite direction to engage the clutch plates. Thus as the clutch pedal is depressed fully the clutch plates are first disengaged and then engaged again. The manual gear shift lever is shifted during the period in which the clutch plates are disengaged. When the clutch pedal is released the free end of the trip rod is again biased to a position adjacent the shoulder of the trip block.

3,446,325
PORTABLE SEAMLESS CONTINUOUS TROUGH FOR LIQUID AND SUPPORT THEREFOR
Edward S. Robbins, Jr., 600 N. Cave St., Tuscumbia, Ala. 35674
Filed July 31, 1967, Ser. No. 657,220
Int. Cl. B65g 11/10; A01k 5/00
U.S. Cl. 193—25 10 Claims



A trough for liquid formed from a continuous seamless plastic strip capable of being contained in a roll when not in use and unrolled when used, and being longitudinally grooved or having reduced areas to facilitate shaping of the trough in desired form, such as by bending the side portions toward each other, and with combination end closures apertured for drainage as well as for maintaining in a particular shape, and supporting means for such trough.

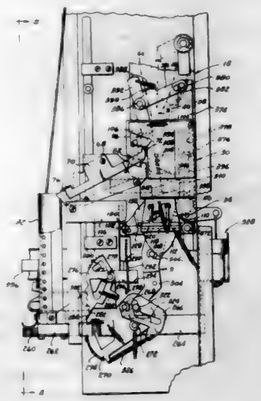
3,446,326
SLIDE AND BUMPER STRIP FOR ASSEMBLY TABLES
Douglas M. Sandefur, Los Angeles, Calif., assignor to Sandefur Engineering Co., Inc., Lawndale, Calif., a corporation of California
Filed Feb. 29, 1968, Ser. No. 709,325
Int. Cl. B65g 11/00, 11/16
U.S. Cl. 193—38 5 Claims



Relates to construction of extruded polymer composition work supporting and bumper strips arranged to resiliently grasp upstanding rigid supports and provide low friction trackways for units of work being worked on at assembly tables.

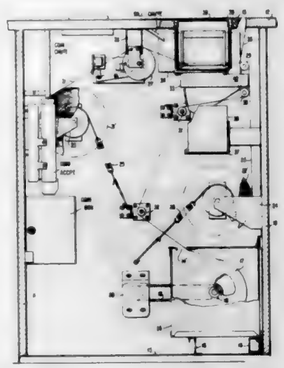
3,446,327
COIN CADDY CHANGE-MAKING MECHANISM
William A. Auerbach, Morristown, Albert Kurimsky, Rockaway, and Richard Calzaretta, Lake Hiawatha, N.J., assignors, by mesne assignments, to Rowe International, Inc., Whippany, N.J., a corporation of Delaware
Filed June 6, 1967, Ser. No. 643,853
Int. Cl. G07f 11/00, 5/24
U.S. Cl. 194—2 15 Claims

A coin mechanism for establishing credit and for giving change in coin of a certain denomination wherein a coin caddy assembly which receives coins from a totalizer retains the first coin of the certain denomination at the head of a change coin supply replenishing chute while passing the rest of the coins to a relatively large capacity coin caddy. When a purchase is made the retained coin is delivered to the change coin tube and the caddy delivers



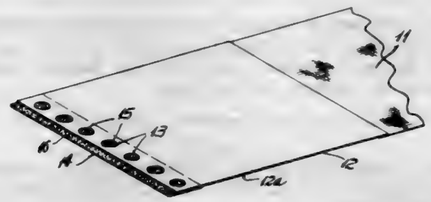
the rest of the coins to the cash box. When the coin return is operated the retained coin is moved out of the chute and to the caddy which returns all of the coins to the customer. Means is provided for slowing the first and third credit steps, each step corresponding to the value of the coin of the smallest denomination to be handled by the mechanism.

3,446,328
DEPOSITORY PACKAGING SYSTEM
David B. Boyce, Hialeah, Peter Minicucci, Jr., Fort Lauderdale, and Jerry A. Stegenga, Coral Gables, Fla., assignors to Milgo Electronic Corporation, Dade County, Fla., a corporation of Florida
Filed Oct. 9, 1967, Ser. No. 673,906
Int. Cl. G07f 1/06; B65b 9/00
U.S. Cl. 194—4 8 Claims



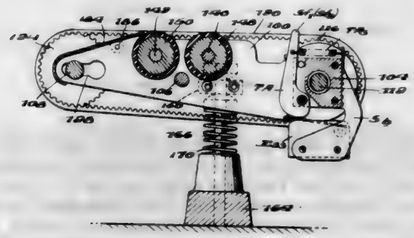
This invention provides an essential feature of an automatic depository system for use in banks and the like for packaging several items such as a depository slip, one or more pieces of currency, a passbook, coins, or other items to be definitely associated together after deposit and to the time of recording in the records of the bank. A cohesive-coated first sheet is passed beneath a depository slot, items are deposited through the slot thereon, a second cohesive-coated sheet is passed over the deposited items and pressed thereagainst as the pair of sheets is withdrawn from the deposit area in response to a deposit determination signal, providing a self-sealing package at ends and edges but leaving the items unadhered to the sheets since cohesive material sticks only to itself.

3,446,329
DUPLICATING RIBBONS WITH SELF-ATTACHMENT MEANS
George F. Bagnall, West Chester, Pa., assignor to Columbia Ribbon and Carbon Manufacturing Co., Inc., Glen Cove, N.Y., a corporation of New York
Filed Oct. 28, 1966, Ser. No. 590,341
Int. Cl. B41j 31/02
U.S. Cl. 197—172 6 Claims



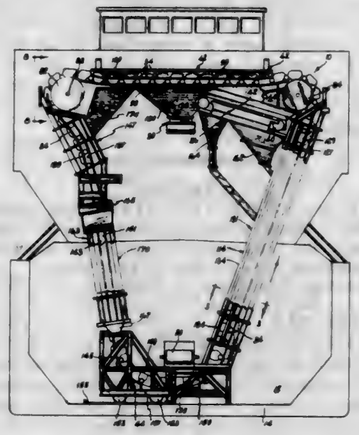
Duplicating ribbon having a leader section which can be adhesively attached to itself around a ribbon-winding spool. The leader section has a multiplicity of openings therein and an adhesive tape bonded to the underside is exposed through the openings and extends beyond the the leading edge to provide a narrow strip of exposed adhesive.

3,446,330
SPRING-SUPPORTED BELT CONVEYOR
Kurt Rudolf Schneider, 4 Juliand St., Bainbridge, N.Y. 13733
Filed Apr. 28, 1965, Ser. No. 451,468
Int. Cl. B65g 21/00
U.S. Cl. 198—117 15 Claims



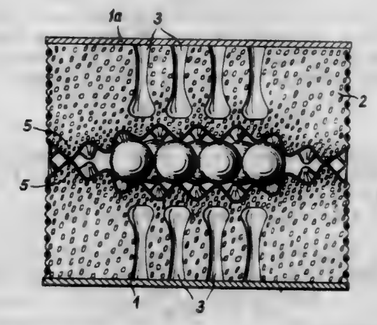
This disclosure relates to a conveying mechanism for feeding flat articles along a predetermined path and includes a conveyor-belt stage having a frame to which is journalled an endless conveyor belt for moving articles from an entrance end toward an article discharge end of the mechanism, and spring means and means for effecting bodily pitching and rolling action of the conveyor-belt stage are disposed generally medially of the frame between the article entrance and discharge ends to constantly compensate for article thickness variations and to produce generally uniform pressure on all articles as they are advanced by the conveyor belt.

3,446,331
UNLOADING SYSTEM
Nolan H. Williams, Palatine, Ill., assignor to Siebert & Associates, Inc., Chicago, Ill., a corporation of Illinois
Filed May 3, 1966, Ser. No. 547,360
Int. Cl. B65g 17/16, 67/58, 37/00
U.S. Cl. 198—141 5 Claims



An elevator mechanism arranged in a generally vertical plane and including a transfer conveyor carrying buckets movable along a closed path which includes a generally horizontal upper run and a downwardly directed side run. Provision is made for directing the material from the buckets downwardly between the conveyor supports as the buckets traverse the generally horizontal run of the conveyor, for retaining the material in the buckets as they move upwardly toward a discharge station, and for returning spilled material from the discharge station to the ascending buckets. Provision is also made for varying the length of the conveyor path to compensate for wear.

3,446,332
STEEP CONVEYOR INSTALLATION
Gert Bechtloff, Wilhelmshaven, Germany, assignor to Beteiligungs- und Patentverwaltungsgesellschaft mit beschrankter Haftung, Essen, Germany
Filed June 8, 1967, Ser. No. 644,624
Claims priority, application Germany, Oct. 29, 1966, B 89,626
Int. Cl. B65g 15/14, 15/42
U.S. Cl. 198—165 3 Claims



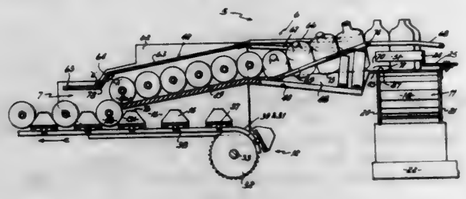
The present invention relates to a steep conveyor installation in which two conveyor belts have two sides facing each other over a steep conveyor section while the said two conveyor belts are provided with layers of foam

material adapted to encase the material to be elevated therebetween. This invention is particularly directed to the foam material which is characterized primarily, in that it is provided with cavities in the central portion only of the foam material layer, but not in the marginal zones of said layer. These cavities extend from that side of the foam material layer which is connected to the backing or belt in the direction to the opposite side of the foam material layer, but ending in spaced relationship thereto. When the foam material layer is compressed in the steep section of the conveyor, only the central portion of the foamed material layer is compressed and forms a kind of trough with the lateral zones of said layer forming the side walls of said trough.

3,446,333
TREATING AUSTENITIC STAINLESS STEELS
Harshad J. Bhatt, Pittsburgh, and Peter R. Swann, Monroeville, Pa., assignors to United States Steel Corporation, a corporation of Delaware
No Drawing. Filed June 7, 1966, Ser. No. 555,685
Int. Cl. C21c *1/30, 1/60, 7/14*
U.S. Cl. 148—12.4 10 Claims

1. A method of improving the resistance of austenitic stainless steels to stress corrosion cracking which comprises hot working said steel to a finishing temperature in the range of from about 1200° F. to about 1800° F., low temperature annealing in the range of from about 1000° F. to about 1600° F. and thereafter quenching.

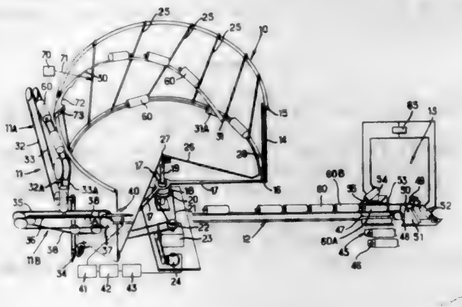
3,446,334
BOTTLE LETDOWN MECHANISM
Edmund B. Donner, Washington, Pa., assignor to Solar Engineering & Equipment Co., Beaver, Pa., a corporation of Pennsylvania
Filed Oct. 17, 1967, Ser. No. 675,856
Int. Cl. B65g *47/00, 47/24*
U.S. Cl. 198—26 8 Claims



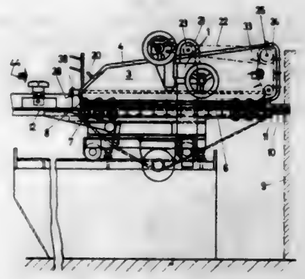
A mechanism for high speed transfer of bottles from a vertical to a horizontal position. The transfer is effected by a network of guide means including a series of rods to which a continuous stream of upstanding bottles is supplied and from which horizontally positioned bottles exit onto an output conveyor in a spaced stream.

3,446,335
AUTOMATIC DEVICES FOR DISTRIBUTING AND DIRECTING VARIOUS OBJECTS SUCH AS FLASKS, TUBES OR THE LIKE
Louis Gilbert Dubuit, 60 Rue Vitruve, Paris 20, France
Filed May 15, 1967, Ser. No. 638,210
Claims priority, application France, May 18, 1966, 62,014; Apr. 6, 1967, 101,687
Int. Cl. B65g *47/24*
U.S. Cl. 198—33 11 Claims

The chamber into which the objects are emptied in loose bulk and from which they are extracted by transfer members is formed by a bottom wall and a cylindrical wall, separate from each other, at least one of these walls being fixed, which reduces the frictional rubbing to which the objects are subjected. A photoelectric detector mounted downstream of this chamber stops the transfer members in the case of an excessive flow rate, which regularises the rate of flow without the necessity of recycling objects delivered in excess quantities and therefore again reduces the handling of the objects.



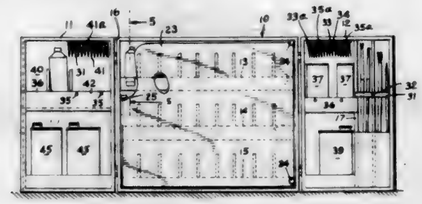
3,446,336
DEVICE FOR FEEDING VENEERS INTO A VENEER COMPOSING MACHINE FOR GLUING VENEERS TOGETHER
Ernst Hunziker, Brugg, Switzerland, assignor to Georg Fischer AG Brugg, Brugg, Switzerland
Filed Dec. 11, 1967, Ser. No. 689,510
Claims priority, application Switzerland, Dec. 16, 1966, 18,098/66
Int. Cl. B65g *47/28*; B65h *37/04*
U.S. Cl. 198—34 8 Claims



Veneer piece feeding device in which veneer pieces are fed in succession along a path with spacer members mounted on carriage members which are freely moveably mounted on endless guiding rails above the path of the veneer pieces. The carriage members are controlled by the movement of the veneer pieces into the device so that the spacer members are interposed between the ends of successive veneer pieces and prevent the said ends from overlapping.

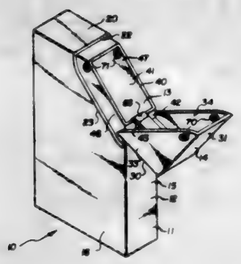
3,446,337
ARTISTS' SUPPLY CASES
Laura Mae Blackmon, 4338 Emory Road, El Paso, Tex. 79922
Filed Mar. 22, 1966, Ser. No. 536,334
Int. Cl. B44d *3/04*
U.S. Cl. 206—1.7 4 Claims

The invention disclosed herein is an upright artists' supply case consisting of a main box with facing, hinged, cover boxes, containing shelves and upright partitions to facilitate the storage of tubes of paint, brushes, and other artists' equipment. Underneath each space for storage of paint tubes is a strip designed to display a paint sample.



Means are included for storing a palette in the main box. The cover boxes contain brush-holding compartments with means to keep brushes in an upright position during storage and a brush-holding device which attaches for use when the box is open.

3,446,338
PACKAGE
David B. Bozyk, 1547 Comox St., Vancouver, British Columbia, Canada
Filed Jan. 2, 1968, Ser. No. 695,141
Int. Cl. A24f *15/00*; B65d *85/10, 85/12*
U.S. Cl. 206—41.2 18 Claims



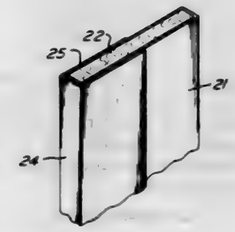
A package for cigarettes and the like having a moveable platform supporting its contents and a hinged cover connected by a pull strip to the platform for elevating and lowering the latter as the cover is swung between closed and open positions.

3,446,339
PILL DISPENSER HAVING A PERMANENTLY ATTACHED DISPENSING MECHANISM
Gordon J. Thompson, 621 Running Water Circle SE., Albuquerque, N. Mex. 87112
Filed Aug. 21, 1967, Ser. No. 663,197
Int. Cl. B65d *83/04*
U.S. Cl. 206—42 8 Claims



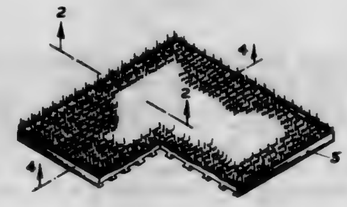
A pill container having separate independent compartments, each containing a certain dosage, and having dispenser means for dispensing the dosages from each compartment, one at a time in a regular order, the container having means thereon to prevent alteration or reversal of the order in which the compartments are opened, stop means to prevent further activation of the dispenser means, after a certain number of dosages have been dispensed, and catch means for preventing removal of the dispenser means from the container means after they are attached to one another.

3,446,340
CAULKING STRIP
William T. Mullen, % William T. Mullen, Inc., 3133 N. Broad St., Philadelphia, Pa. 19132
Filed June 30, 1967, Ser. No. 650,456
Int. Cl. B65d *85/00*
U.S. Cl. 206—46 10 Claims



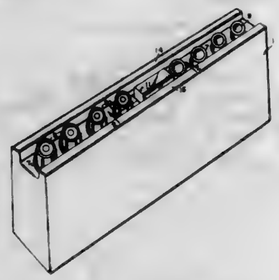
A caulking strip for filling the gaps, horizontal and/or vertical, between panels which strip has an outer finished surface portion and a precompressed slow expansion inner sealing strip portion and which is inserted in the gap for expansion to seal.

3,446,341
PLASTIC PRODUCT
Louis F. Kutik, Fort Lauderdale, Fla., assignor of fifty percent to Erich W. Gronemeyer, Fort Lauderdale, Fla.
Original application Oct. 31, 1966, Ser. No. 590,834. Divided and this application May 27, 1968, Ser. No. 747,400
Int. Cl. B65d *85/00*
U.S. Cl. 206—46 1 Claim



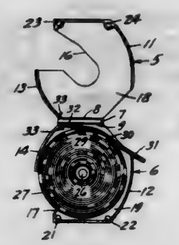
A package for fragile components including a pair of plastic plates provides on opposite sides of a fragile component and each having a plurality of integral bristles which are interdigitated to confine the component and individually deflectable to accommodate the component. The distance between the plates is at least as great as the corresponding dimension of the component, and the length of each bristle is at least one-half as great as that dimension to allow the interdigitating of the bristles. The plastic elements protect the component and securely hold it against shifting.

3,446,342
PACKAGE FOR MAILING BIOLOGICAL SAMPLES TO LABORATORIES FOR SPECIAL TESTS
Raymond S. Michel, Portland, Oreg., assignor to United Medical Laboratories, Inc., Portland, Oreg., a corporation of Oregon
Filed Mar. 6, 1967, Ser. No. 620,800
Int. Cl. B65d *79/00, 85/02, 25/12, 1/00*
U.S. Cl. 206—47 2 Claims



A package comprising a holder for stoppered glass tubes and related articles within a mailing carton or wrapper having printed indicia on its exterior identifying contents of the holder, mailing instructions for the package, and instruction cards related to the contents of the holder for use by a laboratory addressee.

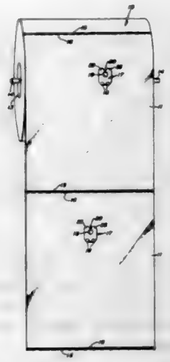
3,446,343
TAPE CARTRIDGE
Philip H. Zimmer, Minneapolis, and Joannes F. Van Rooij, St. Paul, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Apr. 8, 1968, Ser. No. 719,553
Int. Cl. B65h *55/00, 75/02*; B65d *85/04*
U.S. Cl. 206—52 3 Claims



A cartridge for supplying and dispensing convolutely wound strip material which material has the free end thereof held to the outer convolution by a strip of pressure-sensitive adhesive tape. The tape strip is formed with a tap at each end affording easy withdrawal of the free end of the strip material from the cartridge by positioning the release tab and maintaining it at the outlet opening.

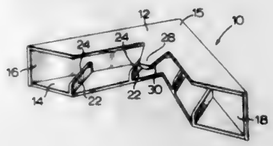
3,446,344
ROLL OF FLEXIBLE PLASTIC BAGS IN PARTIBLE SEQUENTIAL CONTINUITY, THE INDIVIDUAL BAGS HAVING RESPECTIVELY ECHELONED SHEET PLASTIC CLOSURE FACILITIES
Jerre H. Paxton, P.O. Box 2098, Yakima, Wash. 98902
Filed Aug. 24, 1967, Ser. No. 662,951
Int. Cl. B65h *55/00*; B65b *75/02*; B65d *33/24*
U.S. Cl. 206—59 5 Claims

A roll of flexible plastic bags in partible sequential continuity, the individual bags of which are provided with sheet plastic closure facilities the material of which is substantially thicker than the film comprising said bags and in which said closure facilities are in echeloned or laterally



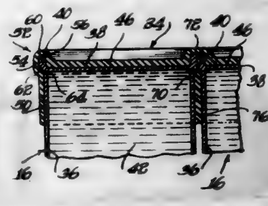
staggered relation with each other to distribute the thickness of said closure facilities relatively uniformly throughout said roll.

3,446,345
SASH PROTECTORS
Ottar Arvid Frosoy, 47 Chestnut Hill Parkway, Islington, Ontario, Canada
Filed Mar. 22, 1968, Ser. No. 715,236
Int. Cl. B65d *85/30, 81/02*; A47b *95/00*
U.S. Cl. 206—60 10 Claims



A plastic clip for attachment to the corners of door and window sashes for spacing stacked sashes from each other and for protecting the corners of said sashes.

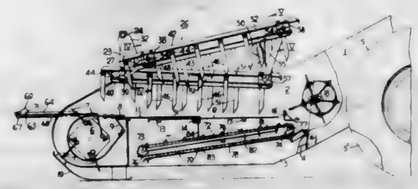
3,446,346
PACKAGE OF CANS
Keith W. Burge, 650 Wicklow Lane, Deerfield, Ill. 60015
Filed Nov. 30, 1966, Ser. No. 598,012
Int. Cl. B65d *1/00, 73/00, 81/00, 89/00*
U.S. Cl. 206—65 9 Claims



A method and apparatus for packaging a group of containers. The ends of the containers, as a unit, are

dipped into a bath of molten plastic material. When removed, the plastic, conforming to the contours of the container ends, solidifies to form plastic carrier structure. A handle may be imbedded between the containers prior to dipping so that it will be affixed to the plastic upon the solidification thereof.

3,446,347
PICKUP HEADER
Howard W. French and Gordon M. McDaniel, Independence, Mo., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Mar. 6, 1967, Ser. No. 620,685
Int. Cl. A01d *45/22, 47/00*
U.S. Cl. 209—3 7 Claims



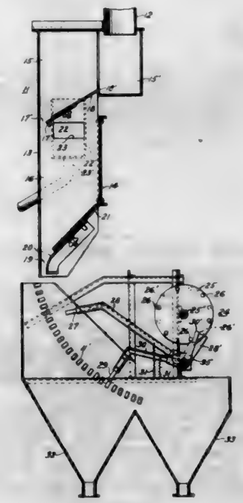
A harvester header has a straw walker rake mechanism including coacting pairs of movable tines for tearing a mat of bean-bearing vines. Screens disposed beneath the tines separate crop from foreign material, and a raddle conveyor moves the separated crop material to a thresher.

3,446,348
PROCESS FOR TREATING CLAY
Paul Sennett and James P. Olivier, Macon, Ga., assignors to Freeport Sulphur Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 15, 1965, Ser. No. 496,716
Int. Cl. B03d *1/00*
U.S. Cl. 209—5 12 Claims

Process for varying the titanium content of finely divided titanium-containing ores by adding to an aqueous dispersion of the ore a calcium, barium, strontium or magnesium hydroxide or salt at a specific alkaline pH. In the process, a flocculated ore rich in titanium settles, leaving dispersed an ore of less concentration of titanium than the original finely divided titanium-containing ore.

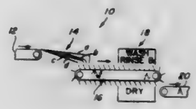
3,446,349
APPARATUS AND METHOD FOR SEPARATING AND RECOVERING RELATIVELY COARSE MINERAL PARTICLES AND RELATIVELY FINE MINERAL PARTICLES FROM A SLURRY CONTAINING SAID PARTICLES
William Benzon, Johnstown, Pa., assignor to Bethlehem Steel Corporation, a corporation of Delaware
Filed Mar. 16, 1966, Ser. No. 534,717
Int. Cl. B03b *7/00*
U.S. Cl. 209—17 4 Claims

Apparatus whereby relatively coarse mineral particles and relatively fine mineral particles may be separated and recovered from a slurry containing said mineral particles. The apparatus includes a sieve bend, means for delivering the slurry to the sieve bend and means for rapping the sieve bend at regularly timed intervals at spaced points along the width of the sieve bend. The means for delivering the slurry to the sieve bend includes a feed hopper, means for feeding the slurry to the hopper and means for controlling the height of the slurry in the hopper whereby a "static-head" is formed in the slurry to thereby feed the slurry at a desired velocity to the sieve bend. A method of separating the relatively coarse mineral particles and



the relatively fine mineral particles from the slurry is also described.

3,446,350
SORTER AND FEEDER FOR DISHWASHING MACHINES
William Winning Lowrie, 6 Seymour Crescent, St. Albert, Alberta, Canada
Filed July 13, 1966, Ser. No. 565,008
Int. Cl. B07b *13/06*; B07c *5/06*
U.S. Cl. 209—97 10 Claims

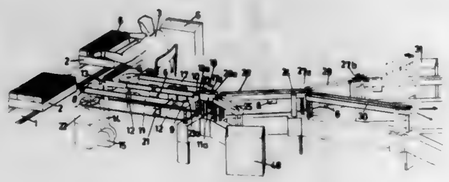


A sorting apparatus which can sort generally disc-shaped articles such as chinaware according to size, having a number of paths of different widths and branching from a feed surface, arranged in such a manner as to effect gradual separation of the various groups of articles without sudden dropping of any of these articles during the separation.

3,446,351
METHOD AND APPARATUS FOR SORTING CODED SEED BAGS
Alfons Born, Viersen, Germany, assignor to Dom-Samen G.m.b.H., Kevelaer, Germany
Filed Jan. 12, 1968, Ser. No. 697,415
Claims priority, application Germany, Jan. 19, 1967, D 52,062
Int. Cl. B07c *5/34*; G01n *21/30*; H01j *39/12*
U.S. Cl. 209—111.7 12 Claims

Method and apparatus for sorting bags, such as seed bags, in which code lines are placed on the bags at one end on one side and the bags are suspended between the belts of a belt conveyor with the coded portions projecting above the belts. Photoelectric scanning means

are located along the belts to scan the coded regions of the bags. Diverting gates in the belt conveyor divert the bags to various receiving stations and are under the control of the scanning means.



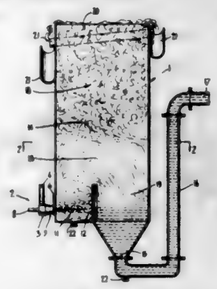
3,446,352
METHOD AND APPARATUS FOR WASHING AND GRADING SWARF, FOR USE IN THE MINING OR THE MINERAL-OIL INDUSTRY
Jean Sabores and Jacques Esquevin, Pau, France, assignors to Societe Nationale des Petroles d'Aquitaine, Courbevoie, France, a corporation of France
Filed Aug. 5, 1966, Ser. No. 570,467
Claims priority, application France, Aug. 12, 1965, 28,209
Int. Cl. B03b *3/34*
U.S. Cl. 209—161 9 Claims



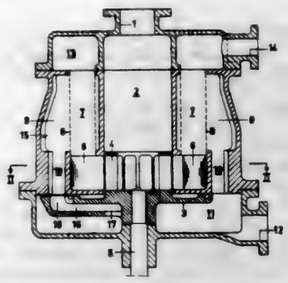
In a device for washing and separating solid particles a conical vessel is provided with a discharge valve at its apex, a liquid inlet beneath the valve and a plurality of valved liquid jet inlets disposed above the discharge valve along a portion of the vessel length. The top of the vessel is provided with an overflow trough and beneath the discharge valve and liquid inlet a container is disposed for receiving the sinking solids. Zones of turbulence in an ascending liquid stream are created by the jets and a uniform laminar flow is maintained above the topmost turbulent zone.

3,446,353
METHOD AND APPARATUS FOR FROTH FLOTATION
William John Nankivell Davis, Broken Hill South, New South Wales, Australia, assignor to The Zinc Corporation Limited, Melbourne, Victoria, Australia
Filed Apr. 25, 1966, Ser. No. 544,876
Int. Cl. B03d *1/02, 1/22*
U.S. Cl. 209—164 11 Claims

A froth flotation procedure which comprises injecting into a body of pulp in a flotation vessel a pulp-air jet consisting of a jet of pulp under pressure and a jet of air under pressure, the pulp jet and air jet being in contact as they enter the pulp body, forming air bubbles at the interface between the pulp jet and the air jet, dispersing the air bubbles through the pulp jet to form a pulp-air mixture, and forming bubble-particle aggregates within the pulp-air mixture.



3,446,354
METHOD FOR FRACTIONATING A SUSPENSION OF SOLID PARTICLES
Karl Arvid Skardal, Stockholm, Sweden, assignor to Aktiebolaget Celleco, Stockholm, Sweden, a corporation of Sweden
Filed Dec. 13, 1967, Ser. No. 690,355
Claims priority, application Sweden, Dec. 19, 1966, 17,329/66
Int. Cl. B07b *1/22*; B01d *33/00*
U.S. Cl. 209—250 2 Claims

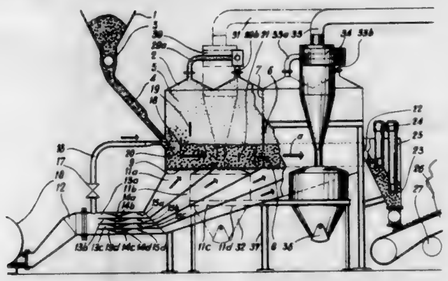


Fractionation of a suspension of solid particles is effected by flowing the suspension under pressure through a cylindrical screen and rotating the suspension about the longitudinal axis of the screen and alternating the pressure around the screen between a negative pressure and a positive pressure in relation to the pressure within the screen.

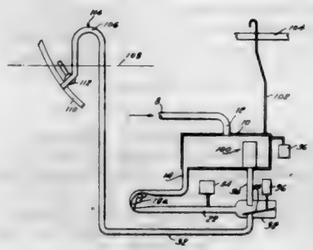
3,446,355
PROCESS AND APPARATUS FOR PNEUMATICALLY CLASSIFYING PULVERULENT MATERIAL
Michel Boucraut, Metz, and Imre Toth, Hy-Metz, France, assignors to Institut de Recherches de la Siderurgie Francaise, Saint-Germain-en-Laye, France
Filed Feb. 28, 1967, Ser. No. 619,275
Claims priority, application France, Mar. 2, 1966, 51,582
Int. Cl. B07b *3/02*
U.S. Cl. 209—474 16 Claims

A process and apparatus for pneumatically classifying pulverulent material in which a continuous stream of pulverulent material is fed at one end of an elongated relatively high and narrow receptacle into the latter and in

which a stream of gas under pressure is fed with such a speed through the perforated bottom of the receptacle to form above the perforated bottom a layer of large size particles in suspension without lifting the largest particles out of the layer, while the small size particles are lifted out of the layer into the space above the latter, and in which the larger size particles are continuously discharged from the other end of the receptacle while the small size particles are discharged together with the gas from the top region of the receptacle.



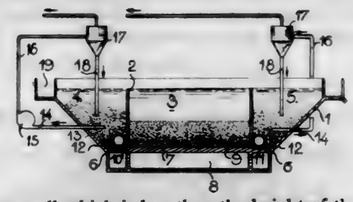
3,446,356
WASTE DISPOSAL SYSTEM
Richard D. May, Twin Bridge Acres Road, Westport, Conn. 06880
Filed Nov. 29, 1966, Ser. No. 597,765
Int. Cl. B01d *21/24, 33/38*
U.S. Cl. 210—117 19 Claims



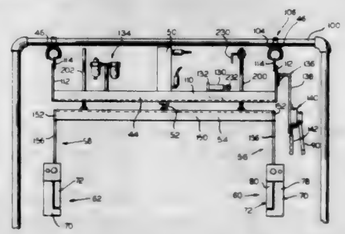
A system for the disposal of waste from toilets, in which the toilet waste is fed into a tank, the contents of the tank are recirculated independently of the toilet, thereby to break down the solids content thereof, the contents of the tank subsequently being discharged. A pressure-sensitive telescoping structure of novel design is utilized to assist in the breaking up of such solids content.

3,446,357
CLARIFYING VESSEL FOR LIQUIDS
Cyril Gomella, Maisons-Laffitte, France, assignor to Societe d'Etudes pour le Traitement et l'Utilisation des Eaux (S.E.T.U.D.E.), Paris, France, a French society
Filed Aug. 29, 1967, Ser. No. 664,200
Claims priority, application France, Sept. 28, 1966, 78,056
Int. Cl. B01d *21/10*
U.S. Cl. 210—195 7 Claims

A clarifying vessel for liquids containing impurities comprising a general exterior container within which is arranged a pretreatment compartment for a fluidized bed process through which the impure liquid is arranged to initially travel from bottom to top and a filtration compartment through which the pretreated liquid is subsequently arranged to travel from top to bottom, these two compartments being adjacent in the interior of the general container and being separated one from the other by a dividing wall which is less than the height of the general exterior container.



3,446,358
DEVICE FOR SEPARATING PLATES AND FRAMES OF FILTER PRESSES
Russell F. Kratochvil, North Aurora, and William C. Eggert, Aurora, Ill., assignors to D. R. Sperry & Co., a corporation of Illinois
Filed June 23, 1966, Ser. No. 559,760
Int. Cl. B01d *25/32*
U.S. Cl. 210—230 7 Claims



A device for separating filter press units of a filter press, such as filter press plates and frames, wherein a pair of composite dogs, each including substantially planar portions disposed to be placed in coplanar relation, are positioned on either side of a filter press, and to separate adjacent filter press units, the planar portions of the respective dog pairs are positioned between the handles of an adjacent pair of such filter press units, and one member of each dog pair is moved relative to the other member thereof and against the corresponding handle of the filter press unit to be separated.

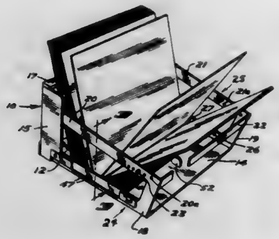
3,446,359
DESALINATION ASSEMBLY AND ITS METHOD OF MANUFACTURE
Sidney Loeb, Los Angeles, Stanley Wasilewski, Santa Monica, and Edward Selover and Andre Balla, Los Angeles, Calif., assignors to The Regents of the University of California, Berkeley, Calif., a corporation of California
Filed July 20, 1965, Ser. No. 473,449
Int. Cl. B01d *13/04*
U.S. Cl. 210—490 15 Claims



Reverse osmosis apparatus adapted for water desalinization is prepared by dissolving a cellulose derivative

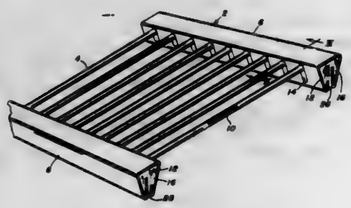
such as cellulose acetate and pore-producing agent in a solvent, such as formamide and acetone, casting the resultant solution as a thin tubular sheet on a tube as mandrel, and curing by heating under pressure in place in or on the perforated supporting tube or pipe.

3,446,360
SELF-ACTUATING RECORD HOLDING APPARATUS
Julian Gutierrez, 6233 Brookview Ave. S., Minneapolis, Minn. 55424
Filed Oct. 28, 1966, Ser. No. 590,252
Int. Cl. G11b *1/00*; A47b *81/06*
U.S. Cl. 211—40 1 Claim



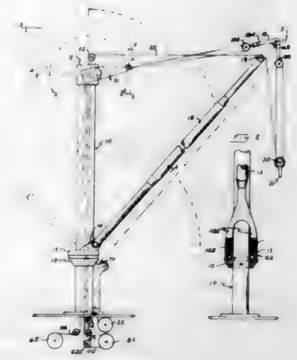
A phonograph record rack consisting of a frame, a plurality of spaced parallel axially pivoted record holding members, each comprising a yoke portion to receive a record and having a depending leg portion of such length and arrangement as to engage an adjacent like leg portion for a sufficient interval to tilt the record holding member of said leg portion to a point beyond its center of gravity whereby said tilted record holding member in like manner automatically engages and tilts the record holding member adjacent thereto.

3,446,361
RACK AND METHOD OF MAKING THE SAME
Donald L. Douty, Franklin Township, Westmoreland County, Pa., assignor to United States Steel Corporation, a corporation of Delaware
Filed Dec. 23, 1966, Ser. No. 604,281
Int. Cl. A47f *5/00*; C09d *5/02, 5/04*
U.S. Cl. 211—153 2 Claims



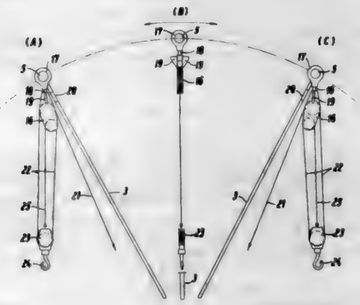
A wire rack comprising plastic-coated cross members such as wires extending across the rack and connected to metal edge members by a plastic material in each edge member that forms a homogeneous bond with the plastic on the wires. The method of making the rack includes pre-coating the wires with a plastic material, connecting the wires to the metal edge members by application of additional plastic material, and then curing the additional plastic to form a homogeneous bond.

3,446,362
DERRICK FOR SHIPS
William L. Banks, Jr., Roslyn Heights, N.Y., assignor to Testing Associates, Inc., New York, N.Y.
Filed July 10, 1967, Ser. No. 655,715
Int. Cl. B66c *23/52, 23/06, 23/62*
U.S. Cl. 212—3 8 Claims



A derrick or cargo hoisting device for ships having a mast, a single boom mounted at its base on a turntable around the mast and a double topping lift at the top of the mast and in which the double topping lift is comprised of two pivotally mounted topping lift arms, each one connected to the boom at its free end by rigging lines and said lines are rove through swinging swivel elements at each side of the topping lift to extend to and be rove upon turning winch drums affixed on deck or below deck, said derrick providing a lifting movement of the boom and said turntable mounted around the base of the mast to support the lower end of the boom and permit a rotation of the base of the boom around the mast.

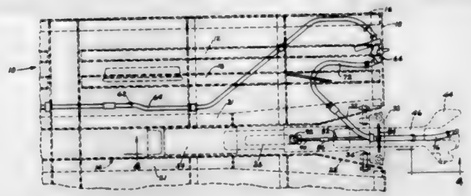
3,446,363
CARGO LOADING DEVICE
Heinz Ferdinand Johannes Sprengel, Hamburg, Germany, assignor to Blohm & Voss A.G., Hamburg-Steinuerder, Germany, a German company
Filed Oct. 4, 1967, Ser. No. 672,855
Claims priority, application Germany, Nov. 18, 1966, B 89,882
Int. Cl. B66c *23/52*; B66d *3/04*
U.S. Cl. 212—3 10 Claims



Cargo loading device for shipboard use provided with a derrick hingedly supported at deck level between two posts or masts with a double span construction and two mutually independent span winches. Guide devices at the heads of the ports to guide the span tackles automatically and a block pendant pivotally arranged at one side of a

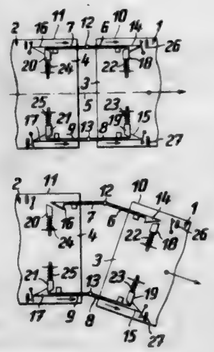
transverse head pin of a derrick boom carries a swivel at its lower end to which the upper cargo block is rotatably fastened.

3,446,364
TRAINLINE ARRANGEMENT FOR LONG LENGTH RAILWAY CARS
Boris S. Terlecky, St. Louis County, Mo., assignor to ACF Industries Incorporated, New York, N.Y., a corporation of New Jersey
Filed May 8, 1967, Ser. No. 636,880
Int. Cl. B61k *13/00*; B61g *7/00, 9/20*
U.S. Cl. 213—1 8 Claims



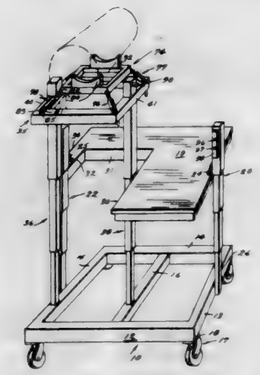
A trainline arrangement having an end portion extending from an angle cock mounted on the end of the car to a position beneath the center sill and thence outwardly beneath the coupler carrier and coupler shank to the coupler. Cushion means having a relatively long travel of around at least ten (10) inches are operatively connected to the coupler shank for cushioning buff forces, and means connect the cushion means to the trainline end portion for longitudinal movement of the end portion with the cushion means and the coupler. The trainline end portion is supported beneath the center sill for movement with the coupler relative to the underframe upon impact forces being exerted against the coupler and a cushioned travel of the cushion means. The angle cock is mounted beneath the adjacent end sill along one side thereof in order to be easily accessible for operation.

3,446,365
VEHICLE COUPLING
Alfred Wriedt, Schulstrasse, Ulzburg, Holstein, Germany
Filed Oct. 26, 1966, Ser. No. 589,639
Claims priority, application Germany, Oct. 28, 1965, W 40,188
Int. Cl. B61g *3/00*
U.S. Cl. 213—78 8 Claims



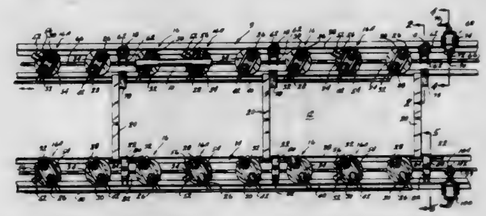
A vehicle coupling arrangement for interconnected towed vehicles such as trailers, articulated truck conveyor systems, rail cars, and the like wherein the vehicles are normally interconnected by a pair of coupling members offset with respect to the longitudinal axis of the vehicles, and upon the vehicles traversing a curved path the interconnection between vehicles is limited to the coupling member radially disposed inwardly of the vehicle axis with respect to the curved path of movement in order to provide improved clearance characteristics between vehicles moving in a curved path.

3,446,366
MAINTENANCE LIFT
Norman H. Miller, 8715 Woolworth Ave., Omaha, Nebr. 68124
Filed Apr. 19, 1967, Ser. No. 632,075
Int. Cl. B62b *3/02*; B60p *1/02*; B25j *5/00*
U.S. Cl. 214—1 5 Claims



A lift provided with a mobile rectangular base structure, a vertically adjustable platform and a vertically adjustable frame with a load support thereon mounted on the base structure. The platform, which is supported by telescoping jack assemblies, has a cut-out portion adapted to receive the frame and is substantially L-shaped. The frame is rectangular and is also mounted on telescoping jack assemblies. The relative elevation of the frame and the platform can be adjusted and the attitude and elevation of the load support relative to the frame, can be adjusted by means of four independently extensible elements which extend between the frame and the load support.

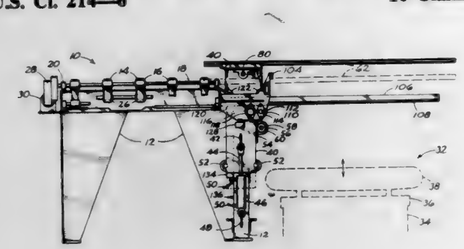
3,446,367
CONVEYOR FOR PIPE SECTIONS
Everett R. Anderson, Pico Rivera, Calif., assignor to Pacific Pipeline Construction Company, a corporation of California
Filed May 23, 1967, Ser. No. 640,667
Int. Cl. B65h *51/26*; B65g *47/02, 47/34*
U.S. Cl. 214—1 3 Claims



A pipe conveyor including transfer structure for moving pipes between a roll rack and an axial-motion apparatus without damage. While being moved axially, pipes are carried between cooperating pairs of canted wheels which revolve a pipe as it moves along an axial path. To place

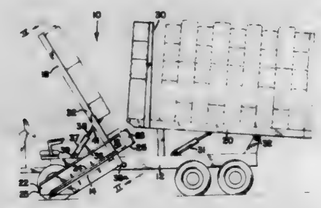
a pipe on the wheels, or remove it therefrom, spaced-apart pivotally-mounted transfer units cooperatively carry the pipe along with the wheel pairs, to lower or raise the pipe to the desired position. A pipe is lowered onto the wheel pairs in accurately-positioned relationship and is gently removed therefrom by a plurality of spaced-apart cushioned rollers or wheels.

3,446,368
MATERIAL TRANSFERRING APPARATUS
Victor R. Nelson, 7710 N. Denver Ave., Portland, Oreg. 97217
Filed Dec. 1, 1966, Ser. No. 598,322
Int. Cl. B65g *60/00, 61/00*
U.S. Cl. 214—6 **10 Claims**



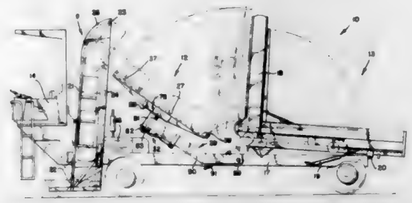
The apparatus of this invention includes material supporting means mounted for vertical and horizontal reciprocation in such manner as to move from an initial position underlying material on an infeed support, first vertically upward to elevate the material from the infeed support, then horizontally forward to position the material above a second station, then vertically downward but still above said second station, and finally horizontally rearward to said initial position for underlying subsequently deposited material on the infeed support, this final movement being accompanied by withdrawal of the support means from under the material and deposit of the latter at the second station.

3,446,369
AUTOMATIC BALE WAGON
Patrick L. May and Ralph E. Beyer, Memphis, Tenn., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Aug. 28, 1967, Ser. No. 663,860
Int. Cl. B65g *57/28, 25/08*
U.S. Cl. 214—6 **13 Claims**



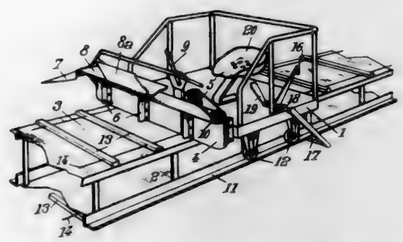
A self-propelled bale wagon having a stack-forming and a stack-receiving bed for arranging and accumulating bales in an interlocked pattern. The stack-forming bed includes elevating means having bale penetrating spikes for moving bales therealong and spring-loaded retainers for maintaining the position of the bales on the stack-forming bed. The bale wagon components are operated by a hydraulic system controlled by mechanical indexers. The indexers provide automatic means for accumulating bales in a predetermined, interlocked pattern.

3,446,370
ROTARY ACCUMULATOR FOR AUTOMATIC BALE HANDLING VEHICLE
Wilbur H. Clendenin, Ava, Ill., and Monroe C. Barrett, Fenton L. Kenna, Jr., and Robert M. Fachini, Memphis, Tenn., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Jan. 15, 1968, Ser. No. 697,945
Int. Cl. B65g *57/28;* **B60p** *1/16*
U.S. Cl. 214—6 **13 Claims**



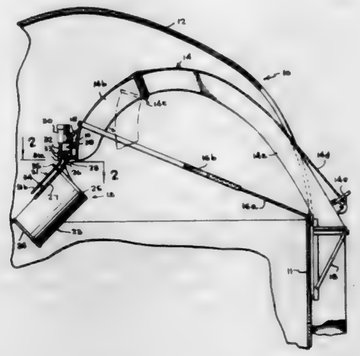
A bale wagon for mechanically accumulating a load of bales in an interlocked pattern. The bale wagon comprises an accumulator for receiving bales individually and arranging them to form a layer, and means for rotating the accumulator in 90° increments so that adjacent layers may be accumulated angularly displaced from each other, the effect of such displacement being to position the bales of one layer in a crosstied relation with those of adjacent layers.

3,446,371
APPARATUS FOR LOADING A STORAGE ENCLOSURE
Jean Bernard Nicolas, 11 Ave. Jean Jaures, 89, Auxerre, France
Filed Feb. 23, 1967, Ser. No. 618,135
Claims priority, application France, Feb. 25, 1966, 51,215
Int. Cl. B65g *37/00, 15/02;* **A01f** *25/00*
U.S. Cl. 214—17 **9 Claims**



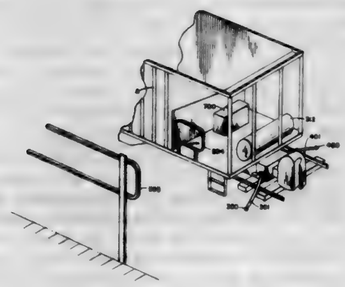
In a plant for storing grass in a cylindrical barn, said grass, poured in bulk through a spout disposed axially in the barn roof, drops onto the inner end of a radial horizontal conveyor by which it is driven toward the periphery of said barn in a direction which can be varied by rotating said conveyor about the barn axis. The grass is dropped from said conveyor laterally, at a variable distance from the vertical barn axis, by an endless belt supported by a carriage displaceable along the conveyor, said belt being vertical and running in a direction perpendicular to the radial direction of the conveyor.

3,446,372
SILAGE DISTRIBUTING APPARATUS
Benjamin H. Roach, Chambersburg, Pa., assignor to Ryder Supply Company, Chambersburg, Pa., a corporation of Pennsylvania
Filed Oct. 31, 1967, Ser. No. 679,492
Int. Cl. B65g *65/30, 11/00;* **A01f** *25/00*
U.S. Cl. 214—17 **15 Claims**



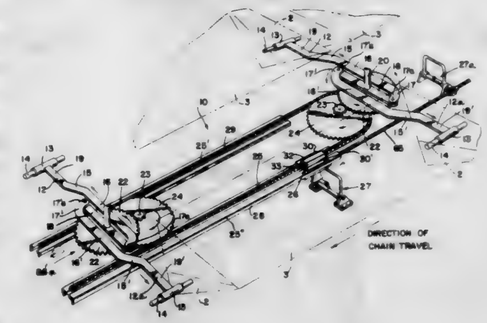
A silage distributor assembly to be mounted on the gooseneck discharge duct of a silo filler conduit system including a mounting plate structure, a substantially cylindrical distributing tube disposed in the path of silage discharge from the gooseneck duct, and a double eye bolt or double loop coupling supporting the distributing tube for movement from the mounting plate structure. The distributing tube is driven in a substantially conical path about the vertical axis through the coupling, and is also caused to execute twisting movement, by a drive motor on said mounting plate structure and a drive rod having an upper vertical portion coupled to the motor and a downwardly inclined portion coupled at axially spaced points to the distributing tube to sweep the latter in the substantially conical path.

3,446,373
REMOTELY CONTROLLED AUTOMATIC HOPPER CAR DOOR ACTUATING MECHANISM
Oliver B. Keister, Jr., 1907 Monticello Road, Florence, Ala. 35630, Charles M. Hursh, Wilmington, Del. (1425 Bobolink Lane, West Chester, Pa. 19380), and John G. Link, 310 Colonial Drive, Florence, Ala. 35630
Filed Apr. 7, 1966, Ser. No. 540,974
Int. Cl. B61d *7/02;* **B65g** *67/24*
U.S. Cl. 214—63 **6 Claims**



An automatic hopper car dumping control mechanism having on a hopper car an electric power source, a pneumatic air supply source, and an electro-pneumatic valve to actuate a pneumatic dumping system. The electro-pneumatic valve is activated by means of a pretuned audio frequency receiver carried on said car loop-coupled to and adapted to receive an audio frequency signal from a selectively located wayside audio frequency transmitter to energize the electrical power circuit to the valve. A safety switch to prevent premature dumping is located on the hopper car interposed in the circuit between the power source and the valve, said switch being normally open to maintain the power circuit in a normally de-energized state. The switch, in one embodiment, is an air pressure switch responsive to a metered increase in air pressure, while, in another embodiment, it is an electronic switch having an audio frequency receiver responsive to receive an overlayed metered audio frequency signal from the wayside transmitter completing a transistorized circuit, thus to close the safety switch in each case and allow the power circuit to be energized in the dumping area.

3,446,374
OPERATING MECHANISM FOR VEHICLE DISCHARGE MEANS
Roy W. Miller, Highland, Ind., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed Jan. 3, 1967, Ser. No. 606,610
Int. Cl. B65g *67/24;* **B61d** *7/30*
U.S. Cl. 214—63 **13 Claims**

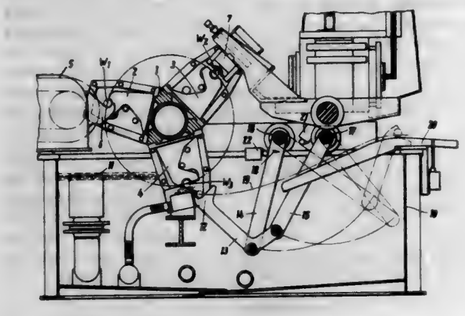


A railroad car hopper door operating mechanism comprising door opening and closing structure beneath the hopper car including an on-car reciprocating continuous chain operating gearing for opening the hopper doors, the chain carrying an operating hook engaging a ground mounted tripping arm between the rails and beneath the hopper car on the loading dock to open the doors whereby the operating arm is spring loaded to catch the toe of the operating hook and which tripping arm may be raised and lowered by manually controlled pneumatic means.

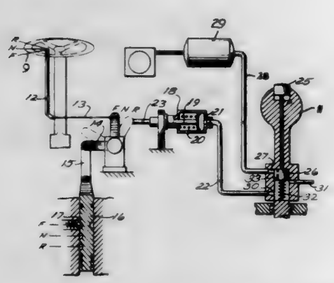
3,446,375
TRANSFER MECHANISM FOR REMOVING WORKPIECES FROM A TANK FILLED WITH LIQUID
Edgar Stengel, Wuppertal-Hahnerberg, Germany, assignor to AEG-Elotherm G.m.b.H., Remscheid-Hasten, Germany
Filed Mar. 8, 1968, Ser. No. 711,735
Claims priority, application Germany, June 27, 1967, A 56,097
Int. Cl. B66c *23/18, 17/14*
U.S. Cl. 214—130 **4 Claims**

Conveyance of heated workpieces from a tank filled with liquid, e.g. inductively heated and quenched metal

workpieces, is usually effected by the intermittent rotation of spiders carrying the workpiece, the hardened workpiece being transferred to a conveyor belt for removing the workpiece from the bath.



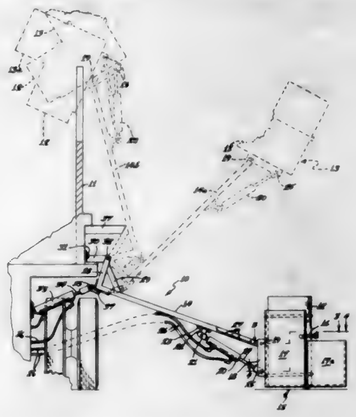
3,446,376
REVERSING MECHANISM FOR INDUSTRIAL VEHICLE
Lloyd A. Molby, Elba, N.Y., assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio
Filed Apr. 27, 1967, Ser. No. 634,325
Int. Cl. B66f *9/20*
U.S. Cl. 214—140 **6 Claims**



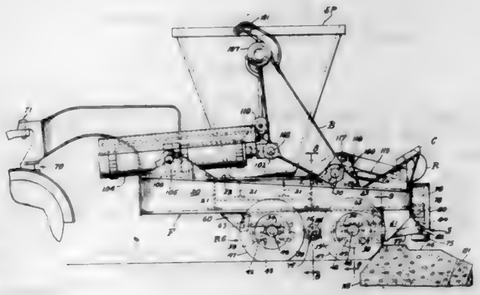
A material handling vehicle having several hand controls including a hand operated direction control which is remotely actuated from another of the controls so that the operator may change direction of the vehicle and at the same time operate the other controls.

3,446,377
LOADING DEVICE
Paul G. Heinert, Box 251, Mission, S. Dak. 57555
Filed Aug. 22, 1966, Ser. No. 573,912
Int. Cl. B65f *3/06*; **B60p** *1/48*
U.S. Cl. 214—302 **1 Claim**

A refuse loading device attached to a truck body for receiving refuse at ground level and for elevating and depositing the same into the truck body. The device employs a lifting boom pivoted at its inner end to the truck at a point well above ground level and normally positioned in outstanding relation to the body of the truck with its outer end near ground level. The boom is powered, preferably hydraulically, and under control, to elevate a refuse receptacle supported at the outer end thereof into an elevated position with the outer end of the boom disposed close to the upper edge of the truck body. Mechanism is provided for controllably shifting the refuse receptacle downwardly into a substantially inverted position when the boom is swung to said elevated position.

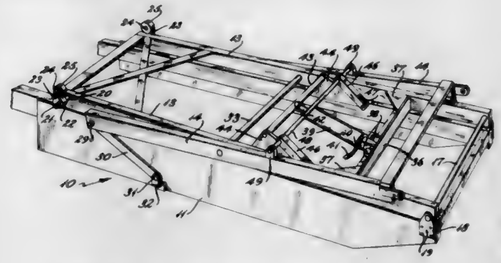


3,446,378
CONTAINER CARRIERS
Richard A. Miller, Easton, Pa., assignor to Easton Car & Construction Company, Easton, Pa., a corporation of Pennsylvania
Filed Feb. 24, 1967, Ser. No. 618,466
Int. Cl. B65b *21/02*
U.S. Cl. 214—317 **27 Claims**



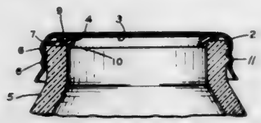
The disclosure involves a highly maneuverable load carrier, typically a multi-wheeled trailer for carrying a container, well adapted for transporting and dumping a pot of molten slag, and it includes many features of construction and operation, such as: a frame configured to provide ample clearance for pick-up and dumping of slag pots; pivoted lifting arms for raising, dumping and lowering a slag pot; adjustable hooks to assist in tipping a pot for dumping; mechanism for knocking a tilted container against an abutment, to dislodge material; pressure sensing stabilizing feet to carry part of the load when dumping; power devices for operating the arms, the hooks and the stabilizers; controllable hydraulic system for powering and coordinating various of the foregoing parts and their functions; and mechanism for effecting transverse and longitudinal equalization of the load on the various supporting wheels of the load carrier.

3,446,379
HIGH-LIFT ELEVATING MECHANISM
William N. Phillips, Auburndale, Fla., assignor to Leco, Inc., Lakeland, Fla.
Filed Oct. 17, 1967, Ser. No. 675,893
Int. Cl. B60p *1/02*; **B66f** *3/22*; **E04g** *1/18*
U.S. Cl. 214—512 **3 Claims**



An apparatus for raising and lowering a high-lift vehicle frame by means of inner and outer lift arms which raise the frame from the chassis of the vehicle by a scissors action while maintaining the same generally horizontal. The mechanism for raising the frame is mounted directly between two pairs of arms and is adapted to react between them with no strain or elevating force applied against the chassis of the vehicle.

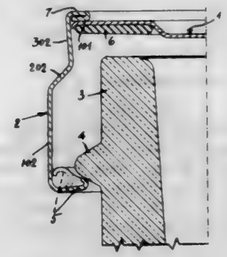
3,446,380
SEALING SYSTEM FOR CONTAINERS
James F. B. Everett, Lititz, Pa., assignor to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania
Filed Aug. 29, 1966, Ser. No. 575,708
Int. Cl. B65d *41/08*, *41/12*
U.S. Cl. 215—39 **4 Claims**



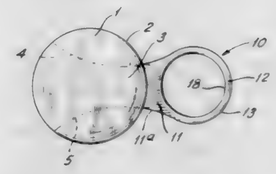
A crimped closure on a container having a known type of neck opening but having an annular sharp corner on the inside diameter of the top annular inner lip of the opening. An annular sealing surface extends from the top of the neck across the sharp corner down inside the neck a distance of at least 1/64" from the top of the neck. The closure has a sealing gasket positioned on the interior panel of the closure, the sealing gasket pressing firmly against the sharp corner and being in continuous sealing engagement with the annular sealing surface on both the top and the inside of the neck. The closure is crimped over threads on the outside of the neck and is removable with the fingers.

3,446,381
METALLIC CAP PROVIDED WITH A SEPARATE BOTTOM DISC
Armando Podestà and Carlo Vignati, Milan, Italy, assignors to Cebal GP, Paris, France
Continuation of application Ser. No. 551,319, May 19, 1966. This application May 9, 1968, Ser. No. 728,079
Claims priority, application Italy, May 19, 1965, 11,891/65
Int. Cl. B65d *23/00*, *53/00*, *45/30*
U.S. Cl. 215—40 **5 Claims**

A two piece metallic cap for the closure of a container including a bottom disc with a peripheral edge projecting from the peripheral outer edge of the container mouth, and a sleeve like skirt provided with an inturned flange at its top with means for securing it to the container mouth; the edge of the inturned flange cooperates with the projecting peripheral edge of the bottom disc to compress the disc against the mouth of the container.

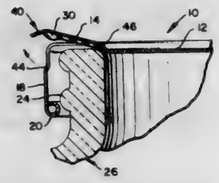


3,446,382
RING PULL CLOSURE CAP
Stanley J. Koll, Keansburg, and Thomas G. Moller, Rahway, N.J., assignors to American Flange & Manufacturing Co., Inc., New York, N.Y., a corporation of Delaware
Filed Aug. 15, 1966, Ser. No. 572,519
Int. Cl. B65d *43/00*
U.S. Cl. 215—46 **4 Claims**



A lightweight metal closure cap for containers, provided with a tear strip to effect structural removal of the cap from the container opening. A ring shaped gripping ear is integral with said tear strip to facilitate tearing.

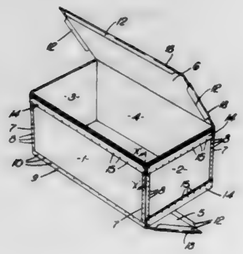
3,446,383
CONTAINER CLOSURE
Charles N. Hannon, 250 Garth Road, Scarsdale, N.Y. 10583
Filed Sept. 29, 1966, Ser. No. 582,803
Int. Cl. B65d *51/16*
U.S. Cl. 215—56 **7 Claims**



This invention relates to a container closure having a cap portion for covering the opening of a container and a skirt portion depending from the cap portion. A gasket is disposed on the underside of the cap portion and extends from adjacent the skirt portion toward the center of the cap portion for sealing the lip portion of a container. The gasket is made of relatively flexible material and is adhesively attached to the cap portion. A release

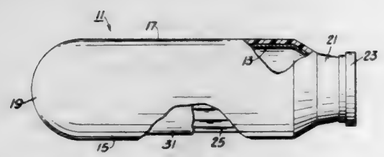
flap portion extends from the skirt portion to the cap portion and a hinge for the flap is formed by a part of the cap portion. The skirt portion has a lifting aperture formed therein adjacent the flap portion for insertion of a tool to lift the flap portion about the hinge portion to form a passage between a container sealed by the container closure and the atmosphere.

3,446,384
COLLAPSABLE CONTAINERS
Dennis G. Blackman, Ty Gwyn, Boverton Road, Llantwit Major, Glamorgan, Wales, and John Stanley Fisher, 16 Hazel Grove, Dinas Powis, Glamorgan, Wales
Filed Sept. 11, 1967, Ser. No. 666,721
Claims priority, application Great Britain, Oct. 21, 1966, 47,207/66
Int. Cl. B65d *9/18, 9/22, 5/08*
U.S. Cl. 217—14 **7 Claims**



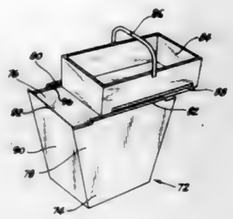
A collapsable container having flat front rear and side panels pivotally connected together to permit collapse into a flat form, top and bottom panels each pivotally connected to one of the front and rear panels and bendable flaps insertable into slots on the front or rear members when the panels are erected to cause the top and bottom flaps to be held resiliently in the closing position.

3,446,385
FILAMENT WOUND REINFORCED PRESSURE VESSEL
Warren E. Ponemon, Oyster Bay, N.Y., assignor to Koppers Company, Inc., a corporation of Delaware
Continuation-in-part of application Ser. No. 403,975, Oct. 15, 1964. This application Aug. 5, 1966, Ser. No. 570,588
Int. Cl. B65d *7/42*
U.S. Cl. 220—3 **2 Claims**



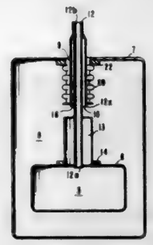
The pressure vessel of the invention has a corrugated metal inner wall, a fiber glass reinforced outer wall wound upon the inner wall, and a resilient and noncompressible material filling the valleys or troughs of the corrugations in the inner wall and lying between the inner metallic wall and the outer fiber glass wall. The corrugations are of definite depth and, accordingly, permit the inner wall to expand to a great extent without reaching its elastic limit despite its higher modulus of elasticity.

3,446,386
PORTABLE CUSTODIAL UNIT
Frederick C. Wellington, 5201 Kenwood, Buena Park, Calif. 90620
Filed Mar. 6, 1967, Ser. No. 621,063
Int. Cl. B65d *7/00*
U.S. Cl. 220—4 **5 Claims**



A portable custodial service unit is detachably carried upon a custodial cart and provides both a trash receptacle and a cleaning aids tray carried together.

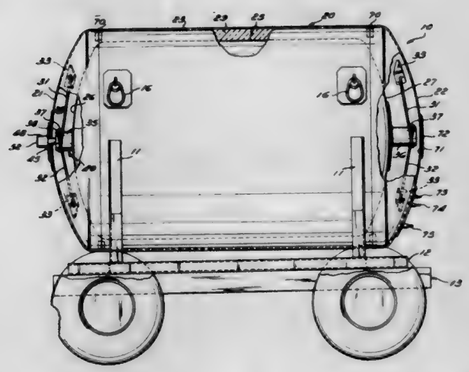
3,446,387
PIPING ARRANGEMENT THROUGH A DOUBLE WALL CHAMBER
James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention by Stephen P. Yager, Whittier, Calif.
Filed May 17, 1967, Ser. No. 640,784
Int. Cl. B65d *25/00*
U.S. Cl. 220—14 **5 Claims**



A low loss double wall piping arrangement in which a straight through conduit which is capable of linear expansion and contraction is used for piping cryogenic media or the like into an inner high vacuum chamber through an outer chamber maintained at guard vacuum. An insulator with low thermal gradient inflexibly supports the end of the conduit extending into the inner chamber, while a bellows flexibly seals the other end of the conduit through a concentric tube to the outer wall of the outer chamber. The conduit and the concentric tube define an annular space about the conduit so that the environment about the conduit is that of the guard vacuum of the outer chamber.

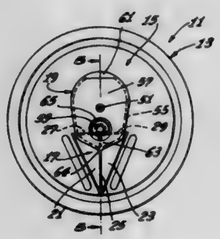
3,446,388
CRYOGENIC TANK SUPPORT MEANS
Ralph Greenberg, University Heights, Ohio, assignor to Ryan Industries, Inc., a corporation of Ohio
Filed Apr. 15, 1966, Ser. No. 542,884
Int. Cl. B65d *81/02*
U.S. Cl. 220—15 **8 Claims**

A suspension arrangement for a transportable Dewar-type container having an inner vessel disposed within and spaced from an outer vessel. A strut is secured to one vessel and cooperates with abutment means secured to the other vessel so that relative movement of the vessels with respect to each other is limited in two directions along a path in which the vessels are translated together. The strut and abutment means are separated from one another to



provide a break in the solid thermal conduction path between the vessels and engage each other in load-bearing relationship for loads acting in either direction on the path during both positive and negative acceleration of said container.

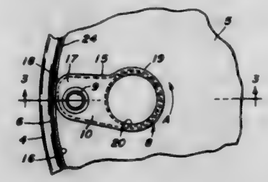
3,446,389
EASY-OPENING CAN END WITH NON-REMOVABLE TAB
Omar L. Brown, Dayton, Ohio, assignor, by mesne assignments, to Ermal C. Fraze, Dayton, Ohio
Filed Oct. 13, 1967, Ser. No. 675,215
Int. Cl. B65d *17/00*
U.S. Cl. 220—48 **22 Claims**



There is described herein an easy-opening container wall having a wall region formed by a rupturable score line and a bendable score line. A tab is secured to the container wall outside of the wall region and has a rupturing portion that overlies a portion of the wall region. Upon lifting the tab, the rupturing portion engages the wall region and forces the latter inwardly to thereby rupture the rupturable score line and cause the wall region to be bent inwardly into the interior of the container about the bend line.

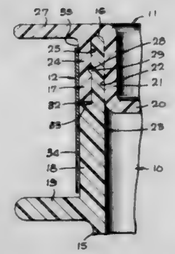
3,446,390
OPENING MEANS FOR SEALED CONTAINERS
Robert E. Heffner, Lower Burrell, Pa., assignor to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 10, 1968, Ser. No. 720,012
Int. Cl. B65d *17/24*
U.S. Cl. 220—54 **7 Claims**

This disclosure concerns container ends or closures for containers that have an end panel that is recessed respecting a shoulder and is provided with a score line to define a tear-out section. A tab opening device having a cam portion is rotatably attached to the tear-out section in a position such that rotation of the tab opening device about



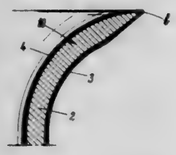
the attachment means brings the cam portion of the tab opening device to bear against the shoulder and causes the score line to rupture.

3,446,391
PLASTIC CONTAINER TAPE SEAL STRUCTURE
George Yates, Jr., 151 Cumberland Road, Glendale, Calif. 91202
Filed Nov. 16, 1967, Ser. No. 683,651
Int. Cl. B65d *43/10, 17/00*
U.S. Cl. 220—60 **7 Claims**



The invention resides in a structure consisting of a plastic container having a plastic lid interlocking with the container wherein the lid has a perimetral pocket receiving the top edge of the container, so that when the two are in engagement the exterior surfaces of both are flush with each other and an adhesive tape or band is fastened to the flush surfaces to effectively seal the closure on the container.

3,446,392
RIM FOR COOKING VESSEL
Eric Lescure, Dienay, Cote d'Or, France
Filed June 30, 1966, Ser. No. 561,927
Claims priority, application France, July 7, 1965, 23,754
Int. Cl. B65d *25/14*
U.S. Cl. 220—63 **4 Claims**



A cooking vessel comprises a base of an oxidizable metal which is jacketed between two layers of stainless steel. At the rim, the base tapers to a sharp edge and the jacketing layers are welded together along this edge and overlap the edge.

3,446,393
STORAGE CONTAINER FOR PRESSURIZED FLUIDS

Vernon A. Falkenau, Mishawaka, Ind., assignor to Uniroyal, Inc., New York, N.Y., a corporation of New Jersey

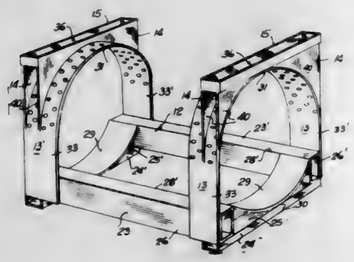
No Drawing. Filed Aug. 25, 1967, Ser. No. 663,202
Int. Cl. B65d 25/14, 25/34
U.S. Cl. 220—64 12 Claims

This invention relates to a storage container for holding fluids which comprises a liner, consisting of a plurality of layers of electroplatable metals, separated by interrupting layers of solid impervious film-forming material, surrounded by a resin-impregnated glass filament reinforcing structure.

3,446,394
BULK BEVERAGE SHIPPING CONTAINER AND PROTECTIVE SUPPORT THEREFOR

Floyd B. Miller, 1279 Gainesville Ave. 95122, and Martin B. Janich, 1260 Willow St. 95125, both of San Jose, Calif., and John A. McWilliams, P.O. Box 824, Palo Alto, Calif. 94302

Filed Feb. 5, 1968, Ser. No. 707,359
Int. Cl. A47b 53/00, 55/00; B65d 25/24
U.S. Cl. 220—97 8 Claims

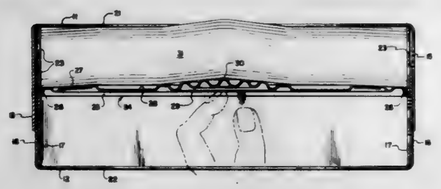


A bulk beverage shipping tank encased in a protective coating and stabilized for transit and stacking as well as storage within a minimum of space. A shipping drum secured on a cradle support by protective brackets for receiving and supporting the cradle support of a similarly secured shipping drum.

3,446,395
DISPENSING APPARATUS HAVING A MOVABLE PLATFORM

Gene Ballin, 3045 Shore Drive, Merrick, N.Y. 11566

Filed Sept. 12, 1967, Ser. No. 667,213
Int. Cl. B65h 1/08; A47k 10/24
U.S. Cl. 221—52 6 Claims

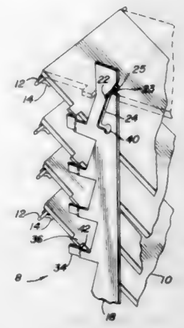


Dispensing apparatus, particularly adapted to dispense tissues, having a series of steps interior of the receptacle and a platform which engages the steps and is adapted to move easily in one direction and resist movement in the other direction.

3,446,396
SHELF-RESETTING MECHANISM FOR DROP-SHELF PACKAGE VENDORS

Joseph F. Gasiel and James C. Downs, Chicago, Ill., assignors to The Seeburg Corporation, Chicago, Ill., a corporation of Delaware

Filed Nov. 27, 1967, Ser. No. 685,812
Int. Cl. G07f 11/06, 11/48
U.S. Cl. 221—90 10 Claims



A new, safe, and more efficient shelf resetting mechanism for drop-shelf vending machines comprises a lever mechanism pivotally attached to a vertically moving reset bar that engages protrusions on the edge of the individual shelves, thereby enabling the shelves to be raised to a horizontal reset position in one simple operation.

3,446,397
DISPENSER FOR SELECTING QUANTITIES OF LIKE BODIES

James C. Chambers, 710 Falcon Ave., Miami Springs, Fla. 33166

Filed Jan. 24, 1968, Ser. No. 700,182
Int. Cl. B65g 59/06; G07d 9/00
U.S. Cl. 221—296 6 Claims

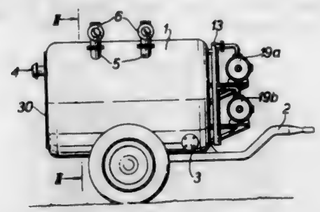


An electric device for selectively dispensing like bodies retained in end to end relation in a channel by gravity upon the operation of one of a predetermined number of button operated electric switches.

3,446,398
DRAINAGE EQUIPMENT

Horst Schinke, Celle-Altencelle, Germany, assignor to Hudig Kommanditgesellschaft, Celle-Altencelle, Germany, a German company

Filed Jan. 20, 1967, Ser. No. 610,595
Claims priority, application Germany, Jan. 26, 1966, H 58,351
Int. Cl. B67d 5/08, 5/36, 5/14
U.S. Cl. 222—63 8 Claims

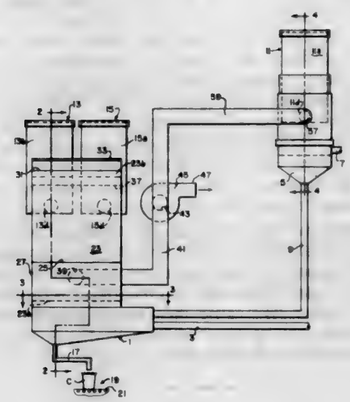


Groundwater drainage equipment including a water tank communicating with two vacuum pumps which operate to cause at least a partial vacuum in the tank. The equipment also includes two submerged water pumps and a control system for bringing the vacuum pumps and water pumps into operation in dependence upon the water level in the tank.

3,446,399
DISPENSING APPARATUS

Richard F. Ross, Oak Lawn, and Calvin K. K. Yan, Chicago, Ill., assignors to UMC Industries, Inc., St. Louis, Mo., a corporation of Delaware

Filed June 9, 1967, Ser. No. 645,005
Int. Cl. B67d 5/56, 5/62
U.S. Cl. 222—129.1 7 Claims

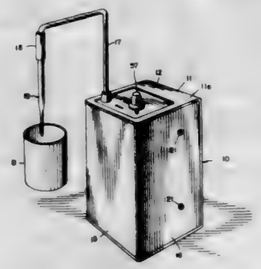


Hot beverage dispensing apparatus brews and vends coffee, tea and other hot beverages, either with or without the addition of sugar and/or cream according to the purchaser's selection. A hot liquid (e.g., water or a previously brewed beverage) and a dry ingredient (e.g., instant coffee or tea, or sugar and/or powdered cream) are brought together in a bowl where they are mixed and then delivered to a cup station. A blower produces an air stream which moves downwardly into the mixing bowl, around a baffle in the bowl, upwardly in the bowl, and then out of the bowl. The dry ingredients are stored in dispensers and metered through outlet spouts directly into the air stream above the mixing bowl. The baffle prevents them from being sucked out of the mixing bowl with the stream of air. The stream of air avoids upward flow of steam and hot vapors from the mixing bowl past the outlet spouts of the dispensers, thereby preventing caking of the dry ingredients at the outlet spouts.

3,446,400
PLURAL SOURCE FLUID DISPENSER WITH INTERCONNECTED DISCHARGE VOLUME VARYING MEANS

James C. Hobbs II, and Alan Richardson Jones, Miami, and Eugene L. Schultz, Hollywood, Fla.; said Jones and said Schultz assignors to American Hospital Supply Corporation, Evanston, Ill., a corporation of Illinois

Filed Jan. 25, 1967, Ser. No. 611,685
Int. Cl. B67d 5/60
U.S. Cl. 222—134 12 Claims

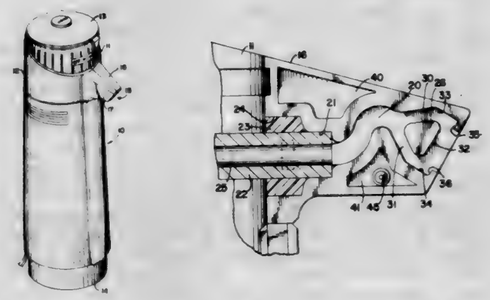


An apparatus for diluting a liquid sample with a suitable diluent. A motor-driven eccentric and yoke assembly are arranged to shift downwardly and upwardly the piston of a fixed-volume diluent chamber for drawing and discharging a measured amount of diluent. As the yoke assembly approaches its lower position, it engages and drives downwardly the piston assembly of a sample chamber communicating with an uncalibrated pipette, and as the yoke assembly is then moved upwardly, the sample and diluent are discharged through the pipette. A valve, driven by the same motor which operates the pistons, controls the flow of diluent and sample in positive synchronization with piston operation.

3,446,401
FOAM DISPENSING NOZZLE AND FOAM DISPENSER WITH HEATING MEANS

Theodore R. Flowers, Fairfield, Conn., assignor to Eversharp, Inc., Milford, Conn., a corporation of Delaware

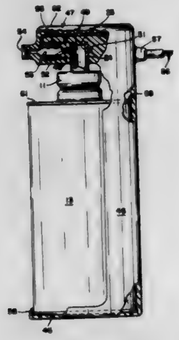
Filed June 24, 1966, Ser. No. 560,154
Int. Cl. B67d 5/62, 5/06
U.S. Cl. 222—146 2 Claims



A foam dispensing nozzle expressly adapted for use with foam products emerging from foam heater means associated with an aerosol can. A nozzle is provided having an inlet with a given cross-sectional area, and an outlet

with a larger cross-sectional area, the inlet and outlet being connected by a passageway which is divided into separate passageways by baffle means therein. In a preferred embodiment, the baffle means includes a divider having a generally triangular cross-sectional shape and forming a side wall portion of each of the passageways, and further includes deflector means for directing streams flowing in each of the passageways together to form a single, enlarged emergent stream at said outlet. The invention includes the method of enlarging the cross-sectional area of a fluent stream of foam which includes dividing it into two or more streams and subsequently uniting the streams to form a single stream of larger cross-sectional area.

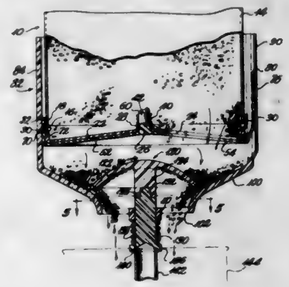
3,446,402
AEROSOL DISPENSER WITH LATERAL DISCHARGE AND HEATING HOLDER THEREFOR
Edward Bruce Gasser, Orange, N.J., and Denis J. Healy, New York, N.Y., assignors to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
Continuation of application Ser. No. 482,844, Aug. 26, 1965. This application July 24, 1967, Ser. No. 655,664
Int. Cl. B67d *5/62*
U.S. Cl. 222—146 **13 Claims**



A holder for a pressurized dispensing container including a warming chamber for the dispensed product and means to cooperatively receive the depressible valve stem in substantially all rotative positions of the container.

3,446,403
DISPENSER
Anthony W. Serio, R.F.D. 1, Hillcrest Road, Elmira, N.Y., 14902; Dolores M. Serio, executrix of said Anthony W. Serio, deceased
Filed Jan. 12, 1967, Ser. No. 608,840
Int. Cl. B65d *83/06;* **G01f** *11/24;* **B67d** *5/38*
U.S. Cl. 222—158 **10 Claims**

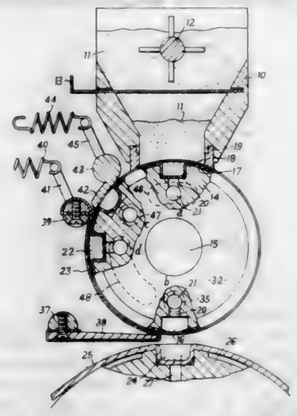
A first body means is provided with a peripheral flange adapted to snap on the open end of a container such as a coffee can. This first body means has a plurality of generally triangular-shaped holes formed therethrough and also includes a central hole formed therethrough. A pair of depending stop lugs are formed on the undersurface of the first body means. The second body means has a peripheral flange which fits snugly about the peripheral flange of the first body means to hold the second body means in position and to permit rotation of the second body means with respect to the first body means. The second body means has a plurality of holes corresponding to the holes formed through the first body means so that these holes may either be aligned with one another to permit the contents of a container to pass therethrough or to be misaligned with one another to prevent the passage of material. Indentations are provided in the side walls of certain holes of the second body means for receiving the stop lugs on the first body means to limit relative rotation between the first and second body means. The second body means has a central hub which extends through the central hole in the first body means. A spring is connected between this central hub and the first body means for normally biasing the second body means with respect to the first body means to rotate into the position wherein the holes through the first and second body means are misaligned with one another. The second body means also includes three arms which extend upwardly and outwardly therefrom.



A third body means includes an outer wall having three spaced grooves therein for receiving the arms of the second body means. This connection permits the third body means to slide up and down with respect to the second body means, but rotation of the third body means from the exterior thereof will also cause the second body means to rotate therewith when it is desired to align the openings in the first and second body means. The outer wall of the third body means is transparent, and indicia are provided on the third body means adjacent the grooves therein. The upper ends of the arms of the second body means may be aligned with certain indicia so as to readily determine the capacity of the third body means and the amount of material which will be dispensed therefrom. The third body means includes a lower wall having a hole formed in the central part thereof. A closure means is provided for closing off this last mentioned hole, the closure means including a portion extending outwardly of the third body means. A compression spring engages a flange formed at the outer end of the outwardly extending portion of the closure means for normally biasing the closure means toward its closed position. The outer end of this outwardly extending portion of the closure means is adapted to engage the pump member of a conventional percolator mechanism or the like so that downward movement of the third body means will cause the closure means to be biased upwardly into its open position to dispense material through the hole in the third body means.

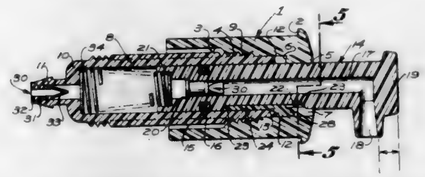
3,446,404
ENCAPSULATION OF POWDERS
Maharaj K. Mehta, 91 Celyn Ave., Lakeside, Cardiff, Glamorganshire, Wales
Continuation-in-part of application Ser. No. 614,323, Feb. 6, 1967. This application Jan. 15, 1968, Ser. No. 697,949
Claims priority, application Great Britain, June 20, 1967, 28,469/67
Int. Cl. G01f *11/24, 15/00*
U.S. Cl. 222—225 **12 Claims**

A rotary feed roll for filling gelatine capsules with powder from a hopper, the roll being covered with a rubber sleeve which is drawn by suction into openings in the surface of the roll to form charge chambers for the reception of the powder, the rubber sleeve being covered with an apertured metal sleeve to protect the rubber sleeve against damage and facilitate rotation of the roll across the mouth of the hopper. Upon release of the suction the charges are ejected by the resilience of the rubber sheet. This resilience, aided by air pressure in place of the suction, may be used to compress the charges against a



backing plate covering the mouths of the charge chambers. The size of the charge chambers may be varied by variation of the degree of suction, or by providing an element within each opening to limit the penetration of the elastic sheet.

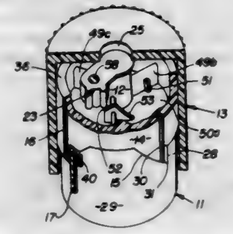
3,446,405
SOAP DISPENSER WITH SEVERABLE STOP STRIP
Herbert S. McCray, Mission Hills, Calif., assignor to The Bobrick Corporation, a corporation of California
Filed Feb. 1, 1968, Ser. No. 702,277
Int. Cl. G01f *11/06, 11/16*
U.S. Cl. 222—309 **7 Claims**



A soap dispenser in which a liquid soap is pumped by manually engaging a pump plunger which is provided with a flow passage and nozzle arranged to discharge a predetermined quantity of soap with each stroke of the pump. The dispenser includes a stroke limiting member having a tab which may be severed so as to change the pump stroke and, hence, the quantity of soap discharged with each stroke. Also, the dispenser may be used to discharge the soap as a lather by increasing its stroke and causing air to be mixed with the soap in the pump chamber.

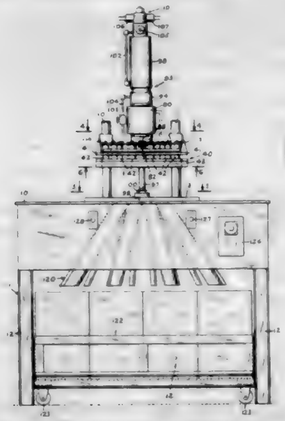
3,446,406
CAP-ACTUATED PIVOTED OUTLET CLOSURE FOR A CONTAINER
David H. Trott, 5240 Wooster Road, Cincinnati, Ohio 45226
Filed Dec. 15, 1967, Ser. No. 690,932
Int. Cl. B67d *5/06, 3/04*
U.S. Cl. 222—507 **18 Claims**

An improvement for a closure particularly adapted for use with liquid containers and the like of the type that includes (1) a cylindrical base connected to the container, the base including a spout extending upwardly from the base, (2) a sleeve mountable over the base for axial and rotary movement relative to the base, the sleeve having top wall and an opening in the wall axially aligned with



the spout, and (3) a cap piovtably mounted for movement to and from a position underlying the top wall opening.

3,446,407
MACHINE FOR SEPARATING MOLDED PLASTIC ARTICLES FROM GATES AND RUNNERS OF MOLDED TREES
Douglas Martin Dawson, Miami, Fla., assignor to Russell, Burdsall & Ward Bolt and Nut Company, Port Chester, N.Y., a corporation of New York
Filed May 22, 1967, Ser. No. 639,951
Int. Cl. B26f *3/00, 3/02;* **B65h** *35/00*
U.S. Cl. 225—97 **12 Claims**

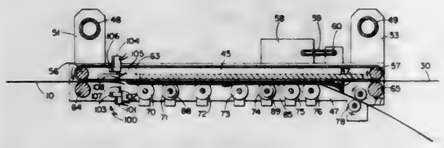


Machine for separating molded articles from a molded plastic tree on which said articles are attached to gates which extend from the runners, the machine comprising an upper and lower platen, one of which is movable to open and to closed clamping position, the lower platen having a plurality of spaced holes in which the articles lie when the tree is placed between the platens, the upper platen mounts a plurality of rotatable brush-like sweepers in registry with the holes; the sweepers contacting and knocking the articles from the gates when the platens are moved to closed position with the tree clamped therebetween.

3,446,408
APPARATUS FOR MANUFACTURING ARTICLES FROM A WEB OF MATERIAL
Joseph P. Lagermasini, Robert R. Lennis, Glenn H. Roberts, and Lauri D. Tiala, Towanda, Pa., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Dec. 27, 1966, Ser. No. 605,013
Int. Cl. B26f *3/02;* **B65h** *35/10*
U.S. Cl. 225—99 **6 Claims**

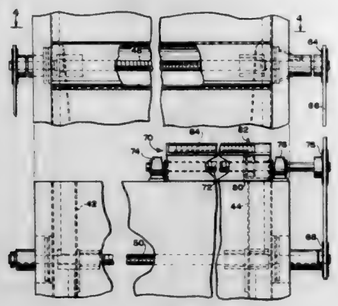
An apparatus for removing articles from an elongated web is disclosed wherein the outlines of the articles are delineated by tear lines in the web and the web having

openings therethrough at the edges of each article transverse to the edge of the web. The apparatus includes in combination a conveying means for advancing the web along in a direction of the length of the web; a separating blade which diverges outwardly from the tip and disposed in the path of the advancing web; and a threading means



for inserting the tip of the blade into openings in the advancing web whereby the articles pass on one side of the blade and the intervening sections of the web pass on the other side of the blade, and the separating blade being adapted to cause tearing of the web along the tear lines as the web is advanced past the blade so as to remove each article in succession from the web.

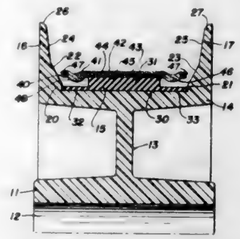
3,446,409
ADJUSTABLE GUIDE WALL ASSEMBLY
John M. Stearns, Bedford, Mass., assignor to Riggs & Lombard, Inc., Lowell, Mass., a corporation of Massachusetts
Original application Aug. 26, 1965, Ser. No. 482,808, now Patent No. 3,338,494, dated Aug. 29, 1967. Divided and this application Mar. 2, 1967, Ser. No. 620,177
Int. Cl. B65h *17/50, 23/00*
U.S. Cl. 226—118 **1 Claim**



Apparatus is provided for accumulating a web first in a vertical pile and carrying the formed pile from the vertical position through a horizontal position in an enclosure where the stack is treated and then is turned upwardly where the web is withdrawn from the pile in a continuous operation. Adjustable panels engage opposite sides of the pile to support the pile as it moves down into the apparatus.

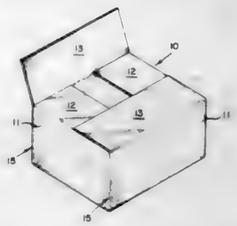
3,446,410
IDLER SPOOL ASSEMBLY FOR USE IN DEVELOPING PHOTOGRAPHIC FILM BY VISCOUS DEVELOPER
Barry J. Brose, 429 Jerome Ave., Piedmont, Ca'lf. 94611
Filed Mar. 3, 1967, Ser. No. 620,546
Int. Cl. B65h *17/20*
U.S. Cl. 226—191 **4 Claims**

An idler spool assembly is provided for use in developing, by viscous developer, photographic film having sprocket openings adjacent at least one side edge. The spool proper has a hub and a film-guiding channel defined by two side walls and a cylindrical wall, and each side wall includes a radial portion meeting the cylindrical wall and a frustoconical portion diverging outwardly from the radial portion by an angle of about thirty degrees. Around the cylindrical wall is a rubber tire having a thick portion and a thin marginal portion for each line



of sprocket openings. The tire is sufficiently thick to hold the film at the radial distance from the cylindrical wall of the two diverging frustoconical portions and is sufficiently thicker than the thin marginal portions so that viscous developer on the film that lies in the sprocket openings and is held from falling by its normal retention characteristics, does not engage said tire.

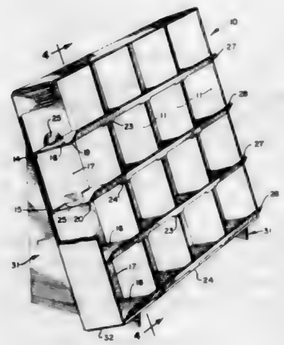
3,446,411
FIREPROOF CONTAINER FOR OXIDIZABLE MATERIALS INCLUDING EXPLOSIVES
Orlando Hudson, 313 Ready St., St. Marys, Ga. 31558
Filed Sept. 8, 1967, Ser. No. 666,397
Int. Cl. B65d *3/00, 5/00, 1/00, 5/02*
U.S. Cl. 229—3.5 **10 Claims**



A fireproof container made from a laminated material comprising a suitable base layer to which is adhesively secured on one or both sides a fireproof layer. The adhesive sets up without the use of heat. The fireproof layer is relatively thin and is of an asbestos paper composition comprising asbestos fines combined with five to thirty percent cotton. This asbestos paper is sufficiently flexible so that when the laminated sheet is bent or folded the fireproof layer does not split or crack, but maintains a continuous unbroken surface throughout the length of the fold even when the laminated sheet is bent back upon itself, as when an empty carton is collapsed for shipment.

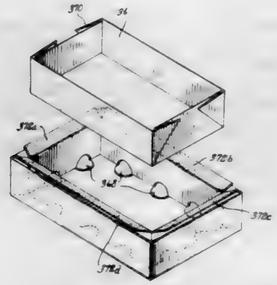
3,446,412
DISPLAY CARTON
Arthur Stark, Astoria, N.Y., assignor to Federal Carton Corporation, North Bergen, N.J., a corporation of New York
Filed Mar. 29, 1968, Ser. No. 717,271
Int. Cl. B65d *5/48, 25/04;* **A47f** *7/03*
U.S. Cl. 229—15 **4 Claims**

A combined shipping and display carton particularly intended for envelopes or pouches of powdered soup or similar material such for example as dehydrated powdered coffee, tea, mixes, etc., the carton being divided by partitions into a plurality of compartments, the compartments being provided at their bases with upwardly inclined lips



to prevent pouches from sliding out, and certain of the compartments being provided with upstanding tabs to assure that envelopes will not slide down between the container wall and the adjacent partition.

3,446,413
TUBULAR FRAME PACKAGE AND BLANK THEREFOR
Joseph H. Sherrill and Jesse R. Pinkham, Winston-Salem, N.C., assignors to R. J. Reynolds Tobacco Company, Winston-Salem, N.C., a corporation of New Jersey
Filed Jan. 19, 1967, Ser. No. 610,340
Int. Cl. B65d *13/04, 17/20*
U.S. Cl. 229—23 **17 Claims**



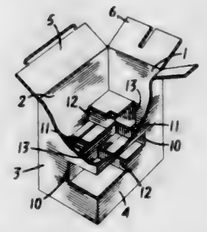
A tubular frame package or blank having a corner structure in panels of the frame or blank in which one panel is scored along a straight line, another panel is scored along diverging lines to provide for infolding, and a third panel is slit and scored to provide for flaps. In the tubular frame structure, the flaps may be secured to a panel surface; a flap may extend into a corner of an opposing panel surface to provide greater rigidity to the package.

A tear tape is provided about an open face of a tubular frame package to provide for the tearing of a wrapper.

In a tubular frame package two frame sections, one overlying the other, are employed to form an end closure of the package, with the underlying frame section having an opening through one of its panel surfaces to provide access to the interior of the package.

A tubular frame structure may hold a tray therein or may support a sheet to provide a supporting surface.

3,446,414
COLLAPSIBLE PAPERBOARD CARTON
Koichiro Omori, 14/21, 2-chome, Matsugaoka, Kugenuma, Fujisawa-shi, Kanagawa-ken, Japan
Filed June 20, 1967, Ser. No. 647,395
Claims priority, application Japan, June 21, 1966, 41/40,329; June 25, 1966, 41/41,241; Dec. 6, 1966, 41/79,919
Int. Cl. B65d *5/48, 75/00*
U.S. Cl. 229—28 **4 Claims**

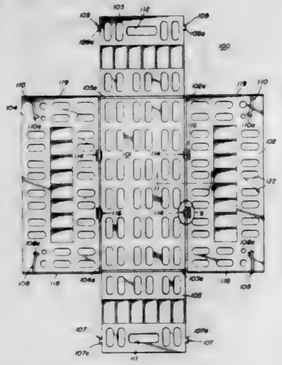


A collapsible six-sided carton formed of paperboard and adapted for accommodating a plurality of bottles or other cylindrical objects, having a plurality of interior partition panel members formed by a portion or portions of side walls which are previously provided with a plurality of horizontal, inclined or vertical cut lines and a plurality of fold lines. The interior partition panel members are hingedly connected with the side walls with the result that they are folded inwardly until they make right angles with respect to the adjacent side walls and are collapsed to the plane of the adjacent side walls according as the carton in its entirety is brought in set up and collapsed position, respectively. The bottom wall of the carton on the other hand is made up of two pairs of opposite lap panels which are foldably connected with the lower edges of the adjacent side panels, the adjacent lap panels being overlapped and secured to each other. Such an arrangement of the bottom lap panels permits a ready and prompt setup and collapsing operation of the carton accordingly as the side walls are brought into setup and collapsing condition, respectively.

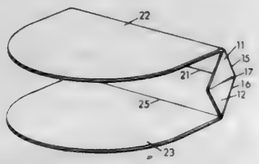
3,446,415
BLANKS FOR READY ERECTION INTO BOX-LIKE CONTAINERS
Kenneth W. Bromley, Hobart, Ind., assignor, by mesne assignments, to United States Steel Corporation, a corporation of Delaware
Filed Apr. 5, 1967, Ser. No. 628,617
Int. Cl. B65d *5/20, 7/24*
U.S. Cl. 229—30 **5 Claims**

A blank formed entirely of an integrally molded single mass of synthetic organic resin and capable of ready erection into a box-like container without the use of tools or external fasteners, comprising a bottom wall part, a pair of end wall parts, a pair of side wall parts, and elongated hinge parts interconnecting each of the side and end wall parts with the bottom wall part. The side wall parts are each movable between a knock-down position parallel to the plane of the bottom wall part and an erected position normal to the plane of the bottom wall part. The end wall parts are each movable between a knock-down position, an assembly position and an erected position, the end wall parts in their assembly position being superimposed upon said bottom wall part at an acute angle thereto. A pair of outwardly extending and laterally aligned

bayonet pins is carried by each of the end wall parts; each of the side wall parts has a bayonet slot at each opposite end thereof, the slots in each side wall part adjacent the same end wall part being adapted to receive the bayonet pins of the associated end wall part. When the end wall parts occupy their assembly positions and the side wall parts occupy their erected positions, the laterally extending bayonet pins on the end wall parts are adapted to pass through the bayonet slots of the adjacent side wall parts. Upon movement of the end wall parts from their assembly positions to their erected positions, the engagement of the bayonet pins with the bayonet slots prevents movement of the side wall parts and the end wall parts to their knock-down positions.



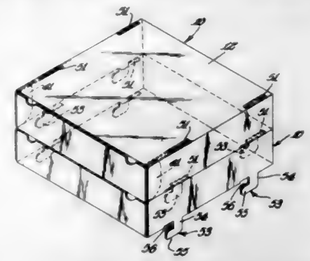
3,446,416
SANDWICH HOLDER
Harry T. Epstein, 20 Mansfield Road, Wellesley, Mass. 02181
Filed Nov. 8, 1967, Ser. No. 681,480
Int. Cl. B65d *5/24, 65/00, 75/00*
U.S. Cl. 229—31 **10 Claims**



A sandwich holder especially designed for hamburger sandwiches formed from a round roll. The holder has an elongated foldable tray member which lies flat when unfolded. The member includes a pair of end bellows elements. A foldable side member extends from both elongated sides of the tray. The side members are folded together in parallel producing a fold about a central transverse axis and causes the end bellows elements to fold inwardly and provide the tray member.

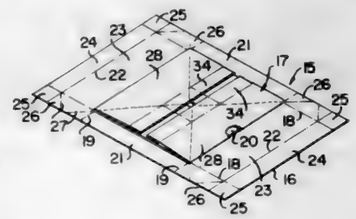
3,446,417
PACKAGING AND SHIPPING CONTAINER FOR EGGS AND THE LIKE
Alfred Eisenberg, 200 Hibbard Road, Wilmette, Ill. 60091
Filed Mar. 2, 1967, Ser. No. 620,127
Int. Cl. B65d *5/24, 5/22, 5/66*
U.S. Cl. 229—36 **6 Claims**

Container for egg trays and the like of a generally rectangular form having hinged tops and adapted to snugly receive the egg trays and protect the eggs therein. This container is made from corrugated board and has locking tabs depending from each side thereof, engageable within slots in the top of a next adjacent container



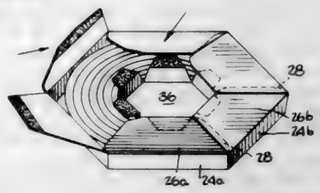
and locked in position by moving the container along the slots, to interengage the locking tabs with the next downwardly spaced container, to thereby retain the containers in stacked aligned relation with respect to each other during shipment.

3,446,418
CARTON
Clarence W. Vogt, P.O. Box 232, Westport, Conn. 06880
Filed May 3, 1966, Ser. No. 547,361
Int. Cl. B65d *5/14*
U.S. Cl. 229—40 **13 Claims**



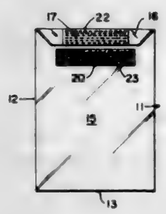
This disclosure relates to a sift-proof carton of a type which may be readily filled with a differential pressure filling apparatus. The carton is constructed to be seated within a supporting frame and having flaps extending upwardly beyond the walls of the body thereof whereby the carton may be initially filled beyond the normal confines thereof above the walls, but within the flaps and then the material placed therein compacted so as to be confined within the normal confines of the carton.

3,446,419
COIL PACKAGE
John Burk Mueller, Pittsburgh, Pa., assignor to St. Regis Paper Company, New York, N.Y., a corporation of New York
Filed Oct. 23, 1967, Ser. No. 677,374
Int. Cl. B65h *55/00, 75/02;* **B65d** *85/04*
U.S. Cl. 229—40 **9 Claims**



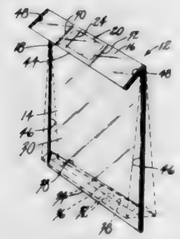
A carton suitable for packaging goods in annular or coiled form is formed from a one-piece blank having an equal sided polyhedral base; outwardly radially projecting but inwardly bendable outer flaps are provided on each of the equal peripheral sides of the base. The base is also cut to define an equal number of inwardly radially projecting but outwardly bendable inner flaps, each radially aligned with a corresponding outer flap. The outer flaps are made of a sufficient radial length to extend inwardly and partially overlap their corresponding radially aligned inner flaps.

3,446,420
FLEXIBLE MOUTH CONTAINER
Franz G. Rinecker, Wayne, N.J., assignor to American Velcro, Inc., a corporation of New Hampshire
Filed Feb. 8, 1968, Ser. No. 703,926
Int. Cl. B65d *33/16, 27/14*
U.S. Cl. 229—62 **6 Claims**



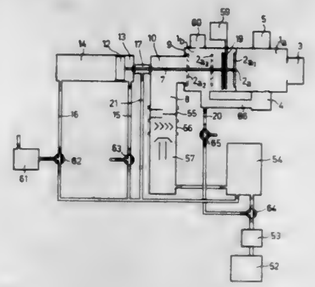
A container of the type having a mouth defined by a flexible sheet which can be opened wide and closed by flattening it into two sheet portions and convoluting its marginal end portions. Included in the flexible sheets are fastening strips having outer surfaces characterized by hooking elements of the hook and loop type which are positioned so that in folding one strip to bring it in registry with the other, the convoluted marginal end portion of the flexible sheet will be confined within the fold to seal the opening.

3,446,421
ENVELOPE WITH EXTERNAL POCKET FOR REMOVABLE TAG
Robert J. Carrigan, Thompsonville, and Ralph K. Stone, Longmeadow, Mass., assignors to United States Envelope Company, Springfield, Mass., a corporation of Massachusetts
Filed Oct. 2, 1967, Ser. No. 672,086
Int. Cl. B65d *27/04, 27/08*
U.S. Cl. 229—70 **6 Claims**



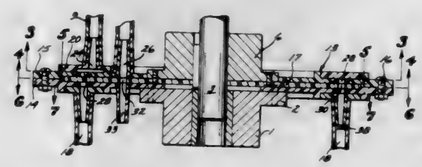
A merchandise envelope or bag made from flexible material has an external pocket to carry a tag which is removable therefrom without opening the main body of the envelope. To facilitate insertion of the tag, a pocket partially formed by an envelope closing flap has a mouth on the inner side of the flap assessible only when the flap is in its open position. In another embodiment both an envelope and its external pocket are formed from a single sheet of flexible material.

3,446,422
ULTRA-HIGH VACUUM DEVICE
Josette Bailleul-Langlais, Suresnes, Jean Neuville, Gentilly, and Robert Vellex, Paris, France, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed June 27, 1967, Ser. No. 649,339
Claims priority, application France, June 27, 1966, 67,078
Int. Cl. F04b *41/06, 37/10;* **F04d** *25/16*
U.S. Cl. 230—45 **7 Claims**



This invention is an improved apparatus for establishing in a closed chamber an ultra-high vacuum. The chamber of the apparatus includes a first junction means for connection of a first preliminary vacuum pump, a second junction means for connection of an ultra-high vacuum pump and a single valve movable between first and second valve seats or an intermediate position. By moving the valve between its positions the chamber may be open to the preliminary pump means, or divided into sealed regions for establishing an ultra-high vacuum in one region and subsequently providing a preliminary vacuum in the regions without exposing the entire preliminary pump means to atmospheric pressure; also the effect on evacuation of out-gassing of a work piece within the chamber is substantially reduced.

3,446,423
AIR DISTRIBUTOR MANIFOLD AND VALVE DISK
Alfred J. Carroll, 2740 E. 2nd St., Long Beach, Calif. 90803
Filed Dec. 6, 1967, Ser. No. 688,504
Int. Cl. F04b *41/00*
U.S. Cl. 230—46 **9 Claims**

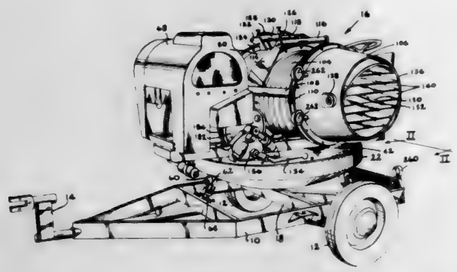


An air pressure and vacuum distribution system having an air pump, a rotary disk type distribution valve and a plurality of receiving containers. The inlet and outlet of the pump are connected to the valve and become the source of vacuum and air pressure respectively to be transmitted intermittently and alternately from the valve to each of the containers through a single conduit.

During the automatic processing of tissue or the staining of microglass slides, or the processing of photographic film as well as other related processes, it is necessary to remove and replace a liquid chemical to a glass tumbler containing the product to be treated. This recurring

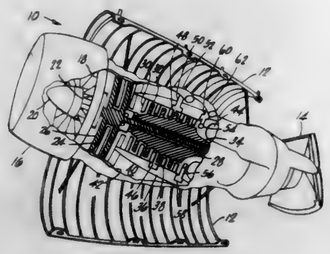
introduction and removal of the chemical to the product occurs intermittently over a considerable period of time. To automatically complete the above named cycle relieves the operator of a tedious duty, and also increases the accuracy of the treating time.

3,446,424
BLOWER DEVICE
Dale E. Wolford, Ashland, Ohio, assignor to The F. E. Myers & Bro. Co., Ashland, Ohio, a corporation of Ohio
Original application July 20, 1965, Ser. No. 476,074, now Patent No. 3,319,890. Divided and this application Mar. 15, 1967, Ser. No. 623,468
Int. Cl. F04d *27/00;* **F04f** *11/00*
U.S. Cl. 230—114 **7 Claims**



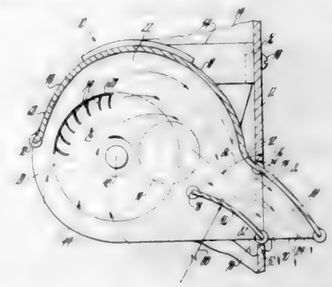
Blower device having a tiltable discharge member with a tiltable guide member in the discharge member and linkage to cause tilting of the members in unison.

3,446,425
MEANS AND METHOD FOR MINIMIZING BLEED AIR CONTAMINATION
Vincent F. Cleeves, Pacific Palisades, Calif., assignor, by mesne assignments, to McDonnell Douglas Corporation, a corporation of Maryland
Filed Apr. 27, 1967, Ser. No. 634,199
Int. Cl. F04d *27/00;* **F02k** *3/00, 1/20*
U.S. Cl. 230—114 **6 Claims**



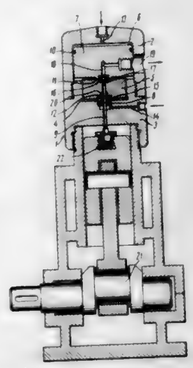
Means for minimizing entry of contaminants such as dirt particles into system using bleed air from a lower stage peripheral port of a multiple stage rotary compressor, the means including a clean air connection from a higher pressure compressor stage, valve means operable to close off the air using system and connect the higher pressure connection to the bleed air output of the lower stage for preventing discharge of contaminated peripheral bleed air therefrom, and switch means controlling the valve means and operated during periods in which particularly large quantities of contaminants enter the compressor and are carried at such times by the peripheral bleed air.

3,446,426
TRANSVERSE FLOW BLOWER FOR DISCHARGING FLUID IN A PATH DEFINED BY A SURFACE
Richard W. Bornstein, Torrington, Conn., assignor to The Torrington Manufacturing Company, Torrington, Conn., a corporation of Connecticut
Filed Apr. 3, 1967, Ser. No. 628,082
Int. Cl. F04d *17/08*
U.S. Cl. 230—125 **10 Claims**



A transverse flow blower for receiving fluid on one side of a dividing wall or the like and discharging a wide stream or curtain of fluid at relatively low velocity on the opposite side thereof and in a path of flow generally defined by the wall surface. The blower has a housing including a fluid flow discharge passageway terminating in a fluid outlet opening associated with the wall and constructed and arranged to minimize loss of angular momentum imparted to a fluid flow stream by a rotor so that the flow stream gradually dissipates as it flows along the wall.

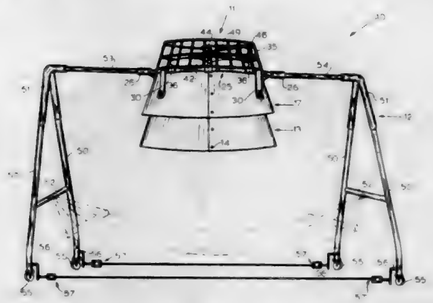
3,446,427
HIGH-PRESSURE PLUNGER-TYPE FLUID COMPRESSORS
Leonid Fedorovich Vereschagin, Kutuzovsky prospekt 2/1, kv. 231; Jury Sergeevich Konyaev, ulitsa Fersmana 11, kv. 26; Evgeny Valentinovich Polyakov, Belyaevo-Bogorodskoe, kvartal 46–47, korpus 39, kv. 73; and Ivan Efimovich Surkov, Leninsky prospekt 77, kv. 59, all of Moscow, U.S.S.R.
Filed July 12, 1967, Ser. No. 652,830
Claims priority, application U.S.S.R., July 23, 1966, 1,089,959
Int. Cl. F04b *19/20, 37/12, 21/08*
U.S. Cl. 230—172 **3 Claims**



A high-pressure plunger-type fluid compressor, having a head receiving a cylinder with a reciprocating plunger, a sleeve being mounted between the cylinder and head for sealing the plunger. The sleeve includes a first portion of hollow truncated conical shape seated in one end face of the cylinder and a second portion provided with conduits, connecting an inlet conduit in the head with the

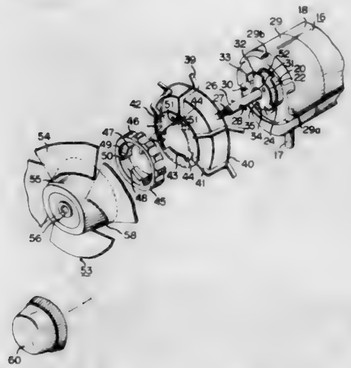
chamber in which the reciprocating plunger passes. A cover in the form of a piston is located in the head and the cylinder end faces are sealed by delivering compressed fluid to the cover.

3,446,428
MECHANISM FOR DISPELLING INSECTS AND PROTECTION FROM SUN AND DUST
Odas F. White, Box 833, Hillsborough, N.C. 27278
Filed May 12, 1967, Ser. No. 637,959
Int. Cl. F04d *25/08;* **F16m** *11/00;* **A01m** *5/08*
U.S. Cl. 230—241 **2 Claims**



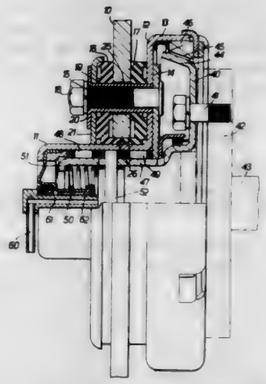
An overhead suspended and mobile insect repelling apparatus establishes a boundary layer of forced air around a given area, such as, a picnic area, a work bench, or a hammock and which prevents penetration of insects into the area but otherwise leaves the area unobstructed. A propeller and its driving motor are mounted above a pair of axially aligned air deflecting cones and the propeller-motor-cone structure is centrally suspended from a mobile frame which resides above and across the area but the area itself is left unobstructed by the frame and its suspended structure such that a conical wall of disturbed air or a buffered air zone is created around the area beneath the cones.

3,446,429
READILY DISASSEMBLED ELECTRIC FAN
Hiroshi Suzuki, Nagoya-shi, and Tadayuki Ogawa, Nishikasugai-shi, Japan, assignors to Tokyo Shibaura Denki Kabushiki Kaisha
Filed Dec. 7, 1967, Ser. No. 688,756
Claims priority, application Japan, Dec. 8, 1966, 41/112,408, 41/112,413, 41/112,414, 41/112,419
Int. Cl. F04d *25/08, 29/70*
U.S. Cl. 230—259 **4 Claims**



A mounting ring supporting the blade guard of an electric fan is dismountably mounted directly on the front boss of the motor frame and held by wedge ridges of a hand rotatable lock ring acting between radial projections fixed to the boss and the mounting ring to press and hold the mounting ring in position against the boss, and a hand rotatable spinner nut or nose piece holds a large diameter fan hub in mounted state on the motor shaft, the fan hub then enclosing and concealing the lock ring. Thus, the fan blade assembly and guard can be easily disassembled and reassembled by hand without the use of a tool.

3,446,430
FLEXIBLE TORSION COUPLINGS
Arthur Ernest Henry Elmer, Palnswick, England, assignor to Dynair Limited, Gloucestershire, England, a British company
Filed June 12, 1967, Ser. No. 645,145
Claims priority, application Great Britain, June 11, 1966, 26,129/66
Int. Cl. F04d *27/00;* **F16d** *7/02*
U.S. Cl. 230—271 **9 Claims**

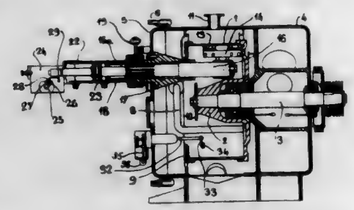


A flexible torsion transmitting coupling acting as a resilient mounting between a fan and a clutch, the coupling comprising two rubber discs between which the fan hub is clamped, each disc being formed with concentric grooves on both faces, the grooves being offset radially between opposite faces.

3,446,431
CENTRIFUGAL MACHINES
Germain Marchal, Ecully, and Max Tridon, Neuville-sur-Saone, France, assignors to Ateliers Robatel & Mulatier, Lyon, Rhone, France, a French joint-stock company
Filed Sept. 13, 1966, Ser. No. 579,106
Claims priority, application France, May 5, 1966, 47,239
Int. Cl. B04b *11/08*
U.S. Cl. 233—19 **4 Claims**

The centrifugal machine comprises a hollow member within a casing and rotatable therein, the member having an open end and a cylindrical inner periphery; with means to supply a liquid containing suspended solids into the rotating member to cause the solids to separate from said liquid under the action of centrifugal force and to form a solid layer on the inner periphery of the rotating member; with scraper means within the rotating member to scrape the solid layer from the inner periphery thereof, the scraper means being supported through the open end of the rotating member so as to be movable radially and longitudinally with respect to the axis of rotation of the rotating member; with actuating means to impart to the scraper means a first reciprocating motion parallel to the axis of rotation of the rotating member and at the same time an advancing motion in a substantially radial direction with respect to the axis towards

the inner periphery of the rotating member, the advancing motion being effected at such a slow speed with respect to the reciprocating motion that the scraper means follows a zig-zag path with respect to the layer while scraping the latter from the periphery; with means to collect and to evacuate from the rotating member the solids



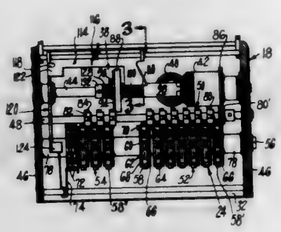
scraped therefrom; and with detecting means responsive to the thickness of the solid layer formed on the inner periphery of the rotating member, the detecting means becoming operative when the layer has reached a predetermined thickness to stop supply of liquid with suspended solids into the rotating member and to initiate operation of the actuating means.

3,446,432

METER DUPLICATOR

Bruno S. Smilgys, Hartford, Conn., assignor to Veeder Industries Inc., Hartford, Conn., a corporation of Connecticut

Filed Nov. 25, 1966, Ser. No. 596,975
Int. Cl. B67d *5/24*
U.S. Cl. 235—94 **8 Claims**



A sales number control mechanism operative during the initial phase of a fluid delivery is incorporated in a ticket printing meter duplicator. The control mechanism includes a control disk carrying a locking ring and driving gear for consecutively advancing a sales number wheel a single unit for each revolution of the disk. A spring clutch provides a driving connection for moving the disk through a single revolution for each fluid delivery operation.

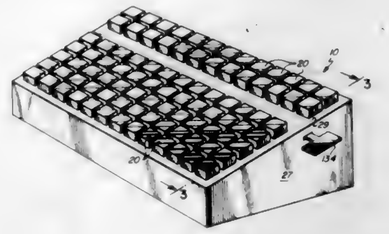
3,446,433

PUSHBUTTON CALCULATOR

Ernest L. Tibbetts, Somerville, N.J., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Dec. 20, 1967, Ser. No. 692,202
Int. Cl. G06c *7/00*
U.S. Cl. 235—145 **10 Claims**

The disclosure herein is of a pushbutton calculator comprising a plurality of columns of pushbuttons, each arranged in two groups and each pushbutton representing a numerical value, each pushbutton including a locking tab for engaging associated mechanical means for locking the button in a raised position or in a lowered position. The associated mechanical means includes a separate pivotable locking plate for each group of pushbuttons in each column of pushbuttons, with each plate extending along the length of its group of pushbuttons in a column and having its upper edge formed so that it can be engaged by the locking tab of each pushbutton. Each pair of locking plates in a column is adapted to be spread apart by a clearing bar to free any pushbuttons which were in their lowered position and had been held thereby.



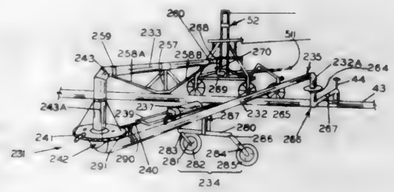
In a modification of the invention, each lockng plate is pivotally mounted and is pivoted by the clearing bar to free depressed pushbuttons.

3,446,434

IRRIGATING APPARATUS CONNECTOR ASSEMBLY

Frank J. Smith, Jr., Star Route, Logan, N. Mex. 88426, and Jarrell Lee Smith, San Jon, N. Mex. 88434

Continuation-in-part of application Ser. No. 565,931, July 18, 1966, now Patent No. 3,381,893. This application Apr. 26, 1968, Ser. No. 724,582
Int. Cl. B05b *15/06, 15/10;* **A01g** *25/02*
U.S. Cl. 239—212 **5 Claims**



A connector assembly for use between a moving sprinkler bearing pipe supported on a series of moving wheeled pipe supporting stations and a source of water therefore, comprising a series of rigid pipes operatively and pivotally connected with means therebetween for applying the pressure of said liquid to lengthen and shorten the distance between the ends of the connector assembly series of rigid pipes as the distance between the sprinkler bearing pipe and the source of water therefore increases and decreases. An improved timer for an irrigator is also provided.

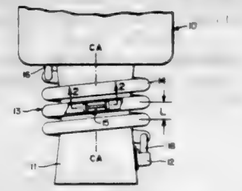
3,446,435

EXPULSION DEVICE HAVING FLOATING PISTON

James W. Hager, San Marino, Calif., assignor to Moog Inc., East Aurora, N.Y., a corporation of New York

Filed June 19, 1967, Ser. No. 647,164
Int. Cl. B64c *15/10;* **F02k** *1/20*
U.S. Cl. 239—265.23 **6 Claims**

An expulsion device in which a floating piston member is movable through a curved conduit, even one having a helical shape, the piston member being driven by a pressurized fluid applied to one end of the piston, and



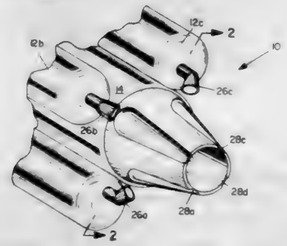
the fluid to be pressurized for expulsion being arranged on the other end of the piston member.

3,446,436

ROCKET THRUST NOZZLE SYSTEM

Stanley P. Desjardins and Charles H. Wright, Brigham City, Utah, assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

Filed Nov. 29, 1966, Ser. No. 597,698
Int. Cl. B64c *16/08, 15/10*
U.S. Cl. 239—265.25 **6 Claims**



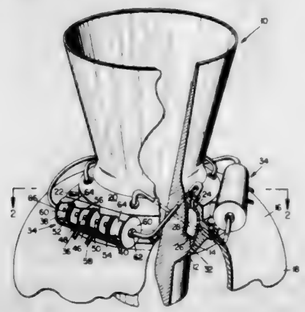
A rocket motor having; a primary thrust nozzle provided with a rearwardly convergent exterior surface, and a plurality of secondary thrust nozzles disposed around the primary nozzle so that gas discharged from the secondary nozzles is directed against the rearwardly converging surface of said primary nozzle. The converging surface serves as a truncated plug for the secondary nozzles and thereby provides more efficient expansion of gas therefrom. Means is also provided to obtain rocket motor thrust vectoring and roll control.

3,446,437

ROCKET NOZZLE SUPPORT AND PIVOTING SYSTEM

Edward E. McCullough and Edward G. Dorsey, Jr., Brigham City, Utah, assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

Filed May 5, 1967, Ser. No. 636,402
Int. Cl. B64c *15/04;* **B64b** *1/56;* **F02k** *1/24*
U.S. Cl. 239—265.35 **4 Claims**



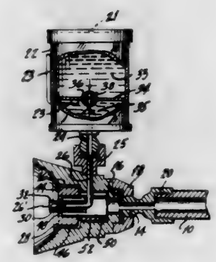
A system for rockets wherein the thrust nozzle is mounted to the aft closure of the rocket motor by an annular, hollow seal partitioned into cells and interposed between the nozzle and aft closure. The thrust nozzle may be pivoted for thrust vector control by selective inflation and deflation of the cells.

3,446,438

SHOWER HEAD MIXING ARRANGEMENT

Chelsea Watson, Jamaica, N.Y., assignor of one-half to Nathan T. Glaser, Forest Hills, N.Y.

Filed June 19, 1967, Ser. No. 647,016
Int. Cl. B05b *7/28*
U.S. Cl. 239—312 **1 Claim**



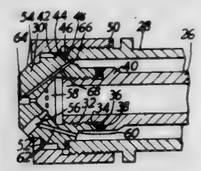
The invention comprises a shower head mixing arrangement which dispenses a concentrated quantity of bath oil or other additive from a container or reservoir upon a receiving object, such as a person, substantially before the oil or additive is spread by or mixed with water. The bath oil or additive is fed from its container into a modified conventional shower head through a tube which extends beyond (projects forwardly of) the effective open end of the shower head fixture from which the water spray is discharged.

3,446,439

LIQUID FUEL BURNERS

Iain Brown Campbell, Dumbartonshire, Scotland, assignor to Babcock & Wilcox, Limited, London, England, a company of Great Britain

Filed Feb. 20, 1967, Ser. No. 618,565
Claims priority, application Great Britain, Feb. 22, 1966, 7,705/66
Int. Cl. F23d *13/40, 15/00*
U.S. Cl. 239—419.3 **6 Claims**



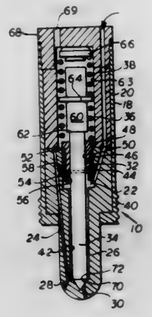
An atomizer head for liquid fuel burners capable of maintaining the flame ignition zone at the burner discharge end. The invention comprises a unitary atomizer head including a series of circumferentially spaced mixing chambers diverging in the general direction of discharge to form a conical-shaped flame and a central mix-

ing chamber discharging along the central axis of the atomizer head to form a stable ignition core for the conical-shaped flame. Each chamber being provided with separate fuel and atomizing fluid inlet ducts.

3,446,440
DOUBLE INJECTION SYSTEM WITH ONE NOZZLE

Edward C. Pelz, Jr., Grabill, and Rudolf W. Guertler, Fort Wayne, Ind., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware

Filed June 14, 1967, Ser. No. 646,032
Int. Cl. B05b *1/32, 1/30*
U.S. Cl. 239—453 6 Claims

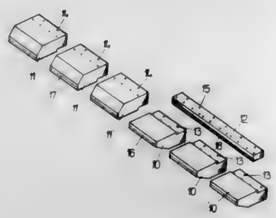


A fuel injection nozzle having a plurality of orifices and valve means associated with the nozzle to permit independent injections through said orifices at predetermined fuel pressures. The nozzle is designed to provide a pilot spray through one orifice means and a main injection through another orifice means.

3,446,441
FLAME SCARFING UNIT

Erwin Henn, Urbach-Uberdorf uber Selters, and Dieter Kimm, Frankfurt am Main, Germany, assignors to Messer Griesheim G.m.b.H., Frankfurt am Main, Germany, a corporation of Germany

Filed Dec. 22, 1966, Ser. No. 603,829
Claims priority, application Germany, Nov. 5, 1966, M 69,448
Int. Cl. B05b *1/14, 1/00*
U.S. Cl. 239—556 1 Claim

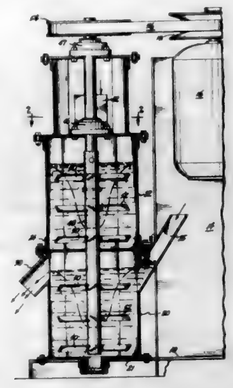


A flame scarfing unit includes a plurality of side-by-side flame scarfing torch heads attached to a common spacer which extends across the entire width of the unit. The spacer acts as both a support for the heads, as well as a means of conveying oxygen to each head. Additionally the spacer serves as a ready means for adjusting the relationship of the individual heads to each other.

3,446,442
NONPERCUSSIVE VISCOUS-SHEAR MILLING PROCESS FOR PLATY MATERIALS

George J. Carter, 10202 20th Ave. NE., Seattle, Wash. 98135

Filed Jan. 3, 1967, Ser. No. 606,902
Int. Cl. B02c *1/00;* B02b *1/100, 5/02*
U.S. Cl. 241—15 11 Claims



The invention comprises feeding a three-component viscous slurry of platy material such as mica, granular grinding media and water into and through a disintegrating zone where the slurry viscosity is maintained at a nonsegregating level and is subjected to vigorous agitation and the solids to nonpercussive milling during retention in said zone for a predetermined time, usually about 2 and 10 minutes, during which shearing forces are applied on the mica involving rubbing, attrition and flexure, while avoiding the application of material percussive forces, whereby the mica in the slurry is reduced to extremely small particle sizes fully comparable to commonly known commercial wet-ground mica.

3,446,443
PROCESS FOR RECOVERING POTASH VALUES

Howard P. Clark, Littleton, Colo, Kenneth S. Barnhill, Jr., Saskatoon, Saskatchewan, Canada, and Martin Wilson, Anaheim, Calif., assignors to United States Borax & Chemical Corporation, Los Angeles, Calif., a corporation of Nevada

Filed Dec. 8, 1965, Ser. No. 512,304
Int. Cl. B02c *1/00*
U.S. Cl. 241—20 9 Claims

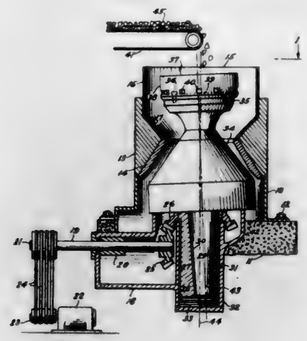


Improved procedure for preparing potash ore for froth flotation, froth flotation procedures and recovery of high content K_2O product from potash ore.

3,446,444
ROTARY CRUSHER FEEDING AID

Harvey Conrad Kern, Coopersburg, Pa., assignor to Bethlehem Steel Corporation, a corporation of Delaware

Filed Dec. 19, 1966, Ser. No. 602,893
Int. Cl. B02c *15/10, 17/04, 23/02*
U.S. Cl. 241—202 1 Claim

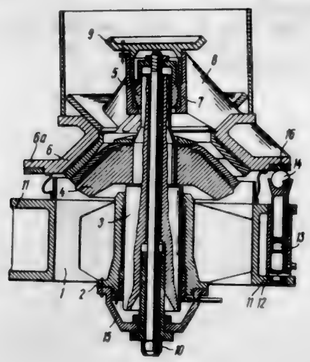


A rotary crusher has a receptacle, for receiving material to be crushed, fixed to the top of the revolving shaft of the crusher. The motion supplied to the receptacle by the shaft causes the heavier material to settle to the bottom of the receptacle while the lighter material passes over the side of the receptacle into the crusher.

3,446,445
CONE CRUSHER WITH NON-ECCENTRIC DRIVE

Vladilen Andrianovich Maslennikov, Kirovgradskaya ulitsa 71, kv. 9, and Isak Yakovlevich Khinich, ulitsa Ilicha 12, kv. 7, both of Sverdlovsk, U.S.S.R.

Filed Aug. 26, 1965, Ser. No. 482,707
Int. Cl. B02c *15/10, 17/08*
U.S. Cl. 241—209 3 Claims

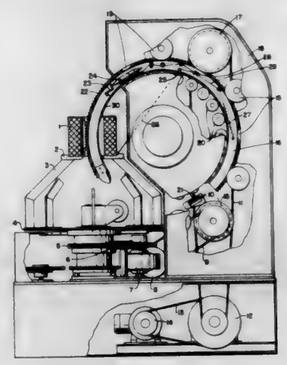


A cone crusher in which a crushing bowl is driven by a plurality of cylinders mounted vertically and arranged to engage the circumference of the bowl and drive the bowl in a circular oscillatory path relative to a stationary crushing head which receives a shaft on which the bowl is hingeably mounted.

3,446,446
TYING APPARATUS FOR TOROIDAL OBJECTS

Hendrik de Bruin, Arnhem, Netherlands, assignor to American Enka Corporation, Enka, N.C., a corporation of Delaware

Filed Apr. 7, 1966, Ser. No. 540,951
Claims priority, application Netherlands, Apr. 30, 1965, 6505578
Int. Cl. B65h *81/02;* B65b *13/10*
U.S. Cl. 242—4 2 Claims

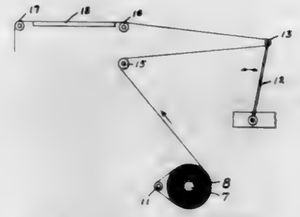


A machine for tying toroidal objects, e.g., a bundle of filaments, is provided with a rotatably driven disc having a series of upstanding brackets, each terminating in a horizontal, sector. These sectors are arranged in an annular spaced apart fashion to support the toroid. A ring-like shuttle intersects the toroid object and carries a spool of binding strand. The shuttle and support are driven in synchronism to wind the binding strand around the toroid with the spacing between the supporting sectors affording passage of the strand completely around the toroid.

3,446,447
FILM RELEASE AND BRAKING ROLLER

George E. Rosca, Warren, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

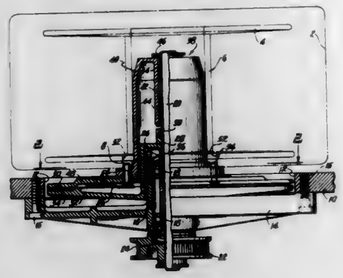
Filed Apr. 26, 1967, Ser. No. 633,875
Int. Cl. B65h *75/02*
U.S. Cl. 242—55 1 Claim



A freely rotatable idler roller is located parallel to an arbor or other support for a roll of film used for packaging, and this idler roller is near the arbor. The outside lap of the roll of film is threaded outside of the idler roller enroute to the packaging machinery so that as film is drawn from the roll the idler roller separates it from the adjacent film. The separation is only temporary because the film is then brought back into contact with the new outer ply on the roll before final separation from the roll. The idler roller is intended primarily for use with

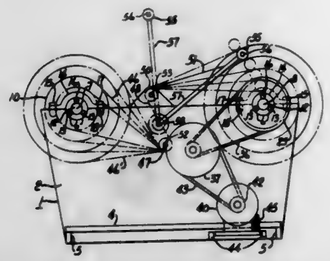
film which is somewhat tacky. It not only temporarily separates the film from the roll but also brakes the roll after each successive withdrawal of film from it.

3,446,448
FILM REEL DRIVE ASSEMBLY
Leon W. Wells, Closter, N.J., assignor to Panopix Research Inc., New York, N.Y., a corporation of New York
Filed Mar. 27, 1967, Ser. No. 626,290
Int. Cl. G11b 15/44; B65h 75/30, 79/00
U.S. Cl. 242—55.14 7 Claims



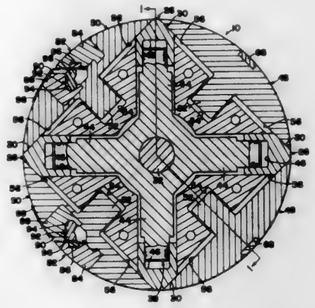
Control means for a film reel serving alternately as a supply reel and take-up reel, the reel being frictionally connected to a control member which can be rotated in only one direction, for winding film on the reel and which cannot rotate in the other direction and thus acts as a restraint frictionally resisting forcible rotation of the reel in an unwinding direction. The frictional connection also serving as the sole vertical support for the reel and film and thus maintains substantially constant tension in the film irrespective of film diameter.

3,446,449
METHOD OF WINDING PRINTING PAPER ROLLS
John L. Waychoff, Waynesburg, Pa., assignee of one-half to Leslie V. Haines, Waynesburg, Pa.
Filed Jan. 10, 1967, Ser. No. 608,439
Int. Cl. B65h 17/02
U.S. Cl. 242—67.3 7 Claims



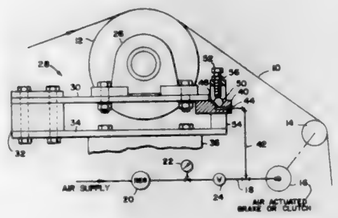
The art of winding printing paper rolls to make them uniformly solid throughout the length and depth of the roll comprising the steps of controlling the speed of winding, tightening the paper web flight to the winding roll to place it under tension, engaging the tightened flight by two guide rolls to first divide the flight into three short sections, and second to disseminate the web stresses in changing the angular direction of the next flight section, and lastly to engage the paper flight adjacent the point of tangency to expel the air and smooth out the tightened paper webbing as it forms the roll.

3,446,450
TENSION REEL GRIPPER MECHANISM
William George Sherwood, Salem, Ohio, assignor to E. W. Bliss Company, Canton, Ohio
Filed Oct. 18, 1967, Ser. No. 676,354
Int. Cl. B65h 75/18
U.S. Cl. 242—72.1 12 Claims



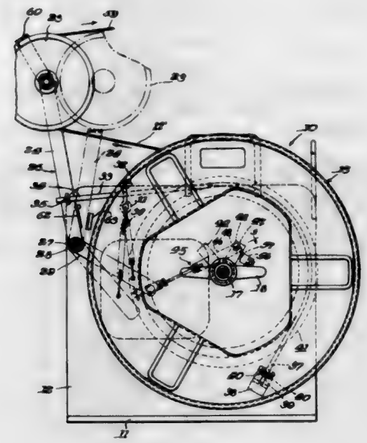
A mandrel including a stationary gripper jaw and a rotating gripper member mounted in an outwardly expanding and inwardly retracting mandrel segment, the rotating gripper member being operated by an assembly attached to a non-moveable portion of the mandrel and connected to a crank on the end of the rotating gripper member. Movement of the segment with expansion of the mandrel causes rotation of the moveable gripper jaw in a clamping direction. A spring in the operating mechanism permits automatic adaptation of the gripper mechanism for sheet material of various thicknesses.

3,446,451
SYSTEM FOR CONTROLLING WEB TENSION
Harold R. Wilcox, Maynard, Mass., assignor to Riggs & Lombard, Inc., Lowell, Mass., a corporation of Massachusetts
Filed Aug. 22, 1967, Ser. No. 662,334
Int. Cl. B65h 77/00
U.S. Cl. 242—75.43 10 Claims



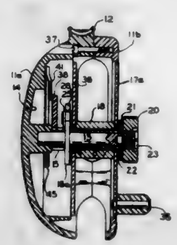
A beam carries a tension detecting roller to actuate a ball valve also carried by the beam. The valve is connected to a clutch or brake which controls a roller in engagement with the web. As the tension changes, the beam is moved causing the valve to be actuated and vary the braking or clutching action.

3,446,452
COIL UNREELER
Harold G. Tetens, Homewood, Ill., assignor to Interlake Steel Corporation, Chicago, Ill., a corporation of New York
Filed Aug. 23, 1967, Ser. No. 662,603
Int. Cl. B65h 75/30
U.S. Cl. 242—75.43 11 Claims



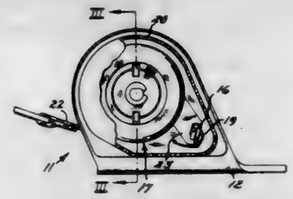
A coil unreeler for dispensing steel strapping having braking means for braking the reel and associated means for accelerating the reel from standstill to facilitate initiation of a dispensing operation.

3,446,453
FISHING REEL WITH COMBINED LINE TAKE-UP AND DRAG
Leo C. Pachner, Momence, Ill., assignor to Shoe Form Co., Inc., Auburn, N.Y., a corporation of New York
Filed Feb. 8, 1967, Ser. No. 614,678
Int. Cl. A01k 89/02
U.S. Cl. 242—84.5 1 Claim



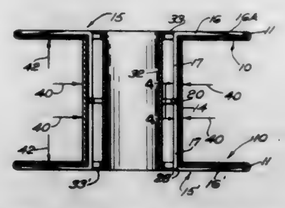
The reel spool is rotatably mounted on a tubular member rotatably disposed on a shaft fixed to the reel casing. Trigger operated means, including a gear segment pivotally mounted on the casing, drives a gear rotating on the shaft. An enlarged drum on one end of the tubular member carries a pawl in engagement with the gear for one-directional rotation of the drum. A nut on the other end of the tubular member squeezes the spool axially between drum and nut providing a friction brake connection between drum and spool.

3,446,454
EMERGENCY LOCKING RETRACTOR
Roy F. Kovacs, Royal Oak, David L. Lang, Rochester, and James T. Ligon, Almont, Mich., assignors to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Mar. 20, 1967, Ser. No. 624,259
Int. Cl. B65h 75/48
U.S. Cl. 242—107.4 5 Claims



An inertia responsive braked reel which reel is rotationally retractable and usable with safety belting as is common in aircraft and automobile seat belts and the like. The inertia clutch is responsive to rotational acceleration in the reel in one direction only in an axial manner to move a latch piece which tangentially engages the drum or reel so that no locking forces are applied to the inertia clutch structure and wherein the latch engagement with the reel or drum is equally applied to both drum flanges. Structurally a clutch plate free on the drum shaft is axially contactable by a clutch element normally in nested ramp engagement with a cam element rotatable with the drum shaft. Acceleration of the rotational speed of the drum shaft causes the clutch element to climb the cam surfaces of the cam element urging axial movement of the clutch element toward engagement with a clutch face provided in the clutch plate and thereby causing rotational movement of the clutch plate. The clutch plate includes a dog and when the plate moves the dog moves a lever. The lever is fulcrumed on a latch plate paralleling and offset from the drum flanges so that as the lever tilts the latch plate it moves toward a latch lock blocking engagement with the drum flanges to full positive engagement with the ratchet faces of the drum flange and blocking further rotation of the drum. The latch thereupon absorbs all of the stress applied to the drum and distributes the stresses to the drum journalling thereby avoiding any shock stress on the inertial clutch structure. Upon release of stress the latch pawl lock element disengages as the retractor spring rewinds the drum to any preselected return tension as desired on the belting or cable.

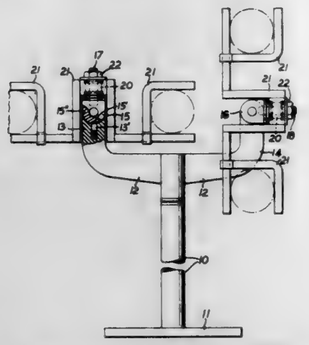
3,446,455
REINFORCED METALLIC REEL
Everett O. Starratt, Cumberland, R.I., assignor to Wanskuck Company, a corporation of Rhode Island
Filed Jan. 8, 1968, Ser. No. 696,340
Int. Cl. B65h 75/14
U.S. Cl. 242—118.8 5 Claims



A metal reel having a pair of heads between which extend a barrel and a center tube, with continuous reinforcing parts formed contiguous to the barrel and the

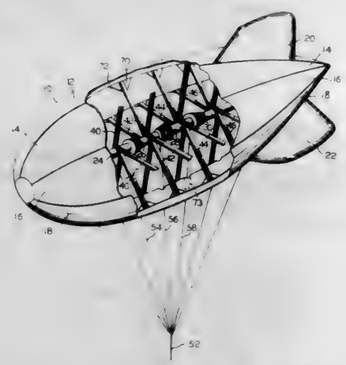
heads to resist deflection of the barrel radially inward as well as deflection of the heads out of a plane perpendicular to the rotational axis of the reel.

3,446,456
HOLDER FOR WIRE COIL
Geoffrey Phillip Wyle, 19 Lapel Lane, Halesowen, Worcestershire, England
Filed May 26, 1967, Ser. No. 641,546
Claims priority, application Great Britain, May 26, 1966, 23,614/66
Int. Cl. B65h *49/32*
U.S. Cl. 242—129 5 Claims



A wire coil holder comprised of a supporting yoke having a pair of spaced limbs each provided with a pivoted knuckle. A coil support is rotatably mounted on each pivotal knuckle so that by pivotal adjustment of the knuckles relative to their respective limbs, either coil support may assume a vertical axis while the axis of the other support is horizontal.

3,446,457
PRESSURIZED VESSEL
Arthur D. Struble, Jr., Torrance, Calif., assignor to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed Sept. 24, 1965, Ser. No. 489,987
Int. Cl. B64b *1/02, 1/06, 1/40*
U.S. Cl. 244—30 16 Claims



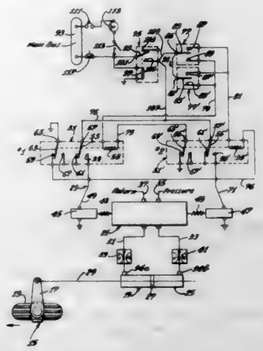
An expandable and contractible gas-filled dirigible having a plurality of radially disposed webs leading from and attached to the exterior shell of the balloon and having their other ends attached to a central rotatable shaft so that the webs can be wound upon and unwound from the shaft to contract and expand, respectively, the side walls of the dirigible, and contoured reels mounted on the shaft to rotate with the shaft having a control line, mounted on and capable of being wound on and unwound from the reel, extending through a superpressure tube in the bottom of the dirigible and thence to the outside of the dirigible to operate the spindle by pulling on the control line. A plurality of the web, reel and control line arrangements can be spaced end-to-end in the dirigible and they may be independently operable by having the shaft made in separate sections for each combination. An electrical generator may also be mounted on the shaft so that operation of the shaft will generate electricity.

3,446,458
CONTROL DEVICES FOR FLEXIBLE WING AIRCRAFT
Francis M. Rogallo, 17 Milford Road, Newport News, Va. 23601
Original application Jan. 17, 1964, Ser. No. 338,537, now Patent No. 3,396,921, dated Aug. 13, 1968. Divided and this application Sept. 1, 1967, Ser. No. 670,007
Int. Cl. B64c *3/54, 9/00;* B64d *1/08*
U.S. Cl. 244—43 5 Claims



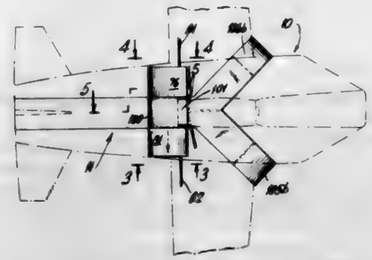
This invention is a control for a flexible wing aircraft. The flexible wing aircraft has a generally triangular-shaped superstructure including a centrally disposed keel and angularly disposed leading edge members connected to the apex of the keel. A flexible membrane-like material is fixed to the keel and leading edge members to form wing panels and a lift surface. The leading edge members and keel having a portion thereof jointed. Mechanism is provided to move the jointed portion which changes the wing plan for providing control for the vehicle.

3,446,459
NOSE GEAR STEERING SYSTEM
Theodore R. Smith, Los Angeles, and Richard G. Reese, Northridge, Calif., assignors to Ted Smith Aircraft Company, Inc., Northridge, Calif., a corporation of California
Filed Nov. 14, 1966, Ser. No. 594,011
Int. Cl. B64c *25/50*
U.S. Cl. 244—50 7 Claims



This disclosure describes a nose gear steering system for an airplane which includes fluid actuator means for turning the nose gear to thereby impart steering movement thereto. A valve controls flow of fluid to the fluid actuator and therefore controls movement of the fluid actuator. The valve in turn is controlled by valve operator means which is preferably in the form of solenoid means. Appropriate circuit means are provided to permit the pilot to selectively energize the solenoid means to thereby impart steering movement to the nose gear.

3,446,460
JET AND ROCKET ENGINE POWERED AIR-BORNE VEHICLES
Steven L. Schecter, 15 Rue Raynouard, Paris XVIe, France
Filed Dec. 23, 1966, Ser. No. 604,367
Int. Cl. B64c *15/06;* B64d *27/20*
U.S. Cl. 244—52 15 Claims



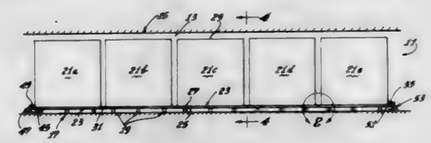
This invention concerns a device for the controlled ducting of the exhaust gases from an aircraft jet or rocket engine. By the use of this device, the exhaust gases and thrust forces can be directed in a downwardly fore, aft, right or left or rearwardly direction, either singly or in combination. In addition, partitions and passageways are provided to control the gas flow to the proper outlets, and an improved means is included to prevent exhaust gas leakage outside of the vehicle prior to reaching the proper outlets.

3,446,461
AIRCRAFT LAUNCHING SYSTEM
Harry C. Riblett, Jr. Wilmington, Del., assignor to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware
Filed Oct. 28, 1966, Ser. No. 590,284
Int. Cl. B64f *1/06*
U.S. Cl. 244—63 4 Claims



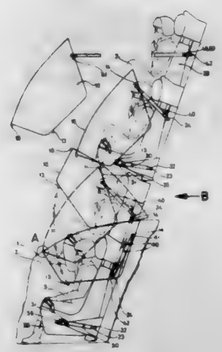
A device for launching aircraft from a standing stop on a runway includes a variable speed transmission between a flywheel and a tape reel. The variable speed transmission includes two drive trains with one being a substantially lower speed reduction than the other. The low speed reduction drive train is connected to initiate movement of the aircraft. After the aircraft has attained a certain speed or moved a certain distance the low speed drive train is disengaged and the other drive train engaged to bring the aircraft to final launching speed.

3,446,462
CARGO CARRIER INTERLOCK SYSTEM
Paul S. Brenia, Torrance, Calif., assignor, by mesne assignments, to Tridair Industries, Redondo Beach, Calif.
Filed Apr. 14, 1967, Ser. No. 631,036
Int. Cl. B64d *9/00;* B61d *45/00;* B65j *1/24*
U.S. Cl. 244—118 16 Claims



This disclosure describes a system for utilizing the several cargo carrying units within a cargo transporting vehicle such as an aircraft so that the several cargo carrying units will react structurally to dynamic forces substantially as a single unit. The cargo carrying unit may be a pallet, a container, etc. In the specific embodiment illustrated, this unitizing feature is acomplished by interlocking the adjacent cargo carrying units by interlocking means mounted directly on such units. The interlocking means disclosed are of the quick connect and quick disconnect type.

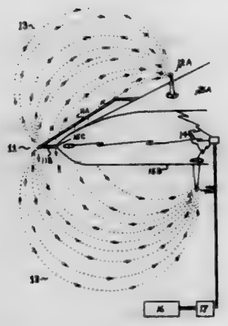
3,446,463
EJECTION SEAT SYSTEM
Manfred Feld, Grobenzell, and Herbert Lieser, Hans Lincks and Helmut Stockert, Munich, Germany, assignors to Entwicklungsring Sud G.m.b.H., Munich, Germany, a corporation of Germany
Filed Jan. 24, 1967, Ser. No. 611,279
Claims priority, application Germany, Jan. 25, 1966, E 30,922; Feb. 25, 1966, E 31,116
Int. Cl. B64d *25/10, 25/04;* B64c *1/14*
U.S. Cl. 244—121 16 Claims



A releasable canopy for aircraft structure flying near or above supersonic speeds wherein said canopy is disengageably pivoted at its forward end to the aircraft structure and is provided with telescoping separable linking means interengaging the canopy and the airplane structure and which upon movement pivot the canopy to disengage it from the pivoting means and position it in front of the ejection seat, and interlocking means including telescoping separable links which engage the canopy upon being re-

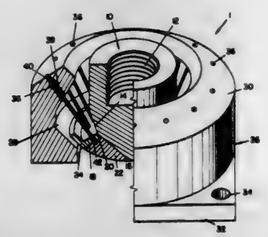
leased from the pivoting means to maintain it in position forwardly of the ejection seat, and pressure responsive means within said links for separating the links to release the canopy from the seat.

3,446,464
METHOD AND APPARATUS FOR REDUCING SONIC WAVES AND AERODYNAMIC DRAG
William A. Donald, 5 La Rue Drive, Huntington, N.Y. 11743
Filed Mar. 9, 1967, Ser. No. 621,982
Int. Cl. B64c *1/38, 3/38*
U.S. Cl. 244—130 11 Claims



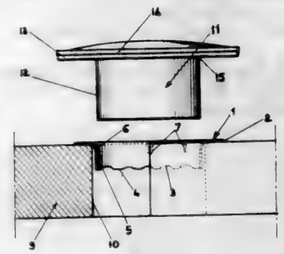
Sonic waves and aerodynamic drag on air frames are reduced by applying an electric field to the air in the vicinity of the leading edge of the air frames. For this purpose, electrodes are provided adjacent the leading edge and at a location rearwardly of the leading edge and a difference of potential is applied to the electrodes to establish an electric field between them. The field may be uniform with potentials of opposite polarity applied to the forward and rearward electrodes or may be nonuniform with a field strength that increases from the forward towards the rearward electrodes.

3,446,465
FLEXURE PIVOTS
Clarence E. Niskanen, Brigham City, Utah, assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed May 19, 1966, Ser. No. 551,254
Int. Cl. F16m *1/00, 11/06*; A47b *91/00*
U.S. Cl. 248—5 4 Claims



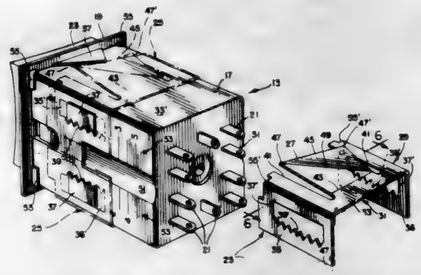
A load supporting device wherein a pivot member is positioned in a base member and connected thereto by angularly disposed flexure rods to support and transmit heavy loads under conditions including both restrained pivotal and roll motion.

3,446,466
FASTENER FOR ENCASING MEASURING INSTRUMENTS
Camille Renaudin, 5 Impasse Billard, Morteau, Doubs, France
Filed Nov. 29, 1966, Ser. No. 597,786
Claims priority, application France, Aug. 5, 1966, 72,286
Int. Cl. F16b *91/00*
U.S. Cl. 248—27 3 Claims



This disclosure is concerned with a fastener for encasing the case of an indicating mechanism in an encasing element having a walled opening, the fastener being insertable in the opening and including an unthreaded tube-shaped, resilient ring adapted to receive therein the case, the fastener having a circular outer periphery and a rim at the upper part thereof, the rim overlapping the upper end of the opening, and having a plurality of small outwardly flaring legs positioned immediately below the rim and in snap-on engagement with the walls of the opening.

3,446,467
PANEL MOUNTING FOR ELECTRICAL COMPONENTS AND THE LIKE
James R. Bailey, Chicago, and Robert J. Bokosky, Park Ridge, Ill., assignors to Switchcraft, Inc., Chicago, Ill., a corporation of Illinois
Filed Mar. 13, 1967, Ser. No. 622,689
Int. Cl. H02b *7/00*
U.S. Cl. 248—27 5 Claims



An arrangement for the panel mounting of devices, such as electrical switches and the like, by the application and latching of the device, in a panel opening, entirely from one side of the panel, through employment of mounting clip means detachably and adjustably secured upon the device to be mounted, said clip means comprising thin gauge, resilient sheet material and hence being insertable, through the panel opening, in position attached upon the device to be mounted, the clip means providing an outstanding latching lug, depressible to permit passage thereof, together with the device to be mounted, into the panel opening, in position to engage a latching edge of the lug with an edge of the panel opening, to secure the device in mounted position, on the panel, said clip means and the device having interengaging

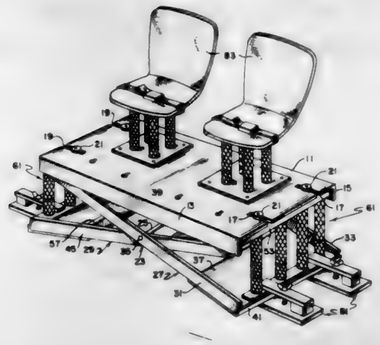
abutment means, for securing the clip means in longitudinally adjusted position on the device to be mounted, to thereby accommodate mounting panels of diverse thickness.

3,446,468
HANGER FOR FLEXIBLE TUBE CONTAINERS
Paul Sakwa, 825 New Hampshire Ave., Washington, D.C. 20037
Filed Feb. 24, 1967, Ser. No. 618,402
Int. Cl. B65d *35/08*
U.S. Cl. 248—108 1 Claim



A hanger for attachment to the base of a flexible tube for suspending it from a rod or holder.

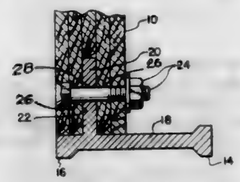
3,446,469
SCISSOR SHOCK PLATFORM
Frank I. Whitten, Bethesda, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Nov. 14, 1967, Ser. No. 682,838
Int. Cl. A47b *95/00, 91/00*; B60r *21/10*
U.S. Cl. 248—346 7 Claims



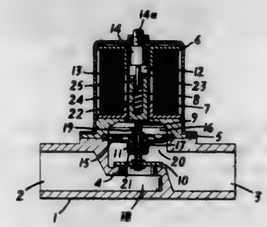
A top plate or platform carrying personnel or equipment to be protected is carried by two panel-form torsionally stiff scissor elements, there being a center hinge rod for the scissor elements and an upstanding crushable, disposable insert supporting the scissor elements against the platform at each end. The scissors elements are supported by a base member in which the elements may slide when there is shock loading.

3,446,470
CONCRETE WALL FORM PANEL WITH PARTIAL STUDDING
George F. Bowden, Northbrook, and John R. Gilbert, Chicago, Ill., assignors to Symons Mfg. Company, Des Plaines, Ill., a corporation of Delaware
Filed Dec. 27, 1966, Ser. No. 604,728
Int. Cl. E04g *9/00*; E04c *2/00*
U.S. Cl. 249—192 3 Claims

A rectangular concrete wall form panel consisting of a flat plywood facing and reinforcing metal studding in the form of only two side members in straddled relation with the side edges of the facing and characterized by the fact that such side members have integral inwardly extending coextensive flanges which fit and are secured within coextensive grooves in the side margins of the facing.

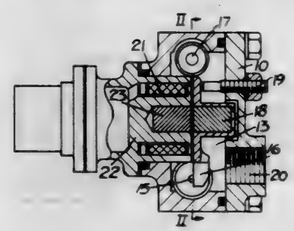


3,446,471
MAGNETIC OPERATED VALVE UNIT, PARTICULARLY FOR GASES
Dieter Westphal, Murwik-Flensburg, Germany, assignor to Danfoss A/S, Nordborg, Denmark, a company of Denmark
Filed Nov. 1, 1966, Ser. No. 591,327
Claims priority, application Germany, Nov. 4, 1965, D 48,579
Int. Cl. F16k *31/10*
U.S. Cl. 251—52 2 Claims



Electro-magnetically operated valve having a damping arrangement, similar to a dash pot (constricted bypass tube (17), (19)) for the valve element (10) and a further damping arrangement for the operating plunger associated with the valve solenoid (7) to prevent chatter and noise.

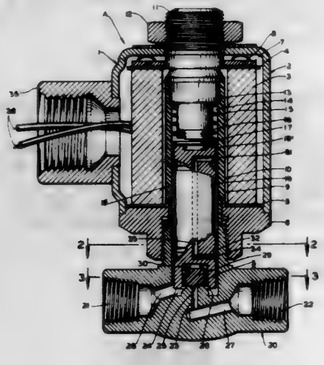
3,446,472
ELECTRICALLY OPERATED FLUID FLOW CONTROL DEVICES
Frank George Freeman, Solihull, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England
Filed July 18, 1966, Ser. No. 565,873
Int. Cl. F16k *1/20, 31/04*
U.S. Cl. 251—65 2 Claims



An electrically operated fluid flow control device comprises a body, a deflectable arm connected at one end within the body, and carrying means to interrupt a stream of fluid flowing towards an outlet in the body, an electro magnetic device for moving the deflectable member in one direction and a pair of permanent magnets on the

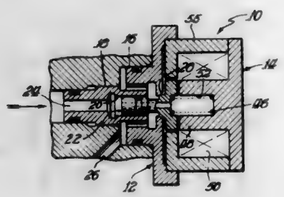
member and on the body respectively, having like poles adjacent to oppose the action of the electro magnetic device.

3,446,473
PULSED SOLENOID CONTROL VALVES
George E. Barker, St. Louis, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Continuation-in-part of application Ser. No. 412,921, Nov. 23, 1964. This application May 6, 1965, Ser. No. 453,707
Int. Cl. F16k 31/00, 31/02
U.S. Cl. 251—64 14 Claims



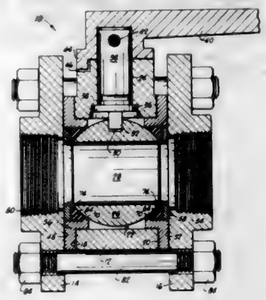
A dithering solenoid actuated valve which comprises a valve housing and an internal sleeve forming a chamber for a dithering valve plunger. A solenoid coil is disposed around the sleeve for actuating the valve plunger in response to an external signal. A plurality of axially spaced guide rings are circumferentially disposed about the valve plunger and bear against the interior wall of the sleeve. The guide rings form a peripheral band of contact and flex for the distance that the valve plunger moves in its chamber so that a portion of the guide ring at the peripheral band of contact always remains in contact with the interior surface of the sleeve during the flexing movement thereof. This type of action substantially reduces both radial and undesirable vibratory action of the valve plunger.

3,446,474
HYDRAULIC PILOT VALVE
John R. Diver, Lake Forest, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed July 31, 1967, Ser. No. 657,404
Int. Cl. F16k 31/02, 39/00
U.S. Cl. 251—141 8 Claims



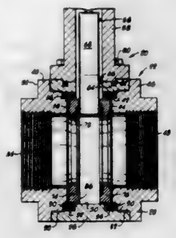
An electro-magnetically actuated hydraulic pilot valve mechanism having a poppet valve overbalanced to a normally closed position by hydraulic pressure acting on a differential area in conjunction with a spring biasing force, the valve being magnetically actuatable to open position.

3,446,475
BALL VALVES WITH RETAINED SEALS
Domer Scaramucci, Oklahoma City, Okla., assignor to Balon Corporation, Oklahoma City, Okla., a corporation of Oklahoma
Filed Feb. 10, 1966, Ser. No. 526,571
Int. Cl. F16k 5/06, 27/06
U.S. Cl. 251—151 9 Claims



A ball valve having a multi-part seat assembly, particularly at the downstream end of the valve. The seat assembly comprises an elastomer ring to provide the primary seal, and the elastomer ring is held by two metal rings which form secondary, metal-to-metal seals.

3,446,476
VALVES WITH MOVABLE SEALS
Domer Scaramucci, Oklahoma City, Okla., assignor to Balon Corporation, Oklahoma City, Okla., a corporation of Oklahoma
Filed May 12, 1965, Ser. No. 455,202
Int. Cl. F16k 25/00
U.S. Cl. 251—172 5 Claims

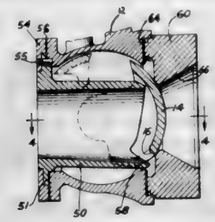


A valve structure having a floating valve member and upstream and downstream seals. Each seal includes a seating ring elastically held on the respective side of the valve member by a sealing ring bonded to the outer periphery of the seating ring and clamped between the end of the valve body and an end connector. Each seating ring also has an elastic seal member near the inner periphery thereof engaging the valve member in order to expose the major portion of the inner end of the seating ring to the pressure in the valve body, whereby excessive body pressure will move the upstream seating ring away from the valve member and bleed the excessive pressure into the upstream end of the valve.

3,446,477
BALL VALVE CONSTRUCTION
David J. Ainsworth and Loren L. Bovee, Marshalltown, Iowa, assignors to Fisher Governor Company, Marshalltown, Iowa, a corporation of Iowa
Filed Dec. 5, 1966, Ser. No. 599,298
Int. Cl. F16k 5/06, 5/12
U.S. Cl. 251—208 5 Claims

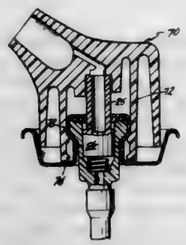
A flow control valve having an annular housing disposed

in the opening through the valve for defining fluid flow passage. The housing includes a tongue-like projection for cooperating with an inverted notch in the valve plug.



Alignment means are provided for orienting the housing about its longitudinal axis to properly position the tongue-like projection with respect to the notch in the valve.

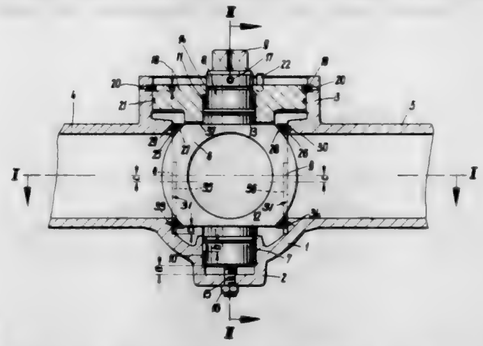
3,446,478
AEROSOL VALVE ACTUATOR BUTTON
Walter C. Beard, Jr., Middlebury, and Paul M. Kotuby, Naugatuck, Conn., assignors to The Risdon Manufacturing Company, Naugatuck, Conn., a corporation of Connecticut
Filed Jan. 3, 1967, Ser. No. 606,653
Int. Cl. F16k 31/16, 31/00
U.S. Cl. 251—297 3 Claims



The invention pertains to an actuator button for aerosol valves permitting pre-assembly of the button to the valve to prevent accidental loss or disengagement of the button yet minimizing the possibility of unintentional actuation of the valve during the pre-assembly; provision is also incorporated in the button for maintaining an oriented direction of product discharge relative to the valve axis and also for effecting continuous venting of a container to which the valve is assembled.

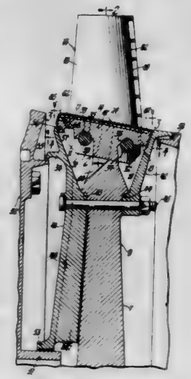
3,446,479
VALVE WITH BALL-SHAPED STOP COCK
Heinz Boldt, Berlin-Charlottenburg, Germany, assignor to Borsig Aktiengesellschaft, Berlin-Tegel, Germany
Filed Dec. 1, 1965, Ser. No. 510,867
Int. Cl. F16k 5/06, 27/06
U.S. Cl. 251—315 5 Claims

A valve with ball-shaped stop cock and a one-piece housing in which the ball cock is provided with two bearing studs journalled in the valve housing and cover thereof respectively while two seating rings are so arranged in said housing that they are able to slide in the direction of the axis of the ball cock, and that the outer cylindrical surfaces of the seating rings are in line contact with surfaces parallel to the ball cock axis and forming upwardly directed extensions of semicylindrical surfaces, the housing cover being adapted by means of an adjusting screw arranged in the bottom of the valve housing to be clamped



together with a multi-sectional insert ring through the intervention of the ball cock and an annular disc.

3,446,480
TURBINE ROTOR
Calvin W. Emmerson, Mooresville, and George B. Meginnis, Indianapolis, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 19, 1966, Ser. No. 602,795
Int. Cl. F01d 5/18
U.S. Cl. 253—39.15 10 Claims

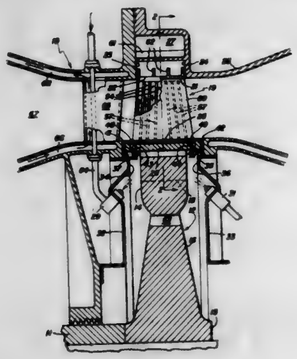


A turbine wheel particularly adapted for cooling. Hollow air-cooled blades inserted through holes in the rim are retained by circumferential rings under the rim passing through holes in the blade bases. A sheet slightly spaced from the rim by projections defines a passage for cooling air between the sheet and the rim.

3,446,481
LIQUID COOLED TURBINE ROTOR
Paul H. Kydd, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed Mar. 24, 1967, Ser. No. 625,745
Int. Cl. F01d 5/04, 5/18, 25/12
U.S. Cl. 253—39.15 18 Claims

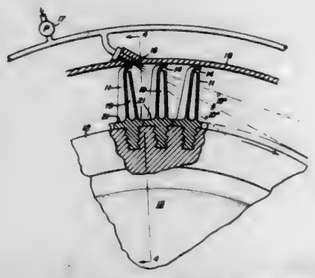
Several structural arrangements are shown for the use of liquids to cool the buckets, bucket platforms, rotor disc rim and, if present, the bucket shroud of a gas turbine by the outwardly directed distribution of cooling liquid from within the turbine. The cooling liquid is: (a) sprayed against the rotor disc from a plurality of stationary spray nozzles at least some of which are supported by one or more nozzle diaphragms, (b) collected

in at least one confining circumferentially disposed gutter region under either or both blade platform projections until such liquid is brought up to rotational speed, (c) dispersed under the influence of centrifugal force into



and along passageways in the bucket platforms and into and through at least one open-ended cavity extending in the direction of the radial dimension of each of the turbine buckets, and then finally ejected from the open distal end of each bucket.

3,446,482
LIQUID COOLED TURBINE ROTOR
Paul H. Kydd, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed Mar. 24, 1967, Ser. No. 625,837
Int. Cl. F01d *5/08, 5/18, 25/12*
U.S. Cl. 253—39.15 **18 Claims**



A structural arrangement is shown for liquid cooling of gas turbine buckets, the liquid being directed inwardly from the turbine casing by a plurality of stationary spray nozzles and then being urged into the interior of the buckets at least in part by scoops disposed adjacent the distal end of each bucket.

Also, the aforementioned cooling arrangement is described in combination with the distribution of cooling liquid from within the turbine to cool the rotor disc rim and the bucket platforms as well as the buckets, themselves.

3,446,483
CONTROL SYSTEM FOR TURBINES
Miles A. Townsend, Rockford, Ill., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 13, 1966, Ser. No. 586,455
Int. Cl. F01d *17/06, 17/20, 19/00*
U.S. Cl. 253—59 **7 Claims**

1. In a turbine generator unit comprising a turbine drivingly connected to an electrical generator,

governing valve structure for controlling the flow of motive fluid to said turbine,

a servomotor for positioning said governing valve structure,

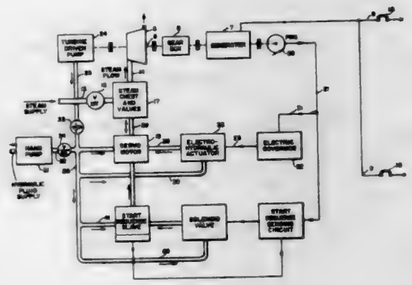
a speed governor for controlling said servomotor in a manner to maintain the speed of said turbine at a predetermined value,

means for sensing the speed of said turbine and providing a speed input signal to said governor,

means including a first pump driven by said turbine for providing pressurized fluid to said servomotor,

means including a second pump for providing pressurized fluid to said servomotor when said first pump is not in operation,

said speed governor being ineffective to control said servomotor when said speed input signal is below a certain value,



means for positioning said servomotor in a manner to move said governing valve structure to an open position during the period when said speed input signal is below said certain value, thereby to initiate flow of motive fluid to the turbine with attendant rotative acceleration of the turbine and generator, and

means for tripping said positioning means when said speed input signal attains said certain value and automatically transferring control of said servomotor to said governor, so that the speed of the turbine is thereafter automatically controlled by said governor.

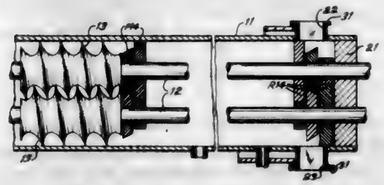
3,446,484
FAIL SAFE DEVICE FOR LOAD HOISTING EQUIPMENT
Leonard Walsh, Forestville, and William F. Graves, Suitland, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed Nov. 29, 1967, Ser. No. 686,394
Int. Cl. B66d *1/00, 1/48, 1/36*
U.S. Cl. 254—135 **8 Claims**



A fail safe device for use with pulleys to eliminate danger to personnel and equipment if the cargo hook is

drawn into eye of the pulley. A messenger which is attached to the cable a short distance ahead of the load, has a cutting mechanism to sever the cable when the messenger strikes the eye of the pulley. A catcher arm is mounted on the pulley to catch and retain the severed line.

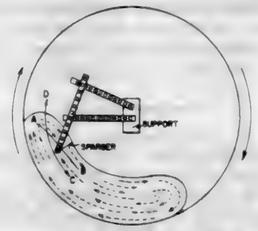
3,446,485
MIXING APPARATUS
Charles Frederick Fischer, Jersey City, N.J., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
Continuation-in-part of application Ser. No. 509,803, Nov. 26, 1965. This application Sept. 22, 1966, Ser. No. 581,330
Int. Cl. B01f *15/02, 7/04*
U.S. Cl. 259—6 **19 Claims**



1. In an apparatus for the continuous mixing of materials and for the continuous discharge of the resulting mixture, said apparatus comprising a housing having a feed end and a discharge end, a pair of parallel shafts in said housing, means for driving said shafts to rotate both shafts in the same direction, said shafts having thereon a series of pairs of mated mixing and shearing paddles arranged lengthwise of said shafts and within said housing, each of said mated pairs comprising a paddle mounted on one of said shafts and a cooperating and aligned paddle mounted on the other of said shafts, each mated paddle being elongated and having an arcuate edge and a wiping tip, the construction and arrangement being such that during the rotation of said shafts and of the paddles carried thereby, said tips wipe against the arcuate edges of the mated, paired paddles, said pairs of paddles including forwardly pitched pairs whose edges and tips are pitched in a direction to move the materials in said housing away from said feed end and toward the discharge end, the improvement which comprises a discharge opening in said housing adjacent said discharge end for the discharge of said mixture in a direction generally transverse of said shafts, said discharge opening having an edge more remote from said feed end and an upstream edge close to said feed end, and, mounted on said shafts and adjacent said more remote edge, a mated pair of said mixing and shearing paddles, the paddles of said latter pair being reversed pitch paddles having their mating edges and tips pitched in a direction to move the mixture toward said feed end.

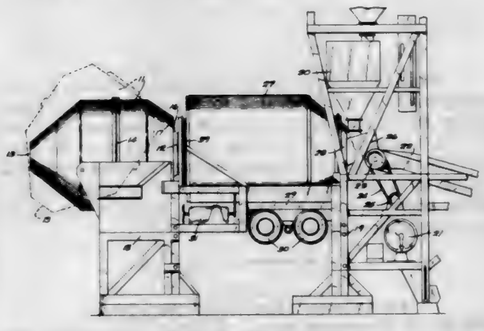
3,446,486
METHOD OF SPARGING FLUIDS INTO ROLLING BEDS OF PARTICULATE SOLIDS
Wilbur A. McPherson, Baxter Springs, Kans., and Robert W. Hamilton, Joplin, Mo., assignors to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 26, 1967, Ser. No. 611,962
Int. Cl. B01f *15/02, 9/00*
U.S. Cl. 259—15 **1 Claim**

Fluid is sparged into a highly turbulent zone of a rolling bed of particulate solids in a horizontal revolving drum with minimum drag on the bed by permitting forces acting in the bed to move the sparger in a substantially vertical path, intersecting at a substantial angle the nodal



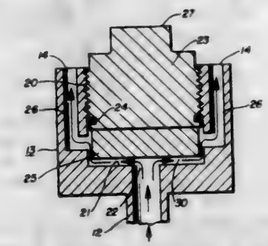
area between particles which are being lifted upward and those which are flowing downward.

3,446,487
CONCRETE MIXERS
Robert W. Strehlow, New Berlin, Wis., assignor to Rex Chainbelt Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed Nov. 21, 1967, Ser. No. 684,797
Int. Cl. B28c *5/20, 7/16*
U.S. Cl. 259—161 **7 Claims**



A horizontal concrete mixer is arranged as part of a concrete batching plant in which it may be combined with a tilting concrete mixer. The horizontal mixer provides initial and partial mixing and is provided with means for simultaneously dividing the batch for faster and more thorough mixing and for selectively directing one of the divided portions into the tilting mixer or back into the mixing area of the horizontal mixer.

3,446,488
GAS BUBBLE GENERATING AND DISTRIBUTING SYSTEM
Isaac Paul Mall and William E. Copple, Tulsa, Okla., assignors to Combustion Engineering, Inc., New York, N.Y., a corporation of Delaware
Filed Aug. 8, 1966, Ser. No. 570,884
Int. Cl. C02b *1/20*
U.S. Cl. 261—77 **4 Claims**



A device for the production of small bubbles from a gasified fluid is comprised of a housing in which a central

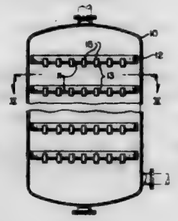
cavity is formed with a face having a central opening, a plurality of passages formed in the housing to connect with the central opening, and a structure attached to the housing and providing decreased pressure for fluids flowing from the central opening to the plurality of passages. Means are provided to adjust the position of the structure with respect to the housing to determine the decrease in pressure.

3,446,489

LIQUID DISTRIBUTORS AND REDISTRIBUTORS FOR CONTACT TOWERS

Max Leva, 1030 Dallett Road, Pittsburgh, Pa. 15227

Filed July 8, 1965, Ser. No. 470,369
Int. Cl. B01d 3/22
U.S. Cl. 261—97 8 Claims



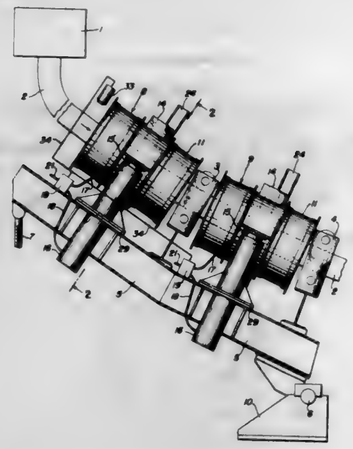
A liquid distributor for contact towers having at least one horizontal plate secured to the walls of the tower, flange means around the periphery of the plate defining a well, a plurality of openings distributed over the plate surface and a porous member in each opening communicating through said plate, the porosity of said members being adjusted so that their output substantially equals the normal input onto the plate.

3,446,490

CONTINUOUS METAL HEATING

Edward F. Kurzinski, Upper St. Clair, Bridgeville, Pa., assignor to Selas Corporation of America, a corporation of Pennsylvania

Filed Sept. 11, 1967, Ser. No. 666,825
Int. Cl. F27b 9/28
U.S. Cl. 263—3 4 Claims



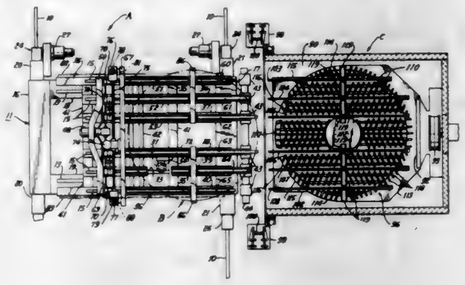
A movable furnace unit is provided to be moved from a position in which it surrounds a strand of metal coming from a continuous casting machine to a position to one side of said strand.

3,446,491

APPARATUS FOR HANDLING OPEN COILS OF STRIP METAL

Edward P. Espenschied, Fairview Park, and Robert R. Hill, Westlake, Ohio, assignors to Lee Wilson Engineering Company, Inc., Cleveland, Ohio, a corporation of Ohio

Filed Sept. 22, 1967, Ser. No. 669,824
Int. Cl. F27b 9/24
U.S. Cl. 263—6 10 Claims



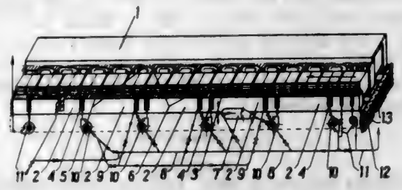
Apparatus for transferring and supporting open coils of strip metal especially in connection with the heat treating of a coil in an annealing furnace. The parallel lift bars of the coil transfer carriage and the coil supporting structure in the furnace plenum chamber have provision for supporting beneath the coil one or more support bars extending transversely of the lift bars. The support bars help support those arcuate portions of the coil convolutions which would otherwise be unsupported during charging and removal. The support bars are moved as a pallet along the with coil being transferred so that some means of support is provided for the coil in one or more zones extending transversely of the direction of travel of the coil into and out of the annealing furnace. An improved grid construction for supporting the coil above the furnace plenum chamber is also provided.

3,446,492

TUNNEL FURNACE FOR HARDENING OF BRIQUETTED COKE

Kazimierz Dybal, Bytom, and Eugeniusz Stwora and Kazimierz Suchon, Gliwice, Poland, assignors to Biuro Projektow Prezemyslu Hutniczego "Biprohut" Gliwice, Poland, a corporation of Poland

Filed Jan. 31, 1967, Ser. No. 612,887
Claims priority, application Poland, Jan. 31, 1966, P 112,724
Int. Cl. F27b 9/14; F26b 19/00
U.S. Cl. 263—28 1 Claim



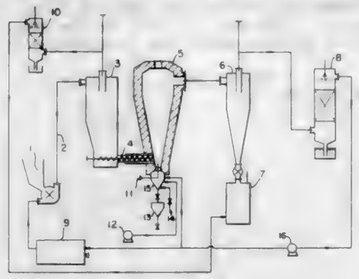
A tunnel furnace for hardening of briquetted coke having a chamber divided into several zones and one open side in the chamber. This opening is closed off by charging cars which hold the briquetted coke on shelves which are spaced to permit gas flow between them. A combustion chamber provides hot gas to vertical feeding nozzles which are also adapted to receive gases from a cold circulation collector beneath the chamber.

3,446,493

HIGH SPEED CONTINUOUS METHOD AND APPARATUS FOR CARBONIZATION AND ACTIVATION OF ORGANIC MATERIAL

Orio Imai, Sagamihara-shi, and Yoshiro Usuba and Shozo Ito, Funabashi-chi, Japan, assignors to Mifuji Iron Works Co., Ltd., Tokyo, Japan, a company of Japan

Filed June 6, 1967, Ser. No. 644,023
Int. Cl. C01b 31/08; C10l 5/40
U.S. Cl. 263—36 12 Claims



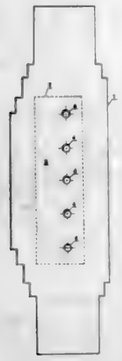
An improved high speed continuous method for carbonizing organic material and an apparatus for carrying out the method. The organic material such as lignite, coal waste and forest mill waste are dried by passing through a flash dryer and carbonized or activated within an internal heating furance of inverted cone shape having a bottom box disposed thereunder for mixing the recycle gas with air or air and steam. The recycle gas fluidifies the organic material burnt within the furnace. The carbonized product is discharged to a product receiver and liquid byproduct is drained off the bottom box into a draining off means. The inert gas produced by a gas washer for treating the discharged gas from the flash drier is fed to the product receiver for cooling and extinguishing the product.

3,446,494

METHOD AND DEVICE FOR THE PROTECTION OF THE REFRACTORY MASONRIES

Giancarlo Consogno, Via G. Tellini 27, Piombino, Italy

Filed Feb. 27, 1967, Ser. No. 618,747
Claims priority, application Italy, Mar. 1, 1966, 4,627/66
Int. Cl. F27d 7/06, 9/00; C21b 7/10
U.S. Cl. 263—44 14 Claims



The invention relates to method and apparatus for the protection of refractory masonries and in particular the crowns of open hearth furnaces. In accordance with the invention, nitrogen is insufflated under pressure against the furnace crown so that between the crown itself and the atmosphere of the furnace there is formed a cushion of nitrogen under pressure which is continuously renewed. Preferably, the nitrogen is introduced under pressure in a direction substantially tangent to the crown to be protected. The pressure of the nitrogen insufflation is preferably kept between 4 and 12 atmospheres and the nitrogen delivery is controlled so that its cooling action on the masonries to be protected keeps the masonries at a selected temperature which may, for example, vary between 1,400° C. and 1,600° C.

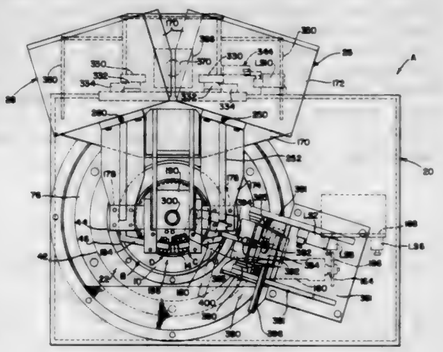
Apparatus for carrying out the method comprises a set of nozzles for blowing the nitrogen under pressure just under the crown of an open hearth furnace through a series of blowing heads fed through suitable conduits. Each blowing head is preferably provided with a set of nozzles and axial conduit for supplying cooling liquid under pressure, an outer jacket providing an annular air cavity for return of the cooling liquid and a cylindrical chamber placed at the end of the head to receive the cooling liquid. A suitable set of conduits puts the chamber in communication with the lower zone of the annular air cavity. The nozzles for the nitrogen are preferably radially disposed in a sector of the blowing head.

3,446,495

APPARATUS FOR HARDENING GEAR TEETH

George D. Pfaffman, Farmington, Mich., and Robert G. Armstrong, Chardon, Ohio, assignors to Park-Ohio Industries, Inc., a corporation of Ohio

Filed June 16, 1966, Ser. No. 558,087
Int. Cl. C21d 9/32
U.S. Cl. 266—4 9 Claims



1. An apparatus for hardening the spaced teeth of a gear, said teeth being arranged in a circle having a given circumference, said apparatus comprising:

(a) an inductor means for simultaneously heating a selected number of alternate teeth in an arc sector extending along only a portion of said circumference;

(b) a quenching unit associated with said inductor means for quenching said heated teeth;

(c) means for indexing said gear to bring successive arc sectors along said circumference into alignment with said inductor means;

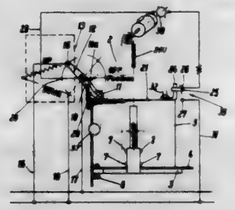
(d) control means for causing said indexing means to index said gear a sufficient number of times and distances to heat and quench each of said teeth with said number of indexing times causing at least two revolutions of said gear with the alternate gears that are unhardened during the first revolution being hardened during a subsequent revolution;

(e) means for causing relative movement between said inductor means and said gear in a direction axial

of said gear before said gear is indexed to prevent interference between said teeth and inductor means; and,

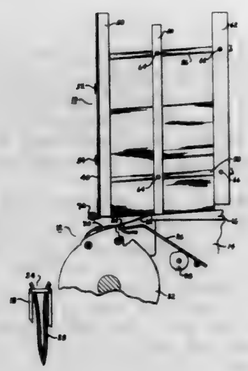
(f) means for moving said inductor means into operative position with respect to said teeth after said gear is indexed.

3,446,496
DEVICE FOR CONTROLLING THE SHEET STACK OF A SHEET PROCESSING MACHINE
Adolf Schwebel, Offenbach am Main, Germany, assignor to Mabeg Maschinenbau GmbH. Nachf, Hense & Pleines GmbH. & Co., Offenbach am Main, Germany, a firm of Germany
Filed Feb. 2, 1967, Ser. No. 613,633
Int. Cl. B65h *1/08, 3/08*
U.S. Cl. 271—31 7 Claims



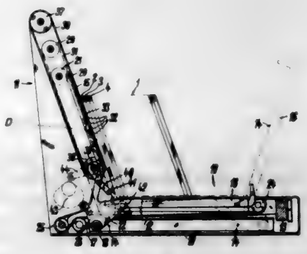
The invention resides in a device in which a switching device has a first switching position energizing drive means for lifting the stack of sheets, a second switching position energizing the drive means for lowering the stack and a third position constituting an off or rest position disconnecting the drive means and in which detecting means controlled by the stack reaching a predetermined upper position or lower position move the switching device from the first position and the second position respectively, to the off position.

3,446,497
ENVELOPE HOPPER
Frederic A. Hamann, 2219 N. Brookfield, South Bend, Ind. 46628
Filed Oct. 7, 1966, Ser. No. 585,070
Int. Cl. B65h *1/06, 3/08*
U.S. Cl. 271—32 4 Claims



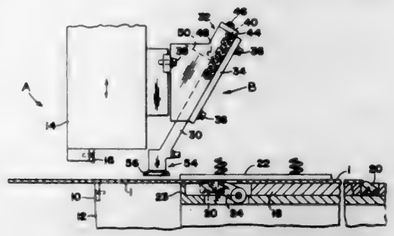
A hopper for feeding envelopes into a stuffing machine, in which a front plate forms a guide for the envelopes and adjustable side members retain the envelopes of any particular size in the proper location for feeding. The side members consist of several horizontally movable, vertical members mounted on spaced shafts and supported by the front plate.

3,446,498
APPARATUS FOR SEPARATING SHEETS OR LIKE ARTICLES FROM A PILE
Walter Reist, Hinwil, Zurich, Switzerland, assignor to Ferag, Fehr & Reist A.G., Hinwil, Zurich, Switzerland
Filed May 12, 1967, Ser. No. 638,073
Claims priority, application Switzerland, May 13, 1966, 6,995/66
Int. Cl. B65h *1/02, 3/08, 3/22*
U.S. Cl. 271—44 15 Claims



A device for separating sheets from a pile by holding the pile in tilted attitude while a withdrawal device reciprocates back and forth for successively removing the bottommost sheet from the pile. The withdrawal device may include pivotal sheet engaging members or may have a second back and forth movement towards and away from the pile.

3,446,499
SHEET MATERIAL HANDLING APPARATUS
John S. Ringler, Hastings, Mich., assignor to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware
Filed Jan. 5, 1968, Ser. No. 695,981
Int. Cl. B65h *5/08, 5/16;* B26d *5/22*
U.S. Cl. 271—54 8 Claims



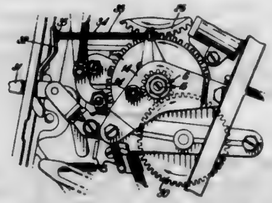
The specification discloses an improved means for finally locating blanks in a machine having a vertically reciprocated working member and means for intermittently feeding blanks to a position beneath the working member. The improved means comprise a first member carried by the working member and having a lower end portion extending beneath the working member when the working member is in its uppermost position. Engaging means are carried by the lower end portion for contacting a subjacent blank as the working member moves downwardly. Additionally, constraining means are provided to cause the first member to move the contacting means horizontally after contacting the blank to thereby move the blank to a final located position.

3,446,500
ARTICLE FEEDING CONSTRUCTION
John A. Meier, Deerfield, Ill., assignor to A. B. Dick Company, Niles, Ill., a corporation of Illinois
Filed Apr. 7, 1967, Ser. No. 629,237
Int. Cl. B65h *1/00*
U.S. Cl. 271—62 7 Claims



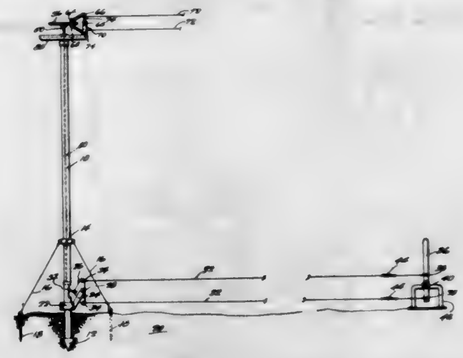
A construction including a hopper for stacking a plurality of separate pieces, the pieces being characterized by a non-uniform thickness whereby a pile of the pieces supported on a flat surface will include pieces having a progressively greater angle with the horizontal from the bottom of the pile to the top of the pile. The hopper includes a bottom plate which will be depressed in response to the weight of the pile in the hopper and the amount of depression is such that the top piece in the pile will always be maintained in a substantially horizontal position to facilitate removal of the top piece from the pile for feeding purposes. Means are provided for adjusting the resiliency of the bottom plate so that pieces of differing characteristics can be accommodated in the construction.

3,446,501
CLUTCHES
Albert George Ronald Gates, London, England, assignor to Gestetner Limited, London, England, a British company
Filed Nov. 16, 1967, Ser. No. 683,527
Claims priority, application Great Britain, Nov. 16, 1966, 51,420/66
Int. Cl. B65h *1/00*
U.S. Cl. 271—62 16 Claims



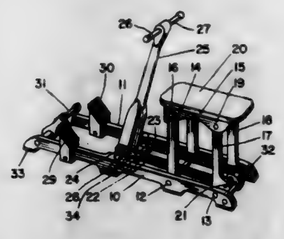
The invention relates to a clutch mechanism which may be manually engaged and disengaged and which, when engaged, will remain in this condition until the torque differential between the driving and driven members exceeds a predetermined adjustable value at which point cam surfaces on the driving and driven members throw the clutch out of engagement by overcoming an adjustable detent mechanism. The clutch is preferably, but not essentially, for use in a power driven feed board raising mechanism for a duplicator.

3,446,502
MODEL AIRPLANE CONTROL DEVICE
Cordell Damron, R.F.D. 2, Box 755, and Thurman J. Borders, City 4, Box 14A, both of Pikeville, Ky. 41501
Filed July 6, 1967, Ser. No. 651,428
Int. Cl. A63h *27/02;* A63g *5/00, 31/14*
U.S. Cl. 272—31 5 Claims



A model airplane control device providing remote flying control of a model airplane without having to stand at the center of a flying circle and turn around with each revolution of the airplane, by means of a firmly mounted pole having a hollow shaft, a control rod actuable therein by linkages so that the attitude of the model aircraft is directly controlled, as well as any other parameter desired, by the linkage mechanism driving the control rod either upwardly or downwardly, as desired for controlling the airplane.

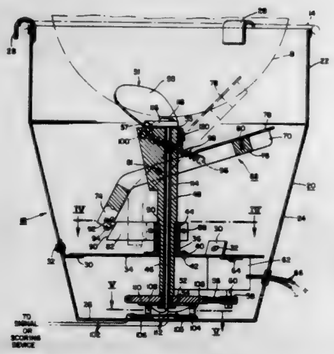
3,446,503
PULL TYPE EXERCISING DEVICE
Donald C. Lawton, 35 Parkside Drive, Berkeley, Calif. 94705
Filed Mar. 17, 1967, Ser. No. 624,014
Int. Cl. A63b *21/00*
U.S. Cl. 272—79 7 Claims



This disclosure relates to a portable exercising machine comprising a support structure and seat. The seat is coupled to the support structure by legs pivoted at their lower and upper ends to the support structure and the seat respectively to define a parallelogram. An actuating bar is pivoted at its lower end forward of the seat to the support structure, and a connecting rod in turn is pivoted at one end to the actuating bar at a point above its pivot point to the support structure and pivoted at its other end to an eccentric point above and to the rear of one of the leg pivot points. The arrangement is such that the weight of a person seated on the seat will cause the seat to rock forward and downwardly which action through the medium of the connecting rod will move the actuating bar in a swinging arc

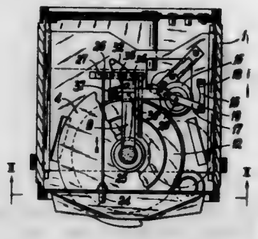
forwardly and downwardly. The person may then pull on the actuating bar which, through the medium of the connecting rod, will raise the seat.

3,446,504
BASKETBALL REPLAY DEVICE
Ronald W. Pascucci, 824 High St., Pottstown, Pa. 19646
Filed Aug. 11, 1966, Ser. No. 571,826
Int. Cl. A63b *67/00, 57/00*
U.S. Cl. 273—1.5 10 Claims



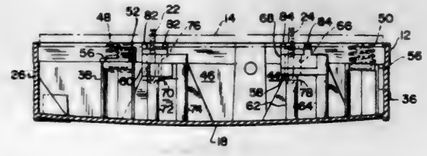
An upright shaft is mounted in a receptacle having an open top for receiving a basketball. The shaft is revolved by a belt and pulley drive actuated by an electric motor. An ejector arm is mounted on the shaft for rocking movement about a horizontal axis. The ejector arm has a tail which carries a cam follower that engages a stationary cam. The ejector arm rotates with the shaft to spin a ball tossed into the basket, and the cam follower travels over the cam surface to rock the ejector arm as required to eject the ball from the basket.

3,446,505
RECORD PLAYING DEVICE
Renato Tiraboschi and Oreste Tiraboschi, both of Viale Adda I, Lecco, Coma, Italy
Filed Dec. 8, 1965, Ser. No. 512,497
Claims priority, application Italy, May 7, 1965, 10,444/65
Int. Cl. G11b *25/04*
U.S. Cl. 274—1 13 Claims



1. A record playing device particularly adapted to be incorporated in phonographic apparatus or sound reproducers, also of the coin operated type, comprising
(a) a supporting frame having two sides,
(b) a turntable mounted on one side of said supporting frame so as to be rotatable about an axis,
(c) a motor for driving the turntable,
(d) a pair of spaced supports mounted on one side of said supporting frame and extending outwardly therefrom,
(e) a fixed axle mounted between said supports,
(f) a first arm adjacent said turntable carrying at one of its ends a record centering collar and pivoted at its other end to said fixed axle so as to be rotatable thereabout through a pre-selected angle thereby to move said record centering collar into an inoperative position in which said collar does not hold a record on said turntable or into an operative position in which said collar holds a record on said turntable,
(g) a pivot secured to said first arm so as to extend substantially parallel to the axis of rotation of said turntable,
(h) a second arm (30) fulcrumed at one of its ends to said pivot and mounting at its other end a phono pick-up carrying a needle, and
(i) a first lever pivoted to said fixed axle and connected with said first arm, said first lever being susceptible of being engaged and pivoted about said fixed axle by a record being placed on said turntable, thereby to pivot said first arm together with said second arm about said fixed axle and thus to take said record centering collar into said operative position and said needle carried by said phono pick-up to engage into the sound groove in said record placed on said turntable.

3,446,506
PHONOGRAPH CABINET
Donald P. Knapp, Des Plaines, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed June 17, 1966, Ser. No. 558,392
Int. Cl. G11b *1/02*
U.S. Cl. 274—2 3 Claims

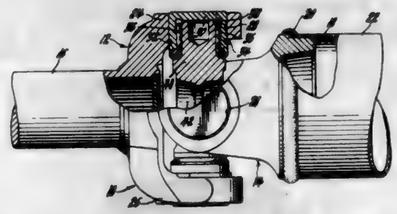


Support posts extend from the bottom of a tray for housing a chassis of a phonograph turntable and record changer. Springs are connected to the bottom of the chassis and engage the support posts to suspend the chassis in a floating condition. Lips mounted to the top of the support posts prevent movement of the springs when the record turntable is moved from the horizontal to vertical position within the cabinet. A further pair of posts each having a top mounting portion extend from the bottom of the tray and threaded fasteners extend through the chassis and apertures in the top mounting portions of the posts. Spring clips are threaded to the fasteners and are moved from a vertical to a horizontal position to engage the bottom of the upper support portion to lock the chassis in position.

3,446,507
UNIVERSAL JOINT BEARING SEAL ASSEMBLY
George Ulics, Saginaw, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 21, 1966, Ser. No. 580,921
Int. Cl. F16j *15/38, 15/54, 15/00*
U.S. Cl. 277—92 3 Claims

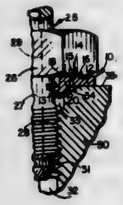
A Cardan-type universal joint has a plastic shield engaging the trunnion, and a rubber seal compressively interposed between the plastic shield and the bearing cup so that any movement between members occurs between the shield and the trunnion reducing the wear of the seal and enabling it to have a longer life. A second embodiment uses a larger cross-section rubber seal so that in position in the point, the rubber seal bulges filling any

empty spaces between the parts to eliminate dirt traps. A third embodiment adds a flange to the shield which ex-



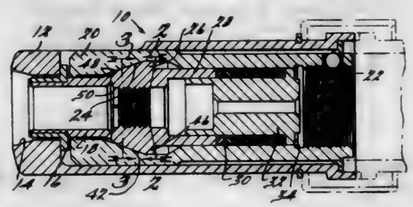
tends between the trunnion and the bearing cup to exclude foreign matter from the seal surface.

3,446,508
DEFORMABLE SEALING RING HAVING INTEGRAL SPACER FLANGE
John F. Mayer, El Segundo, Calif., assignor to Navan Incorporated
Filed June 20, 1966, Ser. No. 558,795
Int. Cl. F16j *15/00*; B65d *53/00*; F16l *19/02*
U.S. Cl. 277—180 4 Claims



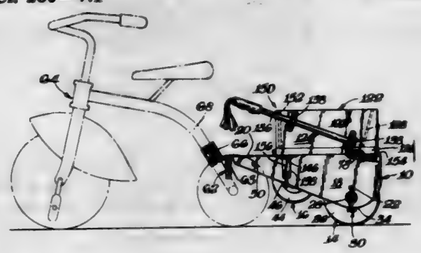
A high pressure sealing ring, adapted for use in joining a pair of fluid conducting members, and comprising a substantially cylindrical body having an integral flange extending radially outward from the body. A circumferential groove in the flange permits the body to be deformed flexibly with respect to the flange when the lower curved portion of the body is forced against a conical camming surface on one of the members to be joined. This deformation forms line contact seals between the body and the members being joined. The flange provides a secondary seal and also prevents excessive stress on the sealing body.

3,446,509
CHUCK JAW
Louis E. Colosimo, St. Clair Shores, Mich., assignor to Huck Manufacturing Company, Detroit, Mich., a corporation of Michigan
Filed June 1, 1966, Ser. No. 554,534
Int. Cl. B23b *31/10, 5/22*; B25g *3/22*
U.S. Cl. 279—7 8 Claims



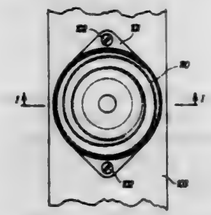
A chuck jaw assembly for a tool for setting fasteners and having a plurality of jaw segments which segments are relieved at their circumferential extremities.

3,446,510
PLAY TOY
Ralph J. Seewald, 1 Janvier Ave., New Castle Manor, New Castle, Del. 19720
Filed Dec. 2, 1966, Ser. No. 598,698
Int. Cl. B62k *13/00*
U.S. Cl. 280—7.1 9 Claims



A play toy arrangement comprising a chassis having a retractable front wheel assembly and a rear wheel assembly, and a plurality of elements arranged for releasable locking engagement with the chassis for readily converting the chassis into various vehicle forms.

3,446,511
SOLE SUPPORT FOR SAFETY SKI BINDINGS
Hannes Marker, Hauptstrasse 51–53, Garmisch-Partenkirchen, Germany
Filed Apr. 7, 1967, Ser. No. 629,193
Claims priority, application Germany, Apr. 28, 1966, M 69,324
Int. Cl. A63c *9/086*
U.S. Cl. 280—11.35 12 Claims

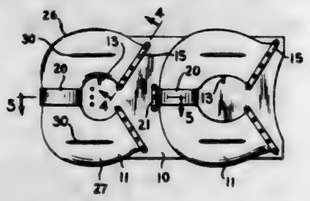


A sole supporting plate for supporting the forward part of the sole of a skiing boot in a safety ski binding having a toe iron is free of side stops and movable parallel to the surface of the ski. Guide means are connected to the sole supporting plate and in lost-motion interengagement with a guide plate that is secured to the ski. The sole supporting plate is connected by a boltlike element to a holding-down plate, which is disposed in a disclike recess, which is parallel to the surface of the ski and formed in the guide plate, which embraces the holding-down plate on all sides. A space is provided on all sides between the bolt element and the rim of the opening in the guide plate and between the holding-down plate and the inwardly facing rim of the recess in the guide plate. An elastic restoring device is disposed on all sides between the holding-down plate and the inwardly facing rim of the recess in the guide plate.

3,446,512
SNOW SURFER
N B Gardner, 1501 S. Tootle Road, Tootle, Wash. 98649
Filed Sept. 11, 1967, Ser. No. 666,881
Int. Cl. B62b *13/02*
U.S. Cl. 280—12 7 Claims

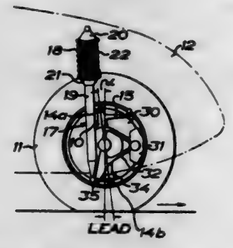
A sled having runners formed from the rubber inner tube of an automobile tire. The tube is cut and secured to the under side of a deck board in semi-circular, U or

horseshoe shape, the cut ends being sealed and the tube inflated through its valve fitting. Two or more such tubes



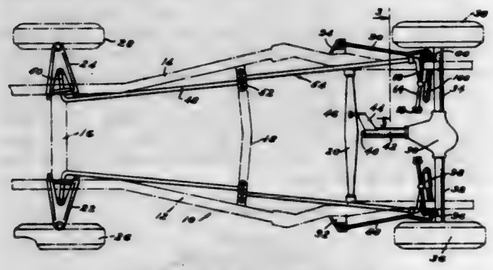
may be used in tandem. Instead of using inner tubes, the inflatable runners may be specially molded or molded integrally with a rubber deck to make a one-piece sled.

3,446,513
STABILIZING SUSPENSION FOR A PAIR OF STEERABLE ROAD WHEELS OF AUTOMOBILES
Axel Hugo Welertz, Bellevuevagen 24, Malmo, Sweden
Filed May 29, 1967, Ser. No. 641,763
Int. Cl. B62d; B60g; B60p
U.S. Cl. 280—96.2 8 Claims



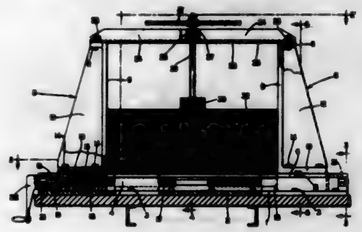
In an automobile there is arranged between the steering knuckle of a steerable road wheel and the automobile frame a link which transmits to the steering knuckle a force actuating the steering of the road wheel in dependence on the momentum of the frame and load thereon.

3,446,514
INTERCONNECTED VEHICLE SUSPENSION
William D. Allison, Grosse Pointe Farms, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Mar. 1, 1967, Ser. No. 619,735
Int. Cl. B60g 11/18
U.S. Cl. 280—124 9 Claims



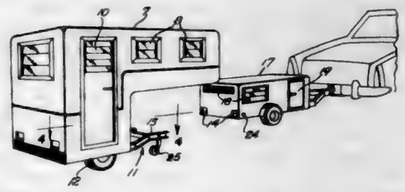
A vehicle suspension system in which each of the wheels supports the end of a longitudinally extending torsion bar and the torsion bars for the front and rear are interconnected on the left and right sides. With this construction, forces produced by jounce and rebound wheel movement at one wheel will be transferred, at least in part, to the other wheel on the same side of the vehicle.

3,446,515
TRUCK BED LOAD BINDER
Thomas T. Julian, Jr., 1901 Ivy St. NW., North Canton, Ohio 44720
Filed Sept. 14, 1967, Ser. No. 667,819
Int. Cl. B60p 7/08
U.S. Cl. 280—179 6 Claims



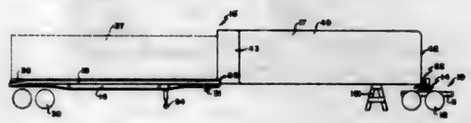
A truck bed load binder vise having two spaced posts slidable laterally toward and from each other on a truck or trailer bed, freight car or other vehicle, pressure pads on the opposed faces of the posts for clamping against opposite sides of a load of steel, left and right-hand screw means operating the posts, a cross member slidably connected to the upper ends of the posts, a screw shaft threaded centrally through the cross member, and a pressure pad on the lower end of the screw shaft for clamping upon the top of the load of steel.

3,446,516
TRAILER FOR AUTOMOTIVE VEHICLES AND THE LIKE
Leslie D. Modglin, P.O. Box 16, Oneida, Ill. 61467
Filed Sept. 16, 1966, Ser. No. 579,907
Int. Cl. B62d 63/06
U.S. Cl. 280—415 2 Claims



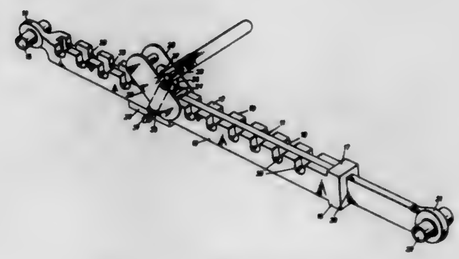
This trailer is made up of two trailers which are closely coupled together in end-to-end relation, with a portion of the last trailer projecting over a portion of the front trailer. The front trailer may be a boat trailer or an extra storage container.

3,446,517
FREIGHT VEHICLE WITH A ROLLBACK BODY
George T. Stewart, North Vancouver, British Columbia, and Ernest J. Lapratrie, Nanaimo, British Columbia, Canada, assignors to Stewart Lapratrie Skinback Trailers Ltd., North Vancouver, British Columbia, Canada
Filed Feb. 7, 1968, Ser. No. 703,692
Int. Cl. B62d 53/06, 27/00; B60p 1/64
U.S. Cl. 280—423 9 Claims



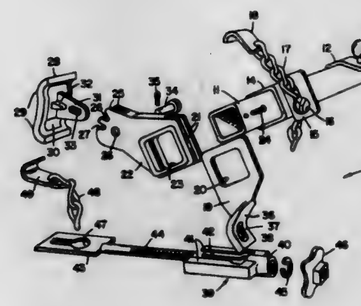
A vehicle having a cargo-supporting frame and a body movable longitudinally and independently of both the cargo and the frame.

3,446,518
SELECTIVELY EXTENSIBLE TELESCOPING HITCH LINK
John R. Dodgson, Burneside, Staveley, near Kendall, and Stanley R. Sharpe, Warton, near Atherstone, England; said Dodgson assignor to Barsyke Limited, a corporation of Great Britain
Filed May 4, 1967, Ser. No. 636,122
Int. Cl. B60d 1/00; F16b 7/14; F16l 27/12
U.S. Cl. 280—482 5 Claims



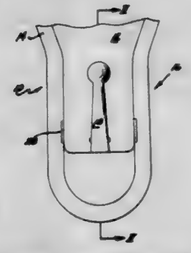
The invention comprises an extensible link which is adapted to be used to connect a tractor and a towed implement (e.g., an agricultural implement). The link has two longitudinal members one of which comprises two spaced apart bars and the other a single bar slidable between the spaced bars of the first member. One member has a series of notches and the other has two notches—the pitch of the two notches being different to that of the series. A securing member is pivoted on one of the longitudinal member and is spring loaded into either of two positions in each of which it locks the two longitudinal members by placing a rod in aligned notches.

3,446,519
TRAILER HITCH
Stanley R. Garner, Los Angeles, Calif., assignor to Valley Tow-Rite, Inc., Lodi, Calif., a corporation of California
Filed Apr. 17, 1967, Ser. No. 631,333
Int. Cl. B60d
U.S. Cl. 280—502 3 Claims



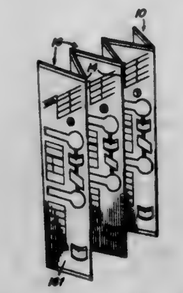
A trailer hitch for attachment to a vehicle bumper, which hitch has chained hooks to engage the upper and lower edge of the bumper and a pad to engage the middle of the bumper and in which the pad is tiltable to engage vertical or slanting bumpers and the lower chain tightener is tiltable so that a straight pull is placed on the lower chain whether the bumper be narrow or wide.

3,446,520
COUPLER MECHANISM FOR BALL-TYPE TRAILER HITCHES
Clyde E. Gibson and Don M. Peterson, Crossville, Tenn., assignors to General Processing Corporation, Crossville, Tenn.
Filed July 12, 1967, Ser. No. 652,787
Int. Cl. B60d 1/06, 1/04
U.S. Cl. 280—512 19 Claims



A housing defining a generally spherical cavity which has a side opening communicating with a bottom opening of a diameter smaller than that of the cavity, with a latch element pivotally mounted within the housing so as to have a first pivotal position which surfaces of the latch element serve to at least partially close the side and bottom openings of the cavity, to entrap a ball inserted therewithin. The latch element is pivotal to a second position in which it is removed sufficiently from the aforesaid side and bottom openings of the cavity to admit entrance of a ball thereinto. A spring-loaded plunger is mounted on the housing to engage the latch elements in its first or ball-entrapping position, to thereby lock this element in such position. An operating handle is attached to this plunger for manually retracting it away from the latch element to permit movement of the latter toward its second pivotal position, and this handle may be indexed against the housing to hold the plunger in its retracted position. The latch element bears against the retracted plunger when the latch is moved to its second position and pushes on the plunger to move it at least a slight amount. This allows a spring to move the operating handle out of its indexed position against the housing, such that when the latch element is moved back from its second to its first position the plunger will automatically be biased into its locking position with respect to the latch element.

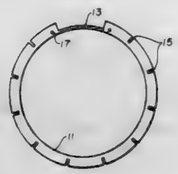
3,446,521
PILOT'S LOG
Douglas W. Logan, 206 E. Franklin, Weatherford, Okla. 73096
Filed Feb. 7, 1967, Ser. No. 614,465
Int. Cl. B42d 15/00; B64d 47/00
U.S. Cl. 283—62 1 Claim



An information presenting flight log comprising a plurality of hingedly interconnected vertically elongated sec-

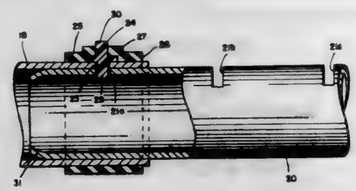
tions which enable the selective disclosure of information, for example the current leg of a flight. The log incorporates means for presenting a visual indication of the significance of the information both so as to facilitate the recording of the information and a review of the information.

3,446,522
INTERNAL RETAINING RING
Charles T. Hoard, Oakland, Calif., assignor to the United States of America as represented by the Atomic Energy Commission
Filed May 12, 1967, Ser. No. 639,253
Int. Cl. F16d *1/06*; B60b *27/06*; F16c *3/10*
U.S. Cl. 287—52 6 Claims



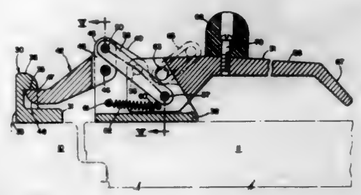
A locking retaining ring which may be made of a flexible, inelastic material is radially severed. One end is partially cutaway so as to terminate in a flexible tab that extends along the internal circumference of the ring into engagement with the opposite end to lock the ring in its fully expanded position in a mating groove. The tab may be bent clear of the opposite end to permit contraction of the ring to a smaller diameter to permit its insertion into or removal from the groove.

3,446,523
SELF-LOCKING ADJUSTABLE TENT POLE
Ellwood E. Little, Wichita, Kans., assignor to The Coleman Company, Inc., Wichita, Kans., a corporation of Kansas
Filed Oct. 19, 1966, Ser. No. 587,925
Int. Cl. F16b *7/10*; E04g *25/02*; E21d *15/14*
U.S. Cl. 287—58 1 Claim



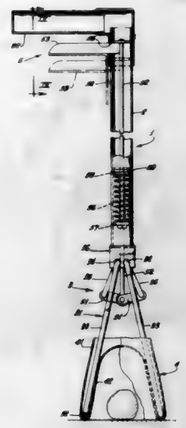
A self-locking adjustable tent pole which includes telescoping inner and outer tubular members. The outer tubular member is provided with a recess in its wall, and the inner tubular member is provided with a plurality of axially spaced recesses. An arcuately shaped locking key is received by the recess in the outer tubular member and is resiliently urged inwardly by a flexible, resilient perimetric jacket which is ensleeved on the outer tubular member. The jacket urges the locking key against the inner tubular member, and the length of the telescopic pole may be selectively fixed by moving the tubular members axially with respect to each other until the locking key is received by the appropriate recess in the inner tubular member. The tubular members may be easily unlocked merely by rotating one with respect to the other to force the locking key out of the recess in the inner member.

3,446,524
LINK AND LEVER OPERATED TOGGLE LATCH MECHANISM
John K. Barry, Springfield, Pa., assignor to Southco, Inc., Lester, Pa., a corporation of Delaware
Filed Nov. 3, 1967, Ser. No. 680,482
Int. Cl. E05c *3/32*; E05b *1/00*
U.S. Cl. 292—223 12 Claims



A latching device is provided, for mounting on a door or the like and engaging a keeper mounted on a door frame, the device being actuated by a manually engageable lever which is operative through an over-center toggle-link mechanism to actuate a locking pawl into locking engagement with the keeper mounted on the door frame. The lever may be spring-biased into a locking position of the locking pawl. The pawl is especially configured for camming engagement with a plate carried by the door frame to facilitate the application of leverage for prying open the door by means of the lever, the lever being useable as a door handle.

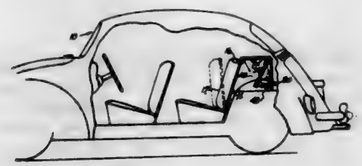
3,446,525
SANITARY PICKUP DEVICE FOR ANIMAL DROPPINGS AND LIKE MATERIAL
Lawrence M. Jones, 999 E. Valley, Apt. 56, Alhambra, Calif. 91801
Filed June 9, 1967, Ser. No. 644,920
Int. Cl. A47f *13/06*; B66c *1/10*
U.S. Cl. 294—19 3 Claims



A sanitary and convenient portable pickup device for animal droppings and like unclean material which includes an elongated body that carries a pickup means at its lower end. The pickup means includes a pair of virtually rectangular open wire frame pickup members that

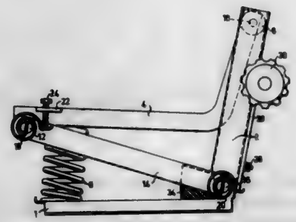
are movable toward and away from one another by control means operable from the upper end of the body. The members are adapted to releasably support a disposable wrapper in the form of an inverted bag having opposed compliant panel or sheet portions positioned between the pickup members to sealingly enclose or wrap animal droppings or the like (by expanding outwardly through the open frame members) when the members are brought together and to subsequently release the droppings. The used bag may be readily removed from the members and replaced with a fresh bag.

3,446,526
COLLAPSIBLE COVER FOR LUGGAGE COMPARTMENTS IN COMPACT VEHICLES
Wayne J. Peters, 1504 Knobhill, Milford, Mich. 48042
Filed Nov. 7, 1966, Ser. No. 592,441
Int. Cl. B60r *5/04*, *7/00*
U.S. Cl. 296—37 2 Claims



1. In a vehicle having inwardly disposed wheel wells, a back wall, a tiltable rear seat, and an open luggage compartment between the seat and the back wall; a collapsible cover for such open luggage compartment comprising a flat panel, means pivotally connecting the flat panel to the back wall of the vehicle, a flap pivotally attached to each end of the flat panel swingable inwardly thereby permitting the cover to be pivoted between the inwardly disposed wheel wells from a fully retracted position against the back wall of the vehicle to an extended position where it is laterally supported on the rear seat so as to enclose the luggage compartment.

3,446,527
RESILIENT CHAIR SUPPORT, ESPECIALLY FOR SEATS IN MOTOR VEHICLES
Bror Göthe Persson, Idrottsvagen 5, Oskarshamn, Sweden
Filed Apr. 27, 1967, Ser. No. 634,178
Claims priority, application Sweden, Apr. 28, 1966, 5,797/66
Int. Cl. B60n *1/02*; A47c *3/00*
U.S. Cl. 296—65 4 Claims



This invention relates to a resilient chair support, especially for seats in vehicles, comprising a base plate secured to the body of the vehicle and a substantially vertically movable upper part which serves as the bottom of the seat and near its front end carries an upper pivot of a rod system which extends below said bottom and the lower pivot of which is located in or near the plane of said lower part, the rear end of said bottom being movable along guides extending upwardly from the lower part.

The object of the invention is to provide a very low chair or seat having effective resiliency and low friction.

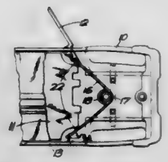
In accordance with the invention this object is attained due to the fact that the lower pivot of the rod system is located at the intersection of the plane of the base plate with the plane of the guides and that a helical spring acting on a point on the bottom of the seat has its line of action directed such as to cause as low stresses as possible on the various bearing means of the chair.

3,446,528
MOTOR VEHICLE TOP CONSTRUCTION
Bela Barenyi, Stuttgart-Valhingen, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart, Germany
Continuation of application Ser. No. 458,615, May 25, 1965. This application Nov. 30, 1967, Ser. No. 687,913
Claims priority, application Germany, May 30, 1964, D 44,571
Int. Cl. B62d *25/06*
U.S. Cl. 296—137 19 Claims



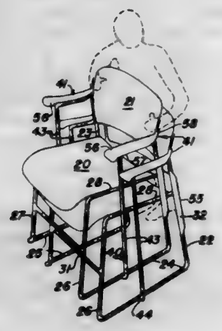
The present disclosure relates in general to motor vehicle body constructions, and more particularly is directed to a convex-shaped motor vehicle roof or top, especially suited for carrying luggage or other items. The roof is concave in its central portion for carrying luggage and convex in its peripheral connection to the remaining portions of the vehicle.

3,446,529
MODEL VEHICLES
Aubrey Robert Mills, London, England, assignor to Die Casting Machine Tools Limited, London, England, a British company
Filed Jan. 20, 1967, Ser. No. 610,558
Int. Cl. B60j *5/04*; E05f *1/10*; F16f *1/06*
U.S. Cl. 296—146 9 Claims



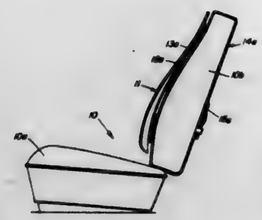
A model vehicle having an openable door, the door having at its inner side edge an extension which in the closed position of the door extends behind the adjacent margin of the vehicle's body, the extension having on its inside surface a ridge parallel to the axis or axes about which the door opens, one half of a V-shaped spring, mounted in the vehicle, being disposed to engage the ridge to resist movement of the door, the ridge being forward of the axis or axes when the door is closed and rearward thereof when the door is fully open.

3,446,530
NESTED ARMCHAIR
David L. Rowland, 49 W. 55th St., New York, N.Y. 10019
Filed Oct. 16, 1967, Ser. No. 675,484
Int. Cl. A47c *3/04, 7/54*
U.S. Cl. 297—239 13 Claims



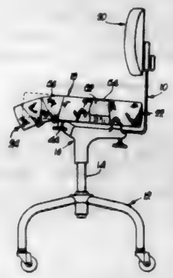
A compactly stacking armchair is provided of the type having a frame that has at each side of the chair a rear leg portion, a bottom rail portion, a front leg portion and a side rail portion above and inset from the bottom rail portion, the frame having at least one cross member extending across from one side to the other, and a seat and back bridging from one side to the other. The armchair is characterized by a metal arm frame on each side of the chair having a generally horizontal upper portion above and generally parallel to the side rail and outset therefrom beyond the bottom rail, extending and outset from and secured to the rear leg portion. A generally vertical portion extends from the forward end of the horizontal upper portion to ground level, a short bottom horizontal portion connects the vertical portion to the bottom rail portion, and an arm rest is supported by the generally horizontal portion of the arm frame.

3,446,531
BACK SUPPORT
Edward Froelich, 5408 Eastview Park, Chicago, Ill. 60615
Continuation-in-part of application Ser. No. 640,226, May 22, 1967. This application Sept. 14, 1967, Ser. No. 674,374
Int. Cl. A47c *25/00, 25/02*
U.S. Cl. 297—284 3 Claims



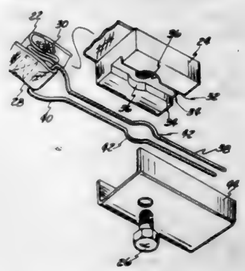
A support for the back of the occupant of a chair, automobile seat, or the like, comprising a rigid contoured orthopedic back support element and fabric hook-and-pile means for securing the orthopedic back support element to the back of the seat.

3,446,532
CHAIR
Harold W. Cramer, 8419 Linden, Prairie Village, Kans. 66208
Filed Mar. 13, 1967, Ser. No. 622,785
Int. Cl. A47c *1/02*
U.S. Cl. 297—312 7 Claims



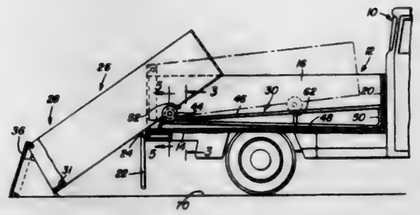
A chair seat for office chairs which are adjustable in height, the seat having a rear portion and a front portion, the two portions being hingedly interconnected to permit swinging of the front portion from an initial position where the front portion and rear portion are in a common, substantially horizontal plane to a second position where the front portion extends angularly downwardly from the rear portion; there being means for adjusting the extent of swinging movement of the front portion into its downwardly extending position, such adjusting means taking several forms, such as a slide block having an operating member to secure the same in a selected position; a turnbuckle interconnecting the front portion of the chair seat with the standard of the chair; a linkage of fixed length to swing the front portion downwardly when the rear portion is tilted rearwardly; and adjusting means in the form of a screw interconnecting the front portion and the rear portion.

3,446,533
WIRE-PULLING MEANS FOR ABSORBING THE KINETIC ENERGY OF A MOVING BODY
Donald G. Radke, Troy, and Frederick C. Booth, Birmingham, Mich., assignors to Jim Robbins Seat Belt Co., Royal Oak, Mich.
Filed July 13, 1967, Ser. No. 653,176
Int. Cl. B60r *21/00*; A47c *31/00*
U.S. Cl. 297—386 8 Claims



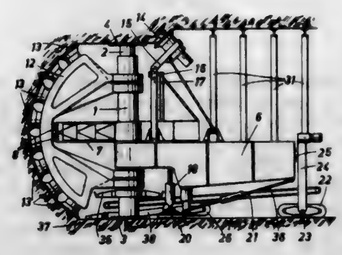
A vehicle safety seat belt having one end adapted to apply restraining forces to a seated occupant and the other end anchored to the vehicle has an intermediate section connected to the vehicle by a stiff wire element. The intermediate connection normally forms the belt into a taut, restraining section and a slack, non-restraining section. The wire element is bent around a pin attached to the vehicle and normally provides a force transmitting connection between the taut section of the belt and the vehicle. The build up of restraining forces caused by the occupant being shifted from his seated position by abnormal forces pulls the wire around the pin so that the taut section of the belt moves with the occupant until the slack section has been fully extended with the flexing wire absorbing the kinetic energy of the moving occupant.

3,446,534
AUXILIARY SELF-DUMPING TRUCK BED
Garvis King, P.O. Box 548, Spiro, Okla. 74959
Filed Jan. 13, 1967, Ser. No. 609,070
Int. Cl. B60p *1/30*
U.S. Cl. 298—12 7 Claims



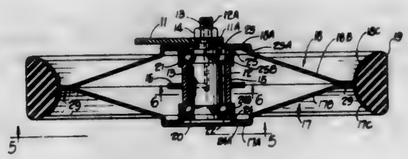
A self-dumping truck bed construction for removable support from a vehicle and including inclined guide means from which a load bed is supported by follower means engaged with the guide means and pivotally supported from the load bed, said follower means being positioned so that the load bed, when having a load disposed therein, will be overbalanced at the end thereof adjacent the lower end of the guide means thereby causing the load bed to tilt as the overbalanced portion thereof passes beyond the lower end of the guide means upon downward movement of the load bed along the guide means.

3,446,535
TUNNEL DRIVING MACHINE
Ernst Lauber, Thun, Switzerland, assignor to Maschinenfabrik Habegger AG, Thun, Switzerland
Filed Mar. 6, 1967, Ser. No. 621,039
Claims priority, application Germany, Mar. 19, 1966, M 68,834
Int. Cl. E21d *9/00*; E01f *3/04*
U.S. Cl. 299—31 17 Claims



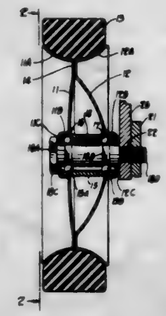
A machine body is supported by a running gear and provided with propulsion means for feeding the body forwardly. A main column extends transversely to the axis of the tunnel and is firmly connected to the forward end portion of the machine body. The main column is adapted to be independently restrained in the tunnel. At least one segment member is pivoted to the main column on an axis which is transverse to the tunnel axis and has an arcuate peripheral face conforming to a part of the profile of the tunnel. A plurality of inserted-tooth cutter heads adapted to cut at their periphery are mounted on said arcuate peripheral face.

3,446,536
WHEEL STRUCTURES
Walter S. Sutowski, 6976 Crestview Drive, Brecksville, Ohio 44141
Filed Feb. 27, 1967, Ser. No. 618,803
Int. Cl. B60b *37/00, 1/06*; F16c *33/00*
U.S. Cl. 301—1 9 Claims



Vehicle wheel structures having axially spaced sets of ball bearings in raceways carried by a shaft and outer race member concentric therewith, disk members together forming the hub, web and rim of the wheel, the hub accommodating the shaft, outer race member, ball bearings, and reinforcing means, wherein the disk members, race member and reinforcing means revolve as a unit about the axle on the ball bearings, the hub closing the open spaces at opposite ends of the race member otherwise exposing the balls and in some embodiments covering an end of the shaft as well.

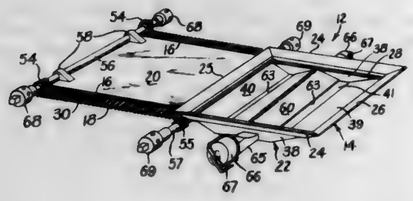
3,446,537
WHEEL
Walter S. Sutowski, 6976 Crestview Drive, Brecksville, Ohio 44141
Continuation-in-part of application Ser. No. 618,803, Feb. 27, 1967. This application Feb. 14, 1968, Ser. No. 705,386
Int. Cl. B60b *37/00, 1/06*; F16c *33/00*
U.S. Cl. 301—1 8 Claims



A wheel for a vehicle, the wheel having two disk members secured together in axial alignment, the disk members being spaced apart axially at the hub to accommodate a bearing assembly thereon, the bearing assembly including a split cylindrical metal outer race member embraced at opposite axial ends by inner edge portions of the disk members formed to tightly embraced the axial ends of the outer race member to receive axial thrust and to tightly embrace the outer cylindrical wall of the outer race member adjacent said opposite ends to close the split in the outer race member and to receive radial thrust, the inner wall of the outer race member having two axially spaced grooves therein providing the outer

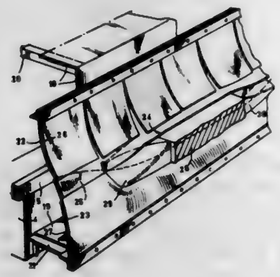
raceways for two sets, respectively, of ball bearings, a bolt having on the outer wall thereof two axially spaced grooves therein providing the inner raceways for said two sets of ball bearings, respectively, the inner end of the bolt being threaded to be threadably engaged in the threaded opening of a hanger or bracket, the outer end of the bolt extending through an opening in the adjacent disk member and having a non-circular wrench-engaging head exposed there for conveniently rotating the bolt on its axis to threadably engage and disengage the threaded inner end of the bolt from the hanger or bracket.

3,446,538
HOPPER DISCHARGE ARRANGEMENT
Worrell M. Danielson, Evergreen Park, Ill., assignor to Enterprise Railway Equipment Company, Chicago, Ill., a corporation of Illinois
Filed May 25, 1966, Ser. No. 552,828
Int. Cl. B65g *53/50, 3/10*
U.S. Cl. 302—52 10 Claims



A combination pneumatic and gravity hopper discharge arrangement having a vacuum chamber and a slide gate both slidably mounted on the hopper frame with the gate disposed above the vacuum chamber and independent means for selectively moving the gate and vacuum chamber to permit either pneumatic or gravity discharge of the lading in the hopper.

3,446,539
GUIDE RAIL PROTECTIVE DEVICE
Franco Sartorio, Turin, Italy, assignor to D.E.A. Digital Electronic Automation Societa per Azioni, Turin, Italy
Filed Apr. 3, 1967, Ser. No. 627,920
Claims priority, application Italy, Apr. 8, 1966, 8,517/66
Int. Cl. F16c *17/00, 21/00, 29/00*
U.S. Cl. 308—3.5 2 Claims



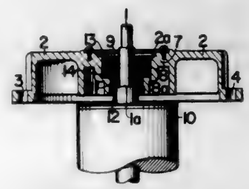
The invention relates to precision apparatus wherein there are incorporated precision guide rails, which rails must be kept free from dust. In accordance with the invention, there is provided a particular form of tubular sheath within which the rail is housed and through resilient wall parts of which a movable part may extend to communicate with a further part guided by the said rail. The invention also specifies the specific construction of particularly advantageous resilient sheath parts and the specific construction of particularly advantageous parts which are well suited to moving therethrough in accordance with the stated object of the invention.

3,446,540
ANTI-FRICTION BEARINGS
Ted Geffner, 48 Park Ave. E., Merrick, N.Y. 11566
Filed Oct. 12, 1966, Ser. No. 586,151
Int. Cl. F16c *19/18, 31/06, 33/44*
U.S. Cl. 308—6 14 Claims



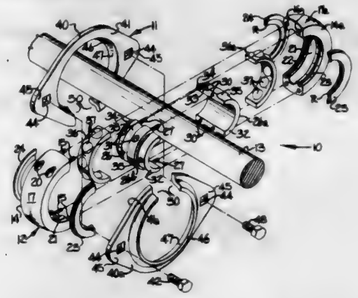
Anti-friction bearings for transmitting forces between work members in which the bearing elements move in paths between active and inactive load bearing positions and a load supporting member is in load supporting engagement with the bearing elements in their active load bearing position.

3,446,541
SMALL ELECTRIC MOTOR
Kunio Nakano, % Akai Electric Co., Ltd., 14, 2-chome-12, Higashi-Kohjiya, Ohta-ku, Tokyo, Japan
Filed Oct. 28, 1965, Ser. No. 513,620
Claims priority, application Japan, Oct. 30, 1964, 39/61,450; Apr. 10, 1965, 40/20,967
Int. Cl. F16c *9/00, 13/02, 35/02*
U.S. Cl. 308—22 5 Claims



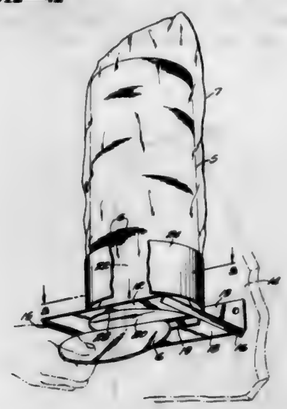
1. A bearing assembly for a constant speed electric motor of the type including a rotor mounted on a shaft, a stator inclosed in a generally cylindrical housing, and at least one lightweight metal end cover adapted to be attached to the housing, an inwardly directed boss on said end cover, said boss having a bore concentric to said rotor shaft presenting a radially inward facing cylindrical surface and positioned for said rotor shaft to extend therethrough, an anti-friction bearing metal piece provided with a cylindrical surface concentric to but spaced from the inward facing cylindrical surface of said bore of said boss positioned within said bore to receive and support said rotor shaft for rotation, a steel tungsten carbide ring press fitted between the cylindrical surfaces of said bore of said boss and said bearing metal piece, whereby compression stresses caused by thermal shrinkage of said lightweight metal end cover at low temperatures are substantially resisted by said steel ring.

3,446,542
SPLIT SELF-ALIGNING BEARING ASSEMBLY
Joe Rufus Whitehurst, Bessemer City, N.C., assignor, by mesne assignments, to The Warner & Swasey Company, Cleveland, Ohio, a corporation of Ohio
Continuation-in-part of application Ser. No. 529,064, Feb. 21, 1966. This application Mar. 22, 1967, Ser. No. 625,219
Int. Cl. F16c *1/24, 33/78, 13/00*
U.S. Cl. 308—187.2 5 Claims



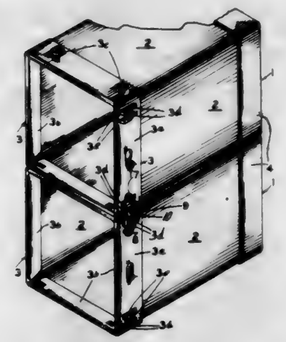
A self-aligning antifriction bearing assembly including a radially split antifriction bearing with the split segments thereof releasably abutted and with the outer race thereof being convexly spherically curved. The bearing is supported by a split bearing mount having its split components releasably joined together about the bearing and having a concave bearing-receiving seat curved to mate with the curvature of the bearing outer race and slidably engaging therewith to permit relative movement between the bearing and the bearing mount.

3,446,543
METHOD OF DISPENSING MILK FILTER DISKS AND APPARATUS THEREFOR
Robert J. Matthews, 5155 14th St. SW., Canton, Ohio 44710
Filed May 2, 1966, Ser. No. 546,696
Int. Cl. B65g *1/08;* A47f *1/08*
U.S. Cl. 312—42 10 Claims



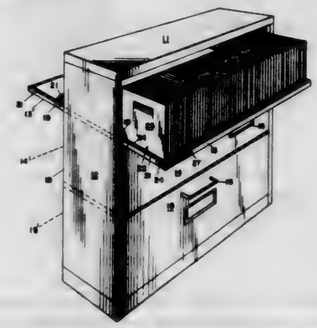
A dust-and-moisture-tight dispenser for milk filter disks is provided. The disks, as received, are stacked in a container, usually flexible. The dispenser is provided with a horizontal support with an opening in it which is as wide as the diameter of a disk. A flange surrounds the opening. The package is opened, inverted over the opening, with the flange inside of the package, around the disks. The bottom disk is exposed through the hole and a depression at the edge of the opening is provided to accommodate the thumb or finger of a person who desires to manually remove the bottom disk. The disks are removed flat, without distortion. Apparatus and process claims are provided.

3,446,544
STORAGE DEVICE
Arthur Serwer, Forest Hills, N.Y., assignor to Cole Steel Equipment Co., Inc., New York, N.Y., a corporation of New York
Filed Mar. 1, 1966, Ser. No. 530,830
Int. Cl. F16b *12/36, 3/00*
U.S. Cl. 312—111 6 Claims



A plurality of individual storage units, each having at least one metal band disposed thereabout, are interconnected into a storage device through the intermediary of a plurality of identically formed clips adapted for disposition in straps formed from the material of the band proximate the corners thereof. Each clip includes a pair of flat arms extending in opposite directions and in the same plane from a central portion from which there also extends a pair of wings, one on each side of said central portion; said wings both lie in a plane which is spaced from and parallel to the plane of the arms. The wings each have formed therein a slot to enable the wings of one clip to be interconnected with the wings of another clip when the two are positionally reversed. The central section of each clip has formed therein a protuberance with the protuberances of the interlocked clips coacting one with the other to facilitate the interlocking operation.

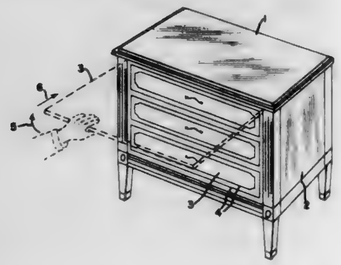
3,446,545
SIDE OPENING FILING CABINET
Joseph D. Horlacher, 2 Canterbury Road W.E., Jamestown, N.Y. 14701
Filed Apr. 3, 1967, Ser. No. 627,975
Int. Cl. A47b *63/00;* B42f *17/08*
U.S. Cl. 312—311 5 Claims



In the file disclosed herein the drawers are shelves that pull out from the side rather than from the front as in a

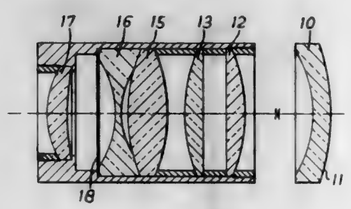
regular upright filing cabinet. This has the advantage of providing more aisle space in offices by placing the file in lateral position and gain more capacity since the drawers can be placed on a greater number of levels in the same manner as open shelving, thereby giving standup access to a greater number of levels. Regular upright files, on the other hand, are limited to a stack five drawers high for stand-up access. With a greater number of drawers it is necessary to use a stepladder since access is from the top of the drawer.

3,446,546
CABINET FOR A TELEVISION RECEIVER
Joseph B. D'Adamo, Fayetteville, N.Y., assignor to General Electric Company, a corporation of New York
Filed Dec. 2, 1964, Ser. No. 415,299
Int. Cl. H05k 5/00; A47b 47/00, 57/00
U.S. Cl. 312—323 4 Claims



A television receiver cabinet is provided including a completely retractable one-piece front panel having furniture representing indicia formed on the outer surface thereof. The true function of the receiver is completely disguised by the simulation of any desired furniture design. Through the use of suitable track means the panel is stowed in a position underlying the top of the cabinet, the panel extending through a suitable aperture in the rear of the cabinet.

3,446,547
PROJECTION OBJECTIVE FOR MICROFILM ENLARGERS
John H. Jeffree, London, England, assignor to Caps (Research) Limited, London, England
Filed Sept. 9, 1965, Ser. No. 486,007
Claims priority, application Great Britain, Sept. 25, 1964, 39,294/64
Int. Cl. G02b 9/62
U.S. Cl. 350—215 4 Claims



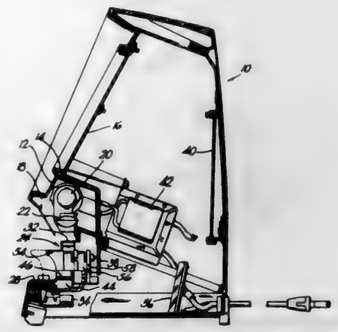
An imaging lens system having a focal length of substantially 7.6 centimeters and a flat anastigmatic field of view of an angle greater than 40 degrees includes along the same optical axis a pair of planoconvex lenses spaced from each other with their plane surfaces facing each other followed by a doublet comprising firstly a biconvex lens and secondly a biconcave lens in contact with each other adjoining their peripheral edges but with an air space between them at the center, followed by a concave-convex lens with the concave surface facing the doublet.

3,446,548
SUPPLEMENTAL LENS ATTACHMENT FOR SPECTACLES
William David Rummel and John L. Good, both of 1003 Division St., Prescott, Ariz. 86301
Filed Mar. 26, 1965, Ser. No. 442,875
Int. Cl. G02c 7/08, 7/10; A61f 9/02
U.S. Cl. 351—58 3 Claims



A holder for holding supplemental lenses in vertically adjustable positions in front of the lenses of a pair of spectacles includes an elongated top clip having a pair of spaced resilient grippers at each end, an elongated control arm fixed to the top clip in a generally parallel position having each of its ends bent over the clip and downwardly to grip the inner surface of a pair of spectacles, a U-shaped holder having its legs fixed between the top clip and the control arm, whereby engagement of the grippers with the spectacle lenses pulls the clip and control arm into tighter engagement with the legs of the U-shaped holder and supplemental lenses fixed on each leg of the holder.

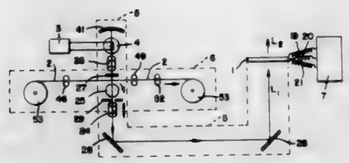
3,446,549
DUAL FORMAT VIEWER
David W. Husted, Ann Arbor, Mich., assignor to Bain Corporation, Jackson, Mich., a corporation of Michigan
Filed Jan. 30, 1967, Ser. No. 612,710
Int. Cl. G03b 21/02, 21/12
U.S. Cl. 352—104 7 Claims



A viewer for motion picture film of the dual-format type wherein the viewer is capable of selectively accommodating different types or sizes of film, the selective accommodating means comprising a movably mounted carrier having first and second film tracks with associated apertures and shutters, the carrier being selectively

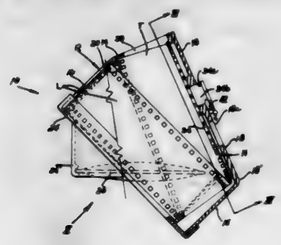
positionable to place one of the film tracks and associated optical elements in alignment with the projection light beam.

3,446,550
FILM EDITING APPARATUS WITH REVERSIBLE IMAGE INTENSIFIER
Nobumasa Ohoshima, Hirakata-shi, Osaka-fu, and Eiichi Sugi, Moriguchi-shi, Osaka-fu, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Osaka, Japan
Filed Nov. 7, 1966, Ser. No. 592,470
Claims priority, application Japan, Nov. 5, 1965, 40/68,658; Dec. 29, 1965, 41/210; Jan. 27, 1966, 41/5,074; Aug. 2, 1966, 41/51,454
Int. Cl. G03b 41/02, 21/00
U.S. Cl. 352—105 13 Claims



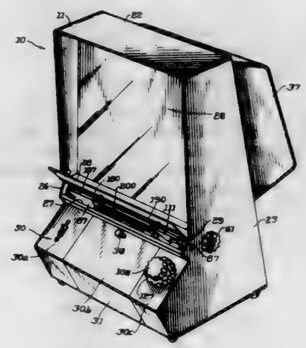
A film editing apparatus capable of directly intensifying an image or transmitting a negative of an image and intensifying the image, the apparatus comprising an image converting panel consisting of a glass plate, a first transparent electrode on the glass plate, an electroluminescent layer having an electroluminescent material on the first transparent electrode, a reflective layer on the electroluminescent layer, an opaque layer on the reflective layer, a photoconductive layer containing photoconductive material having a response time lower than 50 msec. on the opaque layer, a parallel grid electrode embedded in the photoconductive layer, a transparent dielectric layer having a transparent film therein on the photoconductive layer, second transparent electrode on the dielectric layer, and a second glass plate on the second transparent electrode. Associated with the panel are optical devices for shining an image from a film onto the panel, driving mechansim for moving the film through the apparatus and rewinding it, a power supply for the panel, and associated controls for the various elements.

3,446,551
CONTINUOUS FILMSTRIP APPARATUS
Stephen A. Platt, 1100 Fulton St., Grand Haven, Mich. 49417
Filed Mar. 10, 1966, Ser. No. 533,303
Int. Cl. G03b 21/06
U.S. Cl. 353—21 8 Claims



A freestanding filmstrip cartridge assembly allowing unhindered advancement by having two tracks, each circular in configuration, at an acute angle to each other, one containing a multiple turn circular filmstrip loop and the other a diverging but still circular single filmstrip loop, both tracks having free space radially inwardly of the loops to cause both loops to retain freestanding circular condition. An optical viewing device straddles the single turn loop, with one element thereof projecting into the free space within the loops.

3,446,552
MICROFICHE READER
Maynard C. Gross, Chicago, Adolph J. Gawin, Skokie, and Louis A. Smitzer, Chicago, Ill., assignors to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed May 10, 1966, Ser. No. 549,063
Int. Cl. G03b 23/08
U.S. Cl. 353—27 8 Claims

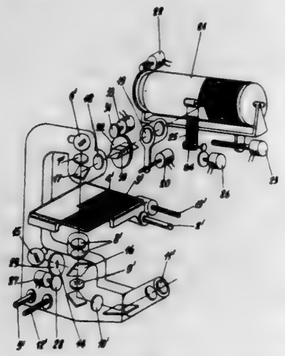


Apparatus for viewing flat microfiche comprising a microfiche holder frame which is adjustable for scanning movement in a horizontal and vertical direction. The holder frame is movable into an access opening at the upper limit of the vertical scan movement. When the holder frame is moved in to the access opening, it automatically opens a pivoted door normally closing the access opening. The movement of the door serves to actuate a camming device for automatically camming a pair of glass plates apart, thus facilitating insertion and removal of a microfiche from between the glass plates.

3,446,553
DEVICE TO BE APPLIED TO ANALYTIC RESTITUTERS FOR OBTAINING ORTHOPHOTOPLANES
Lino Somazzi, Albonago di Viganello, Switzerland, assignor to Kassel Anstalt, Vaduz, Liechtenstein
Filed Oct. 29, 1965, Ser. No. 505,622
Claims priority, application Switzerland, June 11, 1965, 8,362/65
Int. Cl. G03b 27/68
U.S. Cl. 355—47 5 Claims

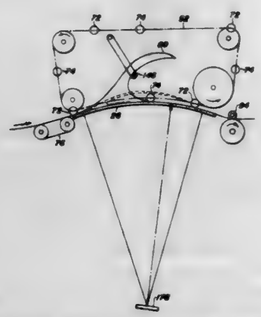
Apparatus for obtaining a cylindrical projection of stereo pairs of photographs in conical projection in aerial photography comprises an analytic restituter consisting of a stereo comparator with two plates for photographs, each of which plates is movable along two cartesian coordinates by means of precision screws controlled by a previously programmed computer. A slot scans one of the two photographs of the restituter and projects the scanned image on a sensitive surface through an optical enlargement system. This system comprises means for automatically varying the enlargement ratio between the size

of the slot on the photographic plate and the size of its image on the sensitive surface as a function of elevation of



the ground contour scanned, thereby to convert the conical projection into a cylindrical projection.

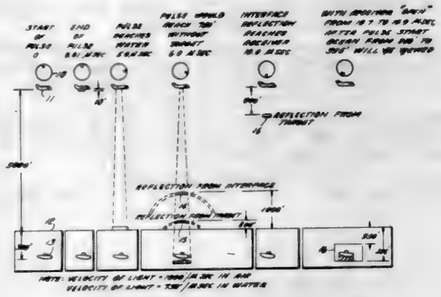
3,446,554
XEROGRAPHIC REPRODUCING APPARATUS
Allen M. Hitchcock, Palmyra, and Robert W. Thompson, Penfield, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Jan. 3, 1967, Ser. No. 607,004
Int. Cl. G03b *27/62*
U.S. Cl. 355—75 11 Claims



A computer forms advancing method and apparatus which is operable with a reproducing machine of the scanning type. A series of rollers move continuously over the scanning surface. The computer forms are formed into a loop between the rollers and the rollers advance the loop over the scanning surface while holding the portion of the forms behind the loop stationary with respect to the scanning surface. The stationary portion of the computer forms is scanned by the reproducing machine.

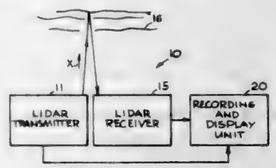
3,446,555
OPTICAL RANGING AND DETECTION SYSTEM FOR SUBMERGED OBJECTS
Elliott H. Kahn, Brooklyn, N.Y., assignor to Kollsman Instrument Corporation, Elmhurst, N.Y., a corporation of New York
Filed Feb. 18, 1964, Ser. No. 345,674
Int. Cl. G01c *3/08*; H01j *39/12*; G06m *5/10*
U.S. Cl. 356—5 8 Claims

A submerged object indication system is carried from an aircraft flying above the water. A laser pulse generator directs a pulse at a small water area which may be 25 feet in diameter, and the receiver receives the air-water interface reflection which gates open a channel for receiving a submerged object reflection. A time delay is connected between an optical shutter and the detection circuit which receives the air-to-water interface reflection with the time delay related to the depth at which an object reflection is observed. The air-to-water interface



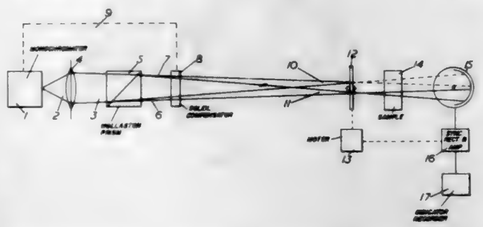
signal can be used to drive an altimeter with signals displayed visually on a cathode-ray tube display. The light source is in the blue-green portion of the spectrum, with the light pulse lengths being about 0.01 microsecond.

3,446,556
METEOROLOGICAL LIDAR SYSTEM WITH AN IMPROVED INFORMATION DISPLAY
Ronald T. H. Collis, 181 N. Castanya Way, Menlo Park, Calif. 94025
Filed Aug. 2, 1965, Ser. No. 476,627
Int. Cl. G01c *3/08*; G01w *1/00*
U.S. Cl. 356—5 3 Claims



A laser radar system is disclosed in which echoes of reflected energy are received from different ranges in a direction in which an energy pulse was transmitted. The received echoes or signals are combined with range-representing signals to provide a display of R versus log AR^2, where R represents range and A a signal received from range R.

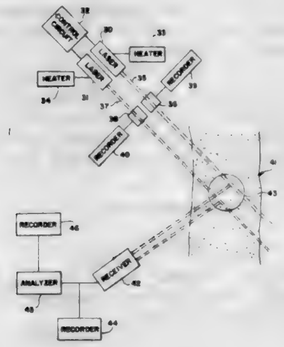
3,446,557
MEASUREMENT OF CIRCULAR DICHROISM
Kenneth R. Wilkinson, Cambridge, England, assignor to Pye Limited, Cambridge, England
Filed Apr. 20, 1966, Ser. No. 544,019
Claims priority, application Great Britain, Apr. 21, 1965, 16,894/65
Int. Cl. G01j *3/42*
U.S. Cl. 356—95 9 Claims



To measure the circular dichroism of a sample, a non-polarised light beam is polarised into two orthogonally

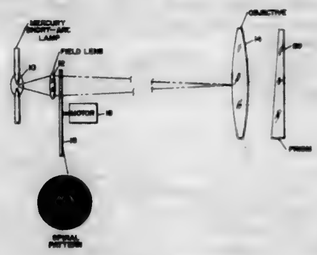
plane polarised beams which are converted respectively into beams circularly polarised in opposite rotational senses; these circularly polarised beams are passed alternately through a sample of the material and the intensities of the two emergent beams are compared.

3,446,558
METHOD FOR MEASURING THE CHARACTERISTICS OF A GAS
Stuart L. Seaton, Hampton, Va., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Dec. 8, 1965, Ser. No. 512,562
Int. Cl. G01n *21/26*
U.S. Cl. 356—104 1 Claim



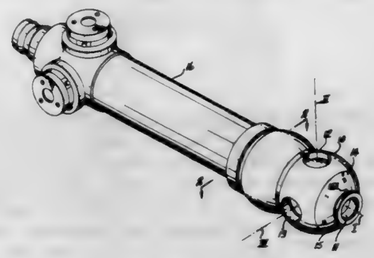
A device to aid in simultaneously determining the density, velocity and temperature of a streaming gas. The beams of first and second lasers, having different frequencies, are directed into a small region of the streaming gas. A receiver is aimed at the small region of the gas for receiving the difference frequency scattered by the particles in the gas and producing an electrical signal therefrom. Means are connected to the output of the receiver for recording the magnitude, frequency and spectral distribution of the electrical signal. From these recordings, the recordings of the magnitudes of the beams of the first and second lasers, and the calibrations of the first and second lasers, the density, velocity and temperature of the streaming gas can be determined.

3,446,559
INSTRUMENT TO CORRECT SURVEY ERRORS CAUSED BY ATMOSPHERIC REFRACTION
Robert W. Astheimer, Westport, and Thomas F. McHenry, Norwalk, Conn., assignors to Barnes Engineering Company, Stamford, Conn., a corporation of Delaware
Filed Feb. 9, 1966, Ser. No. 526,201
Int. Cl. G01n *21/46*
U.S. Cl. 356—128 6 Claims



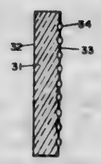
A long-range surveying instrument to correct errors caused by atmospheric refraction comprising a transmitter which projects a moving pattern of bars in two spectral regions having a particular phase relationship. A remote receiver compares the phases of the two spectral regions and provides an output signal to a meter indicative of any refractive error caused by the atmosphere.

3,446,560
THREE DIRECTIONAL OPTICAL ALIGNMENT INSTRUMENT
Robert E. Brasier, Seattle, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Mar. 8, 1965, Ser. No. 437,705
Int. Cl. G01c *1/00, 15/00*
U.S. Cl. 356—146 17 Claims



A three directional optical alignment instrument is disclosed which includes optical means capable of receiving light along any of three separate light paths without changing its position, and directing the light thus received along a common light path, with light control means such as shutters for obstructing the reception of light along any of the three paths. The three separate light paths intersect at a common point and each pair thereof forms a different plane from each of the other pairs thereof. In preferred forms of the instrument the separate light paths are orthogonal, established by a single optical prism element, and the light control means includes a combination of particular improvements in shutter assemblies.

3,446,561
PASSIVE BRIGHT PATTERN RETICLE
Gordon R. Griffin, Claremont, and Herbert Meyer, Pasadena, Calif., assignors to Electro-Optical Systems, Inc., Pasadena, Calif., a corporation of California
Filed Sept. 29, 1965, Ser. No. 491,161
Int. Cl. G01c *1/00*
U.S. Cl. 356—147 6 Claims

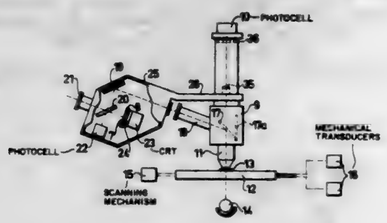


This application relates to a reticle for superimposing a desired pattern onto a viewed image. The reticle comprises a transparent plate having embedded therein, in the desired pattern, a plurality of bodies having flat surfaces coplanar with the light-emitting surface of the reticle and adapted to form an image outside said plate closely adjacent said surface. The reticle is also claimed in combination with a lens system and image intensifier means.

3,446,562
APPARATUS FOR PHOTOMETRIC ANALYSIS

Torbjörn Oskar Caspersson and Gösta Mattias Lomakka, both of Karolinska Institutet, Stockholm 60, Sweden

Filed May 7, 1965, Ser. No. 453,930
Claims priority, application Sweden, May 21, 1964, 6,187/64
Int. Cl. G01j 1/44
U.S. Cl. 356—222 3 Claims
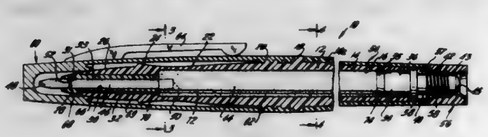


A photometric analysis of an object is carried out by means of a scanning and integrating apparatus which comprises a phototube, a specimen holder, means for producing a relative movement between the phototube and the specimen holder in accordance with the desired scanning course, and an integrator for integrating the electrical output from the phototube. The apparatus contains a cathode ray tube and means for transferring the relative movement between the phototube and the specimen holder to a light spot on the screen of the cathode ray tube. An auxiliary phototube is arranged to receive the light from the light spot. A diaphragm is provided between the screen of the cathode ray tube and the auxiliary phototube which defines the desired measuring field, because light from the light spot can reach the auxiliary phototube only when passing through the opening of the diaphragm. An electronic gate is arranged to be actuated by the auxiliary phototube to cut off the electrical output from the phototube to the integrator when the auxiliary phototube does not receive any light from the screen of the cathode ray tube.

3,446,563
FIBER-TIP WRITING PEN WITH REPLACEABLE CARTRIDGE

Robert J. Burnham, 179—39 Tudor Road, Jamaica Estates, N.Y. 11432

Filed Oct. 21, 1966, Ser. No. 588,575
Int. Cl. B43k 5/00
U.S. Cl. 401—199 7 Claims

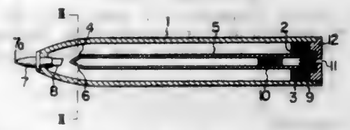


A fiber-tip writing pen with a replaceable cartridge. The cartridge has a planar flange between its ends. The cartridge has a male thread immediately in front of the flange. A male threaded plug extends from the rear of the cartridge. A barrel ensheaths the cartridge from the flange rearwardly and is held in place by a tapped ferrule which engages the thread on the plug and presses the barrel against one longitudinally facing surface of the flange. A cap is adapted to be screwed on to the cartridge thread and covers the front of the cartridge. The diameters of the cap, the flange, the barrel and the ferrule present a substantially unbroken surface from front to back of the pen when the cap is in place.

3,446,564
BALLPOINT PEN FOR WATER-SOLUBLE INK

Yukio Horie, Musashino-shi, Tokyo-to, Japan, assignor to Dainihon Bungu Kabushiki Kaisha, Tokyo-to, Japan, a joint-stock company of Japan

Filed Sept. 18, 1967, Ser. No. 668,443
Claims priority, application Japan, Mar. 31, 1967, 42/19,881
Int. Cl. B43k 7/02
U.S. Cl. 401—209 2 Claims

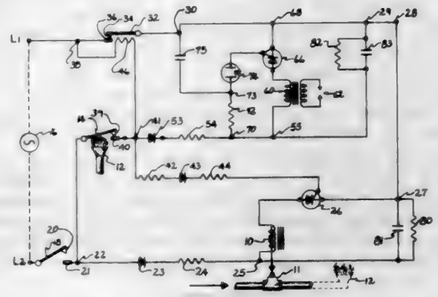


A pen outer barrel is filled directly with water-soluble ink, which is fed to the ball of a ballpoint and is air vented and pressure relieved by a device including an inner cylinder with a small vent hole, a gas-permeable structure, an ink absorber, and a cap plug having an air vent hole and capping the rear end of the barrel. The gas-permeable structure and absorber permit passage of air but respectively resist ink flow and absorb ink to prevent ink leakage out of the barrel.

3,446,565
IGNITION SYSTEM

Melvin E. Hantack, Moline Acres, Mo., assignor to McQuay-Norris Manufacturing Company, St. Louis, Mo., a corporation of Delaware

Filed June 27, 1966, Ser. No. 560,607
Int. Cl. F23n 5/00
U.S. Cl. 431—70 10 Claims



An electrical system for the ignition of fuel wherein a spark discharge ignition device is deenergized upon ignition of fuel and wherein there is also a decrease in consumption of power from the electrical source upon such ignition.

3,446,566
COMPACT HIGH CAPACITY GAS BURNER

Avy L. Miller, North Hollywood, Calif., assignor to Teledyne, Inc., Hawthorne, Calif., a corporation of Delaware

Filed May 1, 1967, Ser. No. 635,133
Int. Cl. F23d 13/36; B05b 1/20
U.S. Cl. 431—349 6 Claims



A narrow, elongated, sheet metal gas burner of rectangular cross section with the major axis vertical and

burner orifices spaced along its horizontal top surface, the burner orifices being each formed from H configuration slits with the legs of the H extending longitudinally of the burner, and with the tabs interiorly of the legs of the slit bent upwardly at acute angles to define the major fuel flow orifice therebetween. The restricted corners where the tabs join the top wall of the burner lower the velocity of the fuel flowing therethrough to maintain the burner flame under conditions of high velocity flow through the main orifice opening.

CHEMICAL

3,446,567
HUMAN OR ANIMAL HAIR COLOURANTS COMPRISING NITROBENZENE DYES

Horst Augustin, Mannheim, Neu-Ostheim, and Ralph Heringlake, Hamburg, Germany, assignors to Lever Brothers Company, New York, N.Y., a corporation of Maine.

No Drawing. Filed Apr. 13, 1965, Ser. No. 447,866
Claims priority, application Germany, Apr. 14, 1964, U 10,657
Int. Cl. D06p 3/04; A61k 7/12
U.S. Cl. 8—10 4 Claims

This disclosure is concerned with certain bis(beta-hydroxyalkyl)-amino-2-amino-4-nitro-benzene compounds which are yellow-orange dyestuffs. This disclosure is also concerned with hair colourants containing these yellow-orange dyestuffs and certain blue-violet dyestuffs for dyeing previously treated hair to an even shade, i.e., a uniform color.

3,446,568
NITROANILINE DYES FOR DYEING HUMAN HAIR AND ANIMAL FIBERS

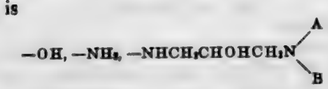
Harris Holtzman, Staten Island, N.Y., and Milton H. Schwarz, Westport, Conn., assignors to Revlon, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed May 11, 1965, Ser. No. 454,999
Int. Cl. D06p 3/02, 5/00; A61k 7/12
U.S. Cl. 8—10 9 Claims

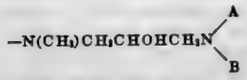
Dyestuffs of the formula



where X is



or



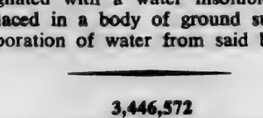
Y is chloro or lower alkoxy, A and B taken separately are hydrogen, lower alkyl, hydroxy lower alkyl, lower alkyloxy lower alkyl, or phenyl and one of A or B is other than hydrogen, and A and B together with the nitrogen atom to which they are attached may be morpholino, *m* is 0 or 1, and *n* is 1 or 2. Method of dyeing animal fibers or human hair with these dyestuffs.

3,446,569
AQUEOUS SOLUTIONS OF PHTHALOCYANINE PIGMENTS AND PROCESS FOR PREPARING THEM

Oskar Braun, Frankfurt am Main, Richard Gross, Offenbach (Main), and Herbert Nakaten, Bad Soden, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed May 5, 1964, Ser. No. 365,156
Claims priority, application Germany, May 11, 1963, F 39,722
Int. Cl. D06p 1/68
U.S. Cl. 8—84 8 Claims

A stable, aqueous alkaline solution containing a water-insoluble phthalocyanine pigment, such as a copper phthalocyanine-trisulfonic acid anilide ($CuPc(SO_2NHPh)_3$), a quaternary cationic surface-active compound such as



in which the sum of *m* and *n* is 9 and, optionally, a strong base such as sodium hydroxide and/or a water soluble organic solvent, such as alkanols, glycols, dimethyl formamide, phosphoric acid tris-dimethylamide, acetone or dimethyl sulfoxide. This is useful for dyeing and printing textile material by contact therewith, followed by treatment with an aqueous acid bath.

3,446,570
NOVEL FLUOROCARBON DERIVATIVES

Richard F. Sweeney, Dover, and Koei-Liang Liauw, Morristown, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Aug. 25, 1965, Ser. No. 482,597
Int. Cl. D06m 13/08
U.S. Cl. 8—116.2 9 Claims

This invention is directed to a new class of fluorocarbon derivatives and to their application to textile materials to produce oil- and water-repellent products. More particularly, this invention relates to reaction products of perfluoroalkyl polyamide compounds with vinyl sulfone compounds, to treatment of textile materials therewith to render the same oleophobic and hydrophobic, and to textile products treated therewith so as to have been rendered oil- and water-repellent.

3,446,571
METHOD OF IMPREGNATING POROUS INERT BODIES, PROLONGING WATER EVAPORATION OF LAND SURFACED WATER BODIES THEREWITH, AND PRODUCTS THEREFOR

Alton V. Oberholtzer, White Bear Lake, Minn. (2044 W. 235th Place, Torrance, Calif. 90501)

No Drawing. Filed Dec. 7, 1964, Ser. No. 416,632
Int. Cl. B27k 3/12, 3/14
U.S. Cl. 21—60.5 9 Claims

A composition comprising a porous inert solids material impregnated with a water insoluble film forming agent is placed in a body of ground surface water to retard evaporation of water from said body.

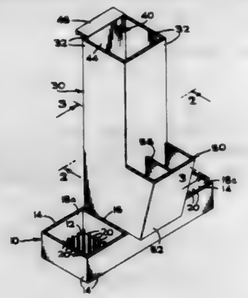
3,446,572
STERILIZER

Augustine A. Souza, 431 Casa Blanca Drive, San Jose, Calif. 95129

Filed Mar. 29, 1965, Ser. No. 443,247
Int. Cl. A61b 3/00
U.S. Cl. 21—83 2 Claims

A sterilizer for barber implements including a shallow receptacle with intermediate partitions forming at least two compartments, a second, relatively deep receptacle

dimensioned for removable reception in one of these compartments together with a ladle including an implement-



supporting platform arranged for removable reception in such deep receptacle.

3,446,573

PROCESS FOR PURIFYING AIR

Edmund Richter, Kassel-Bettenhausen, Germany, assignor to Spinnfaser Aktiengesellschaft, Kassel-Bettenhausen, Germany

No Drawing. Filed Jan. 15, 1965, Ser. No. 425,919
Claims priority, application Germany, Feb. 11, 1964, S 89,460
Int. Cl. B01d *53/34*
U.S. Cl. 23—4 4 Claims

Scrubbing air contaminated wtih H_2S in aqueous, alkaline $Fe(OH)_3$ suspension at a flow speed of at least 30 centimeters per second in a gas scrubber containing an alkaline, aqueous, 2–5% by weight ferric hydroxide suspension having an alkalinity equivalent to more than 0.2% sodium carbonate, with a gas residence time in said scrubber of at least five seconds, the ferric hydroxide being present in said scrubber in an amount sufficient to make available for reaction with the hydrogen sulfide at least 7.5 moles of ferric hydroxide per mol of hydrogen sulfide in said scrubber, thereby forming in said suspension elemental sulfur, and increasing load limit of hydrogen sulfide in air scrubbed by suspension by providing cobalt and/or nickel hydroxide therein.

3,446,574

PREPARATION OF THE RARE EARTH SESQUICARBONATES

Earl L. Head, Los Alamos, N. Mex., assignor to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Mar. 8, 1968, Ser. No. 711,527
Int. Cl. C01f *17/00*
U.S. Cl. 23—20 2 Claims

A method of preparation for the rare earth carbonates in which CO_2 gas is introduced into an aqueous solution of the particular rare earth chloride in the presence of aniline.

3,446,575

PREPARATION OF HETEROPOLYMOLYBDIC ACIDS

Vincent Chiola, Towanda, and Jerome G. Lawrence, Nanticoke, Pa., assignors to Sylvania Electric Products Inc., a corporation of Delaware

No Drawing. Filed Dec. 28, 1966, Ser. No. 605,177
Int. Cl. C22b *59/00*
U.S. Cl. 23—22 16 Claims

A process for producing heteropolymolybdic acids is disclosed wherein a concentrated aqueous reaction mixture of a water soluble molybdate and a heteroatom source is formed wherein there is at least 0.5 gram atom of the heteroatom for each 12 gram atoms of molybdenum in the reaction mixture and the reaction mixture is maintained at a temperature of from about 20° C. to about 100° C. for a period of time to solubilize the components and to initiate the reaction and to thereafter bring the reaction mass into contact with a cation exchange material on the hydrogen cycle and recovering the heteropolymolybdic acid that is formed.

3,446,576

PROCESS FOR PURIFICATION OF YTTERBIUM

Paul A. Rombau, La Rochelle, France, assignor to Produits Chimiques Pechiney-Saint-Gobain, Neuilly-sur-Seine, France

No Drawing. Filed June 12, 1967, Ser. No. 645,495
Claims priority, application France, June 13, 1966, 65,209
Int. Cl. C01g *17/00, 1/00*
U.S. Cl. 23—22 7 Claims

The process of separation of ytterbium from others of the rare earth metals such as thulium and lutecium by reaction of the rare earth metal compounds in a trivalent state with a samarium compound in the bivalent state in an alkaline medium whereby the trivalent ytterbium is reduced to a soluble bivalent compound while others of the rare earth compounds remain insoluble in the alkaline medium and oxidizing the separated solution of the ytterbium compound to reconvert the compound of ytterbium to a trivalent state while the residue containing the insoluble compounds of thulium and lutecium can be separated by conventional techniques.

3,446,577

PROCESS FOR PRODUCING HETEROPOLY METAL ACIDS

Vincent Chiola and Clarence D. Vanderpool, Towanda, Pa., assignors to Sylvania Electric Products Inc., a corporation of Delaware

No Drawing. Filed Dec. 22, 1966, Ser. No. 603,792
Int. Cl. C22b *59/00*
U.S. Cl. 23—23 13 Claims

A process for preparing substantially alkali free heteropoly acids of tungsten and molybdenum wherein the heteroatom is arsenic, boron or phosphorus, is disclosed. The process comprises contacting in an aqueous solution at a temperature of from about 20 degrees to about 100 degrees C. (a) a tungstic or molybdic acid having the solubility characteristics approximating those of metatungstic acid and metamolybdic acids respectively with (b) at least one acid of the group consisting of acids of arsenic, boron and phosphorus. The tungstic or molybdic acid reactants can be prepared separately or are preferably formed in situ from a substantially alkali free hydrolyzable tungsten or molybdenum compound.

3,446,578

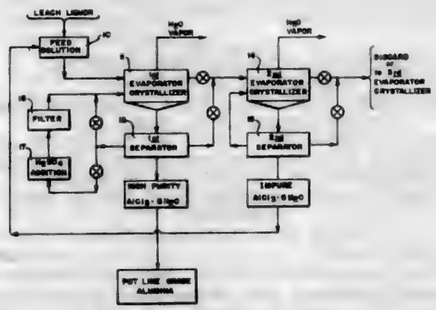
PURIFICATION OF ALUMINUM CHLORIDE

Robert E. Sullivan, Anaconda, Mont., assignor to The Anaconda Company, New York, N.Y., a corporation of Montana

Filed Oct. 26, 1966, Ser. No. 589,542
Int. Cl. C01f *7/62*
U.S. Cl. 23—92 8 Claims

Saturated aqueous solutions of aluminum chloride containing small but significant amounts of dissolved calcium ions (present in the form of calcium chloride) and normally unfilterable particles of titanium dioxide (present as a result of the hydrolysis of titanium tetrachloride) are

purified by the precipitation of said calcium ions with sulfuric acid followed by the concurrent removal of the



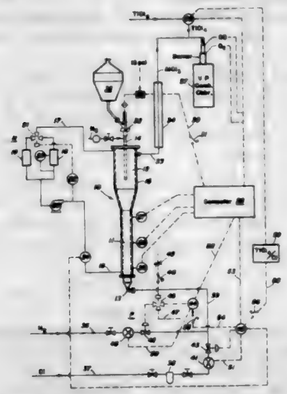
precipitated calcium sulfate with said particles of titanium dioxide by filtration of said solution.

3,446,579

PROCESS FOR CONTINUOUSLY PRODUCING GASEOUS ALUMINUM CHLORIDE

Robert D. Toomey, Little Silver, and George Vassil, Old Bridge, N.J., assignors to National Lead Company, New York, N.Y., a corporation of New Jersey

Filed Dec. 23, 1966, Ser. No. 604,389
Int. Cl. C01f *7/58*; C09c *1/64*
U.S. Cl. 23—93 6 Claims



Disclosed and illustrated below is a generator for producing a gaseous metal halide wherein a pulverulent metal is reacted with a gaseous halide in a fluidized-bed of inert material the feed rate of the pulverulent metal to the generator being regulated through the instrumentality of temperature measuring probes, located at strategic places in the generator bed, and a computer which maintains constant surveillance of the temperature profile in the bed, so that the reaction zone is maintained within the middle and top third of the bed, the halide feed being part of a pipe-line complex including an inert gas which may be used solely or with the halide gas during start-up and shut-down to maintain the bed fluidized.

3,446,580

NON-CAKING SODIUM TRIPOLYPHOSPHATE

Robert J. Fuchs, Clark, N.J., assignor to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Original application June 7, 1965, Ser. No. 462,082, now Patent No. 3,360,469. Divided and this application Nov. 8, 1967, Ser. No. 708,452
Int. Cl. C01b *25/30*
U.S. Cl. 23—106 2 Claims

A compacted sodium tripolyphosphate having a specified density and particle size and having distributed on it 2.5 to 7% of water is provided. The presence of the specified amount of water on this kind of sodium tripolyphosphate renders it capable of dissolving readily in water without caking.

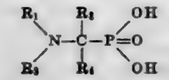
3,446,581

PREPARATION OF AMMONIUM PHOSPHATES WITHOUT UNDESIRABLE NON-SULPHIDE PRECIPITATES

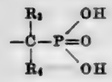
Raymond Anthony Smith, Burton upon Trent, and John Thomas Dixon, Smethwick, England, assignors to Albright & Wilson (Mfg.) Limited, Birmingham, England, a British company

Filed Feb. 20, 1967, Ser. No. 617,383
Claims priority, application Great Britain, Feb. 22, 1966, 7,809/66; Oct. 13, 1966, 45,892/66
Int. Cl. C01b *25/28*
U.S. Cl. 23—107 14 Claims

Storage stable precipitate free solutions of ammonium phosphates to be prepared from wet process acid and ammonia, if the reaction is carried out in the presence of at least sufficient of a sequestering agent comprising a phosphonic acid of the general formula



wherein R_1, R_2, R_3 and R_4 are each hydrogen or alkyl groups and may be the same or different, or R_1 and/or R_2 may be



or alkyl ether groups, or a water soluble salt or acid ester thereof, to prevent the formation of precipitates other than sulphides during the reaction. Crystalline diammonium phosphates may be recovered from these solutions and aqueous solutions subsequently prepared from the crystalline material, which solutions remain stable over prolonged periods and upon the addition of potassium thereto.

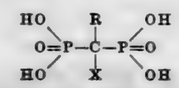
3,446,582

PREPARATION OF AMMONIUM PHOSPHATES WITHOUT UNDESIRABLE NON-SULPHIDE PRECIPITATES

Raymond Anthony Smith, Burton upon Trent, and John Thomas Dixon, Smethwick, England, assignors to Albright & Wilson (Mfg.) Limited, Birmingham, England, a British company

Filed Feb. 20, 1967, Ser. No. 617,413
Claims priority, application Great Britain, Feb. 22, 1966, 7,810/66; Oct. 13, 1966, 45,892/66
Int. Cl. C01b *25/28*; C05b *11/04*
U.S. Cl. 23—107 14 Claims

Storage stable precipitate free solutions of ammonium phosphates to be prepared from wet process acid and ammonia, if the reaction is carried out in the presence of at least sufficient of a sequestering agent comprising a phosphonic acid of the general formula



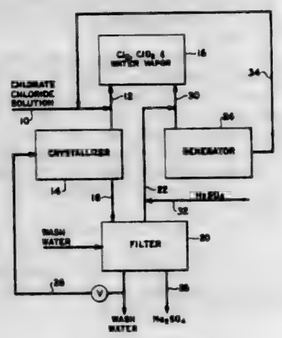
wherein R is an alkyl group containing up to 11 carbon atoms and X is an OH or NH_2 group or a water-soluble salt or acid ester thereof, to prevent the formation of precipitates other than sulphides during the reaction. Crystalline diammonium phosphates may be recovered from these solutions and aqueous solutions subsequently

prepared from the crystalline material, which solutions remain stable over prolonged periods and upon the addition of potassium thereto.

3,446,583
PROCESS OF PREPARING WATER-SOLUBLE PHOSPHATES
Abraham H. de Rooij, Geleen, and Jan Elmendorp, Brunssum, Netherlands, assignors to Stamicarbon N.V., Heerlen, Netherlands
Filed Mar. 18, 1965, Ser. No. 440,789
Claims priority, application Netherlands, Mar 21, 1964, 6403053
Int. Cl. C01b *25/02, 25/32*
U.S. Cl. 23—109 7 Claims

Primary calcium phosphate is produced from phosphate rock by decomposing the phosphate rock with excess nitric acid and subsequently treating the decomposition liquor in the following manner. First, a major portion of calcium nitrate values of the decomposition liquor are removed therefrom by extraction with a polar organic solvent having limited miscibility with water. The resulting aqueous phase containing a major portion of the calcium nitrate values is removed from the system. The resulting organic solvent phase containing nitric acid, phosphoric acid and a minor portion of the calcium nitrate values is washed with an aqueous medium such as water to recover the polar organic solvent which is substantially acid-free. The resulting acid-containing aqueous phase containing nitric acid, phosphoric acid and the minor amount of calcium nitrate values is then treated with a polar organic solvent to remove the nitric acid values therefrom, thereby leaving an aqueous solution containing mainly primary calcium phosphate.

3,446,584
METHOD OF PRODUCTION OF CHLORINE DIOXIDE AND SODIUM SULFATE
Willard A. Fuller, Grand Island, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
Filed Mar. 12, 1965, Ser. No. 439,193
Int. Cl. C01b *11/02*; C01d *5/00*
U.S. Cl. 23—121 10 Claims



There is provided a process for the generation of chlorine dioxide wherein sodium chlorate and a reducing agent are reacted in a generator zone at an acidity of more than 4.3 normal, and the effluent produced therein is passed to a crystallizing zone wherein replenishing amounts of sodium chlorate and reducing agent are added thereto, thereby causing further reaction. The crystallizing zone is maintained under reduced pressure to effect removal of the chlorine dioxide, chlorine, and water produced therein and to thereby cause sodium sulfate to precipitate.

3,446,585
ALUMINUM COMPOUNDS AND THE PREPARATION THEREOF
Hideo Tanabe, Nishinomiya, Japan, assignor to Takeda Chemical Industries, Ltd., Osaka, Japan
Original application Oct. 7, 1963, Ser. No. 314,339, now Patent No. 3,401,223, dated Sept. 10, 1968. Divided and this application Oct. 10, 1967, Ser. No. 698,364
Claims priority, application Japan, Oct. 9, 1962, 37/45,091
Int. Cl. C01f *7/02*; A61k *27/00*
U.S. Cl. 23—143 6 Claims

Aluminum compound wherein aluminum hydroxide is chemically combined with dibasic lower aliphatic carboxylic acid or with the hydroxy carboxylic acid (malic acid, salicylic acid, lactic acid, tartaric acid, citric acid, gluconic acid, ketogluconic acid) in a ratio (from 1/10 to 1/50 mole of the acid per atom of aluminum) sufficient to prevent the aging of the aluminum hydroxide. Such compound is useful as antacid in relieving gastric acidity.

3,446,586
PURIFICATION OF HYDROGEN CHLORIDE
David M. Young, Sarnia, Ontario, Canada, assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Dec. 19, 1966, Ser. No. 602,463
Int. Cl. C01b *7/08*; C07c *17/08*
U.S. Cl. 23—154 7 Claims

Hydrogen chloride contaminated with minor amounts of unsaturated organic impurities such as that derived from the thermal dehydrochlorination of ethylene dichloride is contacted in the vapor phase with anhydrous aluminum chloride at 0–100° C. and under superatmospheric pressure to convert the unsaturated contaminants to the corresponding saturated chlorides. These chlorides can be removed by adsorption on activated carbon or by other suitable means to produce a highly purified hydrogen chloride.

3,446,587
PRODUCTION OF NITRIC OXIDE
Kurt Jockers, Hermann Meier, and Ludwig Taglinger, Ludwigshafen, Rhine, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
Filed Nov. 23, 1966, Ser. No. 596,479
Claims priority, application Germany, Dec. 4, 1965, B 84,839
Int. Cl. C01b *21/24*
U.S. Cl. 23—157 9 Claims

Process for the production of nitric oxide in which liquid or vaporous sulfur is reacted with aqueous nitric acid in a molar ratio of HNO_3:sulfur of at least 4:3 at a temperature of about 350° C. to 650° C.

3,446,588
METHOD FOR PREPARING LITHIUM PEROXIDE
William Novis Smith, Jr., Exton, Pa., assignor to Foote Mineral Company, Exton, Pa., a corporation of Pennsylvania
No Drawing. Filed Mar. 2, 1967, Ser. No. 619,919
Int. Cl. C01d *11/02*
U.S. Cl. 23—184 8 Claims

Lithium hydroxide and hydrogen peroxide are reacted and the reaction mixture is heated during the endothermic reaction stage and filtered at a temperature of at least 70° C. to provide high yields of solid, high purity lithium peroxide.

3,446,589
IRON-BASED CATALYSTS, THEIR PREPARATION AND THEIR USES
Roger Botton, Paris, and Andre Steinmetz, Aubervilliers, France, assignors to Produits Chimiques Pechiney-Saint-Gobain, Paris, France
No Drawing. Filed July 19, 1965, Ser. No. 473,240
Claims priority, application France, Feb. 5, 1964, 962,728; Aug. 8, 1964, 985,177; Nov. 26, 1964, 996,414
Int. Cl. C01g *49/08*; C01d *3/04*
U.S. Cl. 23—193 8 Claims

Ammonia and chlorine are prepared from ammonium chloride stepwise by reaction under appropriate conditions on the surface of a catalyst containing partly reduced iron oxide, at least one element or its compound having an atomic number from 23 to 30, and an alkali metal chloride, preferably KCl. The catalyst is oxidized during the reactions and is partly reduced before reuse.

3,446,590
TITANIUM DIOXIDE CONCENTRATE AND METHOD FOR PRODUCING THE SAME
Eugene J. Michal, Metuchen, and Arnold E. Nilsen, Freehold, N.J., assignors to National Lead Company, New York, N.Y., a corporation of New Jersey
No Drawing. Filed Oct. 21, 1966, Ser. No. 588,328
Int. Cl. C01g *23/04*; C22b *1/00*
U.S. Cl. 23—202 6 Claims

The present invention relates to an improved method for producing a chlorination feed material from relatively inexpensive ilmenite ores of the beach sand type by reducing the ore with hydrogen gas at relatively low temperature, separating the gangue constituents from the reduced ore, leaching the reduced ore with dilute H_2SO_4 to dissolve the iron from the TiO_2 residue and simultaneously generate H_2 gas and recycling the H_2 gas to reduce additional ore.

3,446,591
PREPARATION OF TRIMERIC RUTHENIUM TETRACARBONYL
Piero Pino, Pisa, and Guiseppe Braca, S. Frediano A Settino, Pisa, Italy, assignors to Lonza Ltd., Gampel, Valais, Switzerland
No Drawing. Application July 29, 1965, Ser. No. 475,840, now Patent No. 3,387,932, dated June 11, 1968, which is a continuation-in-part of application Ser. No. 341,132, Jan. 29, 1964. Divided and this application Apr. 10, 1968, Ser. No. 720,328
Claims priority, application Switzerland, Feb. 1, 1963, 1,292/63; Aug. 5, 1964, 10,200/64
Int. Cl. C01g *55/00*
U.S. Cl. 23—203 2 Claims

An orange-red trimeric ruthenium tetracarbonyl is directly prepared by reacting a basic ruthenium carboxylate or ruthenium acetylacetonate in an organic solvent with with carbon monoxide and hydrogen at pressures of 150 to 200 atm. and temperatures of 140 to 250° C.

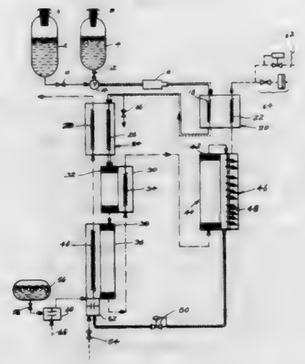
3,446,592
PREPARATION OF CHLORINE MONOFLUORIDE
Mario A. Gambardella, Milford, Albert W. Jache, North Haven, and Santad Kongpricha, Hamden, Conn., assignors to Olin Mathieson Chemical Corporation
No Drawing. Filed Oct. 21, 1965, Ser. No. 500,300
Int. Cl. C01b *7/24, 9/08*
U.S. Cl. 23—205 5 Claims

Chlorine monofluoride is prepared by heating at 100° to 1000° C. a mixture of chlorine and a metal fluoride, the metal having an atomic number of 3 to 79 inclusive and standing in Group I of the Periodic Table.

3,446,593
PROCESS FOR THE MANUFACTURE OF MACROPOROUS VITREOUS CARBON
Gilberte Moutand, Neuilly-sur-Seine, Hauts-de-Seine, France, assignor to Societe le Carbone-Lorraine, Paris, France, a French body corporate
No Drawing. Filed Jan. 7, 1965, Ser. No. 424,131
Int. Cl. C01b *31/00*
U.S. Cl. 23—209.1 11 Claims

Macroporous vitreous carbon is manufactured from a homogeneous carbon-yielding starting material in the form of a phenolic or furan resin on a macroporous support such as a polyurethane foam. The support is impregnated with the resin, if desired with a catalyst, so that when dried its weight of the resin becomes about ten times its original weight, and is left for 4 to 8 days until hardened. It is then heated at 5 to 10° C. per hour to 1200° C. in a reducing atmosphere until carbonised, whereby the support decomposes leaving a hard, amorphous, highly porous carbon.

3,446,594
METHOD FOR GENERATING HYDROGEN FROM LIQUID HYDROGEN-CONTAINING FEEDSTOCKS
Richard F. Buswell, Glastonbury, Richard A. Sederquist, Newington, Herbert J. Setzer, Ellington, and Daniel J. Snopkowski, West Hartford, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Aug. 3, 1965, Ser. No. 476,906
Int. Cl. C01b *1/18*
U.S. Cl. 23—210 22 Claims



There is disclosed a process for providing substantially pure hydrogen from hydrogen containing feedstock wherein the feedstock is admixed with water and heated, passed through a bed of dehydrogenation catalyst to produce methane-rich stream, and the methane-rich steam is then passed through an additional bed of dehydrogenation catalyst to effect conversion of the methane to carbon oxide products and hydrogen. The converted methane stream is passed in heat exchange relationship with the first catalyst bed countercurrent to the flow of the mixture of feedstock and water therethrough to establish a thermal decline from the outlet to the inlet end thereof and to decrease the temperature of the converted stream.

3,446,595
GAS PURIFICATION PROCESS
Salvatore A. Guerrieri, Rowayton, Conn., assignor to The Lummus Company, New York, N.Y., a corporation of Delaware
Filed Mar. 17, 1966, Ser. No. 536,944
Int. Cl. B01d *53/00, 53/34*; C01b *17/04*
U.S. Cl. 23—225 8 Claims

Process for removing hydrogen sulfide from a gaseous

stream wherein the gaseous stream is contacted with a liquid containing sodium bisulfite in the substantial absence of oxygen to produce elemental sulfur and sodium sulfate. The elemental sulfur is separated from the liquid and the liquid contacted with sulfur dioxide, preferably produced by burning a portion of the recovered elemental sulfur to regenerate sodium bisulfite. The process results in a net production of sulfur and utilities.

3,446,596

ANALYTICAL PACKAGE AND METHOD

Charles J. Salivar, Kirkwood, and John H. Stade, Ferguson, Mo., assignors to Mallinckrodt Chemical Works, St. Louis, Mo., a corporation of Missouri

Filed Apr. 2, 1965, Ser. No. 445,124
Int. Cl. G01n *31/22, 33/16, 1/10*
U.S. Cl. 23—230 **8 Claims**



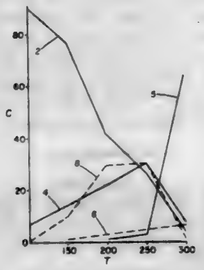
A device for detecting specified substances in liquid materials, such as the detection of nitrites in urine, comprises a semi-rigid outer receptacle within which is a tightly closed frangible container for a reagent solution such as α-naphthylamine and sulfanilic acid stabilized with a reducing substance, such as sodium sulfite. One end of the semi-rigid receptacle is closed with an absorbent plug, for example cotton. In use, the end of the receptacle containing the absorbent plug is moistened with the liquid material to be tested, and the semi-rigid outer receptacle is squeezed to break the inner frangible container and release the reagents. The presence of a specified substance is indicated by the development of color in the absorbent plug.

3,446,597

GEOCHEMICAL EXPLORATION

Ellis E. Bray, Cedar Hill, and John R. Zimmerman, Dallas, Tex., assignors to Mobil Oil Corporation, a corporation of New York

Filed July 18, 1966, Ser. No. 565,789
Int. Cl. G01n *31/00*
U.S. Cl. 23—230 **23 Claims**



1. In a method of geochemical exploration, the steps comprising:

(a) disposing in a noncombustion supporting environment a sample obtained from an organic matter containing formation in the earth's crust;

(b) heating said sample at a temperature sufficient to produce gaseous matter from organic matter in said sample; and

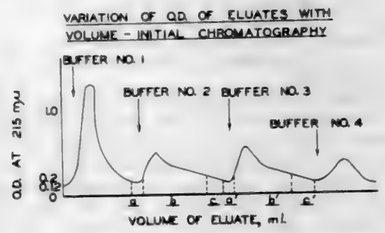
(c) measuring for each of a plurality of time intervals during said heating the quantity of at least one substance selected from the class consisting of carbon dioxide and nitrogen in said gaseous matter relative to the quantity of said at least one substance for the other of said time intervals to determine the maturation of said formation.

3,446,598

CHORIONIC GONADOTROPIN SEPARATION PROCESS

John Menley Yoder and Ernest Clarence Adams, Jr., Elkhart, Ind., assignors to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana

Filed Dec. 22, 1966, Ser. No. 603,914
Int. Cl. B01d *15/08;* **A61k** *23/00*
U.S. Cl. 23—230 **7 Claims**



A process for separating a single antigenic substance associated with the state of pregnancy from an impure chorionic gonadotropin preparation when supported on an adsorbent material in slurry form contained in a chromatographic column wherein the adsorbent material is eluted with at least two sodium phosphate buffers to recover a partially purified fraction and then eluting that fraction when supported on a second adsorbent material first with a sodium phosphate-sodium chloride buffer and thereafter with a sodium hydroxide solution.

3,446,599

METHOD AND COMPOSITION FOR THE DETECTION OF UROBILINOGEN IN FLUIDS

Aeneas J. Shand, Enfield, England, assignor to Miles Laboratories Incorporated, Elkhart, Ind., a corporation of Indiana

No Drawing. Filed Mar. 3, 1967, Ser. No. 620,228
Claims priority, application Great Britain, Mar. 11, 1966, 10,861/66
Int. Cl. G01n *31/00*
U.S. Cl. 23—230 **20 Claims**

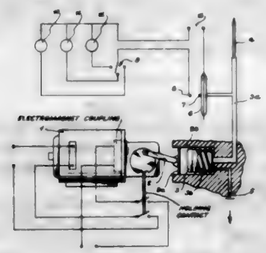
Method and composition for use in the detection of urobilinogen and mesobilirubinogen in an aqueous fluid utilizing a two component reagent system, i.e., (1) a mixture of para-di(lower alkyl)aminobenzaldehyde and an acid, which mixture forms a colored complex with the above noted compounds and (2) a solid substance which decomposes on contact with the mixture obtained by adding (1) to the aqueous fluid being tested to produce a solvent for the colored complex, said solvent having a density different from that of the aqueous fluid as well as being substantially immiscible therewith and thus being effective to extract the colored complex and remove the same from other interfering colored substances in the fluid being tested.

3,446,600

GAS DETECTOR APPARATUS

Karl-August Wächter and Wolfgang Eckstein, Lubeck, Germany, assignors to Otto H. Drager, Lubeck, Germany

Filed Aug. 8, 1966, Ser. No. 571,103
Claims priority, application Germany, Aug. 11, 1965, D 47,941
Int. Cl. G01n *31/22;* **F04b** *13/00*
U.S. Cl. 23—254 **10 Claims**



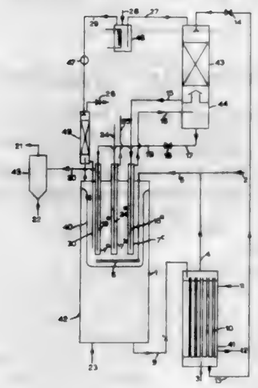
In an apparatus for the detection of foreign components in gases or air, the gas or air is drawn through a detector tube into a bellows by means of a suction pump in which the suction expansion stroke is spring-actuated and the compression stroke is faster than the expansion stroke.

3,446,601

DEVICE FOR PREPARING UREA

Antonius M. A. Heunks, Geleen, Franciscus A. Kars, Sittard, and Gerrit Hofenk, Geleen, Netherlands, assignors to Stamicarbon N.V., Heerlen, Netherlands

Filed Dec. 14, 1965, Ser. No. 513,722
Claims priority, application Netherlands, Dec. 16, 1964, 6414630
Int. Cl. B01d *3/34, 3/00;* **C07c** *127/10*
U.S. Cl. 23—263 **5 Claims**



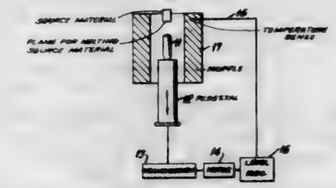
1. An apparatus for synthesizing urea from ammonia and carbon dioxide by the intermediate formation of ammonium carbamate, comprising a synthesis autoclave, comprising an ammonium carbamate reactor portion and a urea reaction portion separated by a wall, provided with a supply conduit for the reaction mixture and at least one series of heat exchanger bundles in the ammonium carbamate reactor portion, each heat exchanger bundle comprising elements consisting of concentric inner and outer pipes, the outer pipe sealed at the end within the ammonium carbamate reactor portion and the inner pipe passageway in connection with an annular space between the inner pipe and the outer pipe near the sealed end of the outer pipe, overflow openings in the wall of the ammonium carbamate reactor portion allowing passage into the urea reaction portion, a stripping column communicating with the urea reaction portion of the synthesis autoclave, a conduit for the supply of stripping gas and a discharge conduit for the gas released in the stripping column communicating with the ammonium carbamate reactor portion attached to the stripping column, a rectifying column and a gas-liquid separator, a conduit, provided with a throttle valve, connecting the stripping column and the rectifying column, the rectifying column communicating with the gas-liquid separator, a conduit connecting the rectifying column to a series of inner pipes in the heat exchanger in the carbamate reactor, a conduit from the annular space between the inner and outer pipes of the heat exchangers to the gas-liquid separator, and a discharge conduit fitted to the bottom of the gas-liquid separator.

3,446,602

FLAME FUSION CRYSTAL GROWING EMPLOYING VERTICALLY DISPLACEABLE PEDESTAL RESPONSIVE TO TEMPERATURE

Kenichi Shiroki and Seiichi Saito, Tokyo, Japan, assignors to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan

Filed Nov. 9, 1966, Ser. No. 593,029
Claims priority, application Japan, Nov. 13, 1965, 40/69,672
Int. Cl. B01d *9/00*
U.S. Cl. 23—273 **2 Claims**



1. In a crystal growing apparatus of the flame fusion type employing a muffle embracing a vertically displaceable pedestal for seating the crystal to be grown, and means feeding molten material on the said seated crystal, the improvement comprising: a temperature sensitive element imbedded in the muffle wall proximate the level at which the growing crystal top is to be maintained; means for vertically displacing said pedestal within said muffle; and means coupled between said displacing means and said temperature sensitive element for controlling the operation of said vertical displacement means.

3,446,603

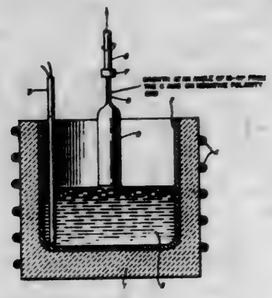
GROWTH OF LITHIUM NIOBATE CRYSTALS

Gabriel M. Loiacono, Lodi, and Kurt Nassau, Bernardsville, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed July 12, 1965, Ser. No. 471,157
Int. Cl. C01d *11/02;* **C01g** *33/00*
U.S. Cl. 23—301 **4 Claims**

1. Procedure for the seeded growth of lithium niobate comprising freezing material from a melt containing from 0.1 atom percent up to five atom percent based on niobium of at least one ion selected from the group consisting of molybdenum and tungsten on a seed crystal so ar-

ranged that growth on the seed is at an angle of between 18 degrees and 41 degrees from the *c* axis and in which



growth proceeds on the negative polarity end of the said crystal.

3,446,604
ACID AND SALTS OF $B_{20}H_{18}^{-2}$ ION
Earl L. Muetterties, West Chester, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 199,571, May 31, 1962. This application Oct. 9, 1963, Ser. No. 315,084
Int. Cl. C01b *6/08, 6/22*
U.S. Cl. 23—358 **16 Claims**

The acid $H_4B_{20}H_{18}$ and salts thereof can be prepared by oxidizing a decahydrodecaborate (2^-) compound, and reducing the product. Cations can be exchanged by metathetical reaction. A hydroxyl group, a hydrocarbyloxy group or an amino group can be introduced by reacting $B_{20}H_{18}^{-2}$ anions with the appropriate base prior to reduction. The compounds have many uses such as the manufacture of resistive elements or can be used in the manufacture of fireworks.

3,446,605
METHOD FOR PREPARING INORGANIC HYDRIDES OF PHOSPHORUS AND ARSENIC
Albert E. Finholt, 1127 W. 2nd St., Northfield, Minn. 55057
No Drawing. Filed Dec. 24, 1963, Ser. No. 333,176
Int. Cl. C01b *27/00, 25/06*
U.S. Cl. 23—365 **8 Claims**

Solutions of compounds having the formula

$$MAl(EH_2)_4$$

where M is an alkali metal and E is phosphorus or arsenic, are prepared by bringing phosphine or arsine in contact with a solution of an alkali metal aluminum hydride in tetrahydrofuran or diglyme. The temperatures and pressures used are not critical.

3,446,606
REFRACTORY METAL ARTICLES HAVING OXIDATION-RESISTANT COATING
Leonard A. Friedrich, Hartford, and Emanuel Hirakis, Mansfield Center, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
No Drawing. Filed July 14, 1965, Ser. No. 472,405
Int. Cl. C23c *5/00*
U.S. Cl. 29—195 **14 Claims**

Metal articles that exhibit oxidation resistance at high temperatures, and a method of protecting the surface of reactive-refractory metal articles are provided. The articles include a reactive-refractory metal substrate and a coating composition containing a first metal selected from the group consisting of Al, Si, Be, and B, and at least one second metal selected from the group consisting of Sn, Mg, Bi, Li, Ca, Ag, and Cu. The coating also includes 0.5 to 5% of a halide activator, and can include up to 10% by weight in the aggregate of Zn, Ti, and Cr. The first metal forms an intermetallic composition with the substrate when the article is fired. Preferably, the article includes a surface zone comprising an oxidic glass and a subsurface zone comprising the above-described coating composition. A typical article includes a columbium-base alloy substrate, a subsurface zone consisting essentially of 25% by weight Al, 74% by weight Sn, and 1% LiF; and a surface zone of an oxidic glass. In the process, articles are first prepared that conform to the above description, and then fired to form a continuous oxidation-resistant coating.

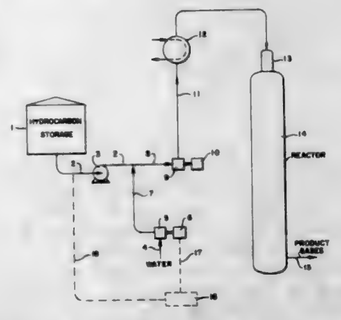
3,446,607
IRIDIUM COATED GRAPHITE
Herbert F. Volk, Parma, and Robert A. Mercuri, Brookpark, Ohio, assignors to Union Carbide Corporation, a corporation of New York
Filed Sept. 14, 1965, Ser. No. 487,165
Int. Cl. C23c *1/10, 7/00*
U.S. Cl. 29—195 **2 Claims**

1. A graphite substrate resistant to oxidation at temperatures up to 2000° C., said substrate having an essentially pore-free coating of iridium, said coating comprising an inner layer adjacent said graphite substrate formed of sintered finely divided particles of iridium, an intermediate layer of vapor plated iridium, and an outer layer of electro-plated iridium.

3,446,608
ANTIOXIDANT COMPOSITION AND USE THEREOF
Marcus R. Schrein, Barrington, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed Feb. 28, 1966, Ser. No. 530,345
Int. Cl. C10l *1/22*
U.S. Cl. 44—61 **10 Claims**

A mixture of from about 10% to about 90% by weight of hardwood tar distillate and from about 90% to about 10% by weight of N-phenyl-N'-sec-alkyl-ortho-phenylenediamine suitable for use as an antioxidant in gasoline.

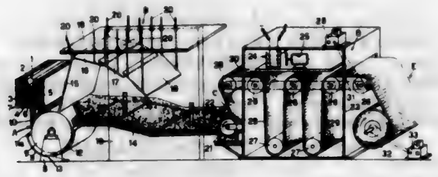
3,446,609
GASIFICATION WITH WATER-CONTAINING FEED
Ernst F. Reinmuth and Leonard W. Ter Haar, The Hague, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed May 13, 1965, Ser. No. 455,417
Claims priority, application Great Britain, May 14, 1964, 20,187/64
Int. Cl. C10g *11/28*
U.S. Cl. 48—215 **4 Claims**



In a process for production of H_2 and CO containing gas mixtures by partial combustion of hydrocarbons, soot

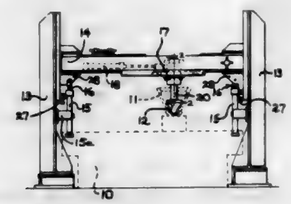
formation is suppressed by injecting small amounts (preferably 0.1–4.0% w.) of liquid water into the feed. Explosive evaporation of the liquid water into the partial oxidation burner improves atomization of the feed and has an advantageous cooling effect resulting in reduced soot formation.

3,446,610
APPARATUS FOR THE CONTINUOUS PRODUCTION OF A MAT OF GLASS FILAMENTS
Johannchristoph Riedel, Wagrain, Salzburg, Austria
Filed Oct. 23, 1965, Ser. No. 503,143
Claims priority, application Italy, Dec. 12, 1964, 26,520/64
Int. Cl. C03b *37/04*
U.S. Cl. 65—9 **4 Claims**



Apparatus for the production of a mat of glass filaments wherein extruded filaments are deposited onto a rotating drum having an electrical charge and are transported over a small arc of contact with the drum and detached therefrom by centrifugal force and carried in the airstream generated by the rotating drum into a mat-forming surface in a chamber in which the walls are charged with an electrical charge opposite that on the drum.

3,446,611
APPARATUS FOR CENTRIFUGALLY CASTING GLASS ARTICLES
John R. Prendergast, Columbus, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed Dec. 20, 1965, Ser. No. 514,815
Int. Cl. C03b *19/04*
U.S. Cl. 65—302 **11 Claims**



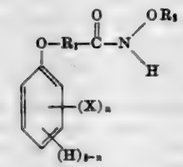
An apparatus for centrifugally casting glass in an open top rotatable mold comprising a vertically movable bridge supported by a pair of spaced columns, a pressing plunger vertically movable independently of the bridge into the mold and positive step means to limit the downward movement of the ends of the bridge.

3,446,612
BASIC FERTILIZERS CONTAINING DERIVATIVES OF AN OLIVINE MINERAL
Frank W. Taylor, 4452 Forest Place SE., Mercer Island, Wash. 98040
Filed June 21, 1965, Ser. No. 465,292
Int. Cl. C05g *3/00*
U.S. Cl. 71—40 **11 Claims**

Finely divided particles of a natural magnesium silicate mineral such as olivine are thoroughly mixed together with sulphuric acid and water to produce a slurry in which the sulphuric acid combines with the mineral and water to form silica gel, magnesium sulphate and ferric sulphate. Substantially at the completion of this reaction P_2O_5 is blended into the slurry. Substantially at the completion of the latter reaction ammonia is admixed to said slurry to form a wet basic silicate complex. Urea and ammonia are then added together, with ammonia addition always leading urea addition so that the slurry is maintained basic in character. A potash mineral is admixed to the slurry to provide the K nutrient. The slurry is then dried and the solids are granulated to form a granulated xerogel product of limited solubility.

3,446,613
N-ALKANOYLOXYPHENOXYALKANAMIDES AS HERBICIDES
Jordan P. Berliner and Sidney B. Richter, Chicago, Ill., assignors to Velsicol Chemical Corporation, Chicago, Ill., a corporation of Illinois
No Drawing. Filed Aug. 31, 1964, Ser. No. 393,339
Int. Cl. A01n *9/20;* **C07c** *103/32*
U.S. Cl. 71—118 **7 Claims**

A method of controlling undesirable plant life which comprises applying to the locus of the undesirable plant infestation a herbicidal composition comprising an inert carrier and, in a quantity which is herbicidally toxic to said undesirable plant life, a compound of the formula



wherein *n* is an integer from 1 to 4; each X is independently selected from the group consisting of halogen and unsubstituted lower alkyl; R_1 is an unsubstituted alkylene; containing from 1 to 4 carbon atoms and R_2 is lower acyl.

3,446,614
PRODUCTION OF IRON ALLOYS
Leonard Terence Johnson, 285 Long Acre, Nechells, Birmingham, 7, England
No Drawing. Filed Mar. 28, 1966, Ser. No. 537,698
Claims priority, application Great Britain, Mar. 30, 1965, 13,480/65
Int. Cl. C21c *7/00;* **C22c** *35/00*
U.S. Cl. 75—129 **3 Claims**

A solid shaped composition for treating molten iron in a cupola, the composition containing 35 to 90 parts by weight of an element capable of alloying with iron, such as ferrosilicon, 5 to 40 parts by weight of a fluxing agent such as calcium fluoride, and 5 to 20 parts by weight of a binder such as portland cement.

3,446,615
HAFNIUM BASE ALLOYS
Vernon L. Hill, Niles, John J. Rausch, Evanston, Alan L. Hess, Lemont, Ray J. Van Thyne, Oaklawn, and Harry R. Nichols, Chicago, Ill., assignors to IIT Research Institute, Chicago, Ill., a not-for-profit corporation of Illinois
No Drawing. Filed May 11, 1967, Ser. No. 643,004
Int. Cl. C22c *31/00*
U.S. Cl. 75—134 **2 Claims**

A method and related compositions for applying metallic coatings onto a variety of substrates by depositing a slurry of the coating materials and heating through various stages to form the coating. The slurry consists of an

organic carrier vehicle or binder, particulate fugitive metal powders and powders of the coating constituents. Upon heating, the organic carrier vehicle is first driven off; subsequent heating causes both the practically complete vaporization of the fugitive metal and the bonding of a coherent metal coating onto the substrate material. The process is especially suited for the application of certain refractory metal coatings onto a variety of refractory substrates.

3,446,616

XEROGRAPHIC IMAGING EMPLOYING A SELECTIVELY REMOVABLE LAYER

Harold E. Clark, Penfield, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Dec. 2, 1964, Ser. No. 415,384
Int. Cl. G03g *7/00*
U.S. Cl. 96—1.5 **13 Claims**



The subject matter of this patent application is directed to a imaging process whereby a particulate image is xerographically formed on a specially prepared imaging member having a selectively separable photoconductive layer. After the particulate image is formed on the special member and without permeately affixing it thereto, a tacky transfer member is pressed against the image bearing member so that intimate contact will be made with the photoconductive layer in all areas except where prevented by the particulate image. The transfer member and imaging member are then separated thereby forming complementary images on the respective surfaces.

3,446,617

THERMOGRAPHIC COPYING PROCESS

Buck Stricklin, St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Minnesota

Filed Mar. 15, 1966, Ser. No. 536,572
Int. Cl. G03c *5/24, 11/22*
U.S. Cl. 96—27 **13 Claims**

Multiple copies of a printed original are made by a repetitive process involving radiation heating at image areas of a master sheet coated with a non-tacky vaporizable solid, condensing the vapor at corresponding areas of a receptor sheet as a metastable liquid, and powder developing the liquid image.

3,446,618

PHOTOGRAPHIC SILVER HALIDE EMULSIONS CONTAINING TRIFLUOROMETHYL - 4 - HYDROXY QUINOLINE CARBOXY ACID SALT AS A STABILIZER

Fritz Dersch, Binghamton, and Sally L. Paniccia, Endwell, N.Y., assignors to GAF Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 8, 1965, Ser. No. 506,840
Int. Cl. G03c *5/24, 1/34*
U.S. Cl. 96—66.5 **11 Claims**

Stabilization of light-sensitive silver halide emulsions by incorporation therein or in a developer used to process the same, of a trifluoromethyl-4-hydroxy quinoline carboxy acid salt or ester amounting to 1 to 40 mg. per mole of silver halide or 1 to 50 mg. per liter of developer solution.

3,446,619

RADIATION SENSITIVE SILVER-DYE COMPLEXES

Paul B. Gilman, Charles A. Goffe, and Jean E. Jones, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Nov. 16, 1964, Ser. No. 411,594
Int. Cl. G03c *1/40*
U.S. Cl. 96—63 **40 Claims**

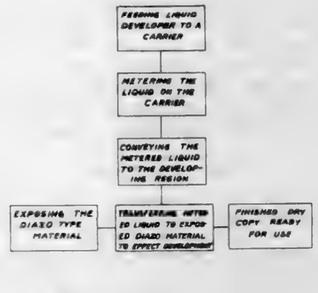
A radiation-sensitive composition which consists essentially of at least one reaction product of silver and a spectral sensitizing dye which upon exposure to radiation forms active sites for physical development. Typical sensitizing dyes include cyanines, merocyanines, oxonols, hemicyanines, hemioxonols, styryls and benzylidenes.

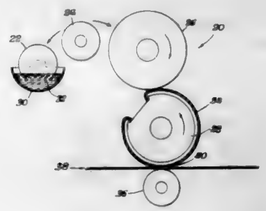
3,446,620

PROCESS FOR DEVELOPING DIAZOTYPE MATERIALS

Konrad Parker, Park Ridge, Ill., assignor to Addressograph-Multigraph Corporation, Charles Bruning Division, Mount Prospect, Ill., a corporation of Delaware

Filed Mar. 18, 1965, Ser. No. 440,752
Int. Cl. G03c *5/34*
U.S. Cl. 96—49 **7 Claims**





Method of producing photocopies on two-component diazotype materials which comprises the steps of (a) exposing the diazotype material to actinic radiation corresponding to the light and dark areas on the original, (b) applying a developing liquid comprising at least 20% by weight of morpholine, piperidine, lower alkylmorpholine, lower alkylpiperidine, or an organic amine of the formula

$$RR'N—C_nH_{2n}—O—X$$

wherein R, R' and X are hydrogen, lower alkyl or lower hydroxyalkyl and *n* is an integer from 2 to 4, inclusive, to a rubber blanket, (c) contacting the exposed diazotype material with said rubber blanket under pressure, thus transferring the developing liquid evenly and uniformly to the surface of the diazotype material at a concentration not exceeding 3 grams per square meter at a temperature such that the liquid is not substantially vaporized, and (d) removing the diazotype material from contact with the rubber blanket and allowing the azo dye image to form substantially instantaneously on the surface thereof.

3,446,621

POSITIVE IMAGING PHOTOGRAPHIC PROCESS

Ernst-August Hackmann, Johannes Munder, and Roland Moraw, Wiesbaden-Biebrich, Germany, assignors to Kalle Aktiengesellschaft, Wiesbaden-Biebrich, Germany, a corporation of Germany

No Drawing. Filed June 2, 1966, Ser. No. 554,697
Claims priority, application Germany, June 4, 1965, K 56,310
Int. Cl. G03c *1/64*
U.S. Cl. 96—49 **5 Claims**

Light-sensitive compositions comprising a ferrocene and a halogenated hydrocarbon are exposed and contacted with a noble metal salt solution which forms a noble metal positive image in the non-exposed areas.

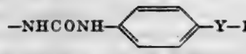
3,446,622

PROCESS FOR THE PREPARATION OF COLOR IMAGES USING 2 - UREIDO PHENOLIC COUPLERS

Remo Magagnoli, Ferrania, Savona, and Enzo Coraluppi, Bologna, Italy, assignors to Ferrania, S.p.A., Milan, Italy

No Drawing. Filed Jan. 11, 1966, Ser. No. 519,965
Int. Cl. G03c *7/34*
U.S. Cl. 96—55 **4 Claims**

Photographic elements which contain a phenolic coupler having in the 2-position a radical of the formula



wherein Y is —NHCO—, —COHN—, —$NHSO_2$— or —SO_2NH— and R is hydrogen, aryl, alkyl, or arylalkyl, are shown.

3,446,623

METHOD FOR PREPARING A COOKIE-LIKE PRODUCT

Jack C. Gray, Port Washington, and Allan N. Cohan, Cedarhurst, N.Y. (both of 110 Central Ave., Farmingdale, N.Y. 11735)

No Drawing. Filed Nov. 27, 1964, Ser. No. 414,459
Int. Cl. A21d *13/08*
U.S. Cl. 99—1 **4 Claims**

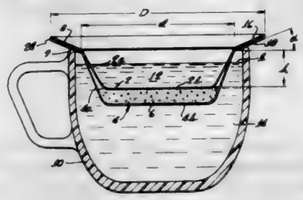
The method of preparing a cookie-like product wherein about equal parts by weight of casein, sugar and protein flour, shortening in the amount of about 20% by weight of the combined weight of said casein, sugar and protein flour are mixed with hot water and a sufficient quantity of sodium bicarbonate to react with the casein to produce sodium caseinate and carbon dioxide, followed by allowing the mass to cool, then adding minor proportions of vitamins and flavoring and dehydrating the mass while cool and under partial vacuum.

3,446,624

DISPOSABLE COFFEE DRIP BREWER

William David Luedtke, 2689 Canary Drive, Costa Mesa, Calif. 92626

Filed July 28, 1967, Ser. No. 656,886
Int. Cl. A23f *1/08*; A47j *31/10, 31/08*
U.S. Cl. 99—71 **16 Claims**



A disposable device for drip brewing coffee includes a pair of nested filter cups containing ground coffee between the filter bottoms. An annular disc connected to the top of the filter cups is adapted to be supported on the upper lip of a coffee cup to suspend the filter cups in the coffee cup. The upper filter cup forms a reservoir for receiving hot water to be dripped through the filter paper and ground coffee. The side walls of the filter cups are flexible so that the device is collapsed for packaging with the packet of coffee received in the annulus of the disc and the entire device being no thicker than the packet of coffee. In one embodiment, the wall is impervious to water to insure that all of the water passes through the ground coffee. After the packet is extended into a cup by extending the side walls, sufficient water is poured through the filters to bring the level of coffee in the cup above the ground coffee in the packet. The packet can then be left in the beverage to steep until the desired strength is obtained, and can also be oscillated in the beverage to recirculate the liquid coffee through the packet and increase the strength.

3,446,625

SYNTHETIC PULP FOR EDIBLE JUICES AND METHOD OF MAKING SAME

John Blethen, Rockland, Maine, assignor to Marine Colloids, Inc., Springfield, N.J., a corporation of Delaware

No Drawing. Filed June 4, 1965, Ser. No. 461,514
Int. Cl. A23l *1/04*
U.S. Cl. 99—105 **30 Claims**

A synthetic juice pulp is provided by coalescence accomplished by co-precipitation from or by drying a solution of a water soluble gum insolubilizable responsive to calcium cations or potassium cations or both, which solution has dispersed therein a modifying substance which may be a cold water soluble gum, a cold water insoluble cold water swellable gum or a non-swelling carbohydrate flour or soy bean flour, or a combination thereof. Insolubilization of the insolubilizable water soluble gum in the coalesced material is effected by calcium cations or potassium cations, or both, either during coalescence or when the pulp is used in making a synthetic juice.

3,446,626

METHOD FOR PREPARING A BROMELAIN SOLUTION FOR ANTE-MORTEM INJECTION

John K. McAnelly, 405 Sherman St., Park Forest, Ill. 60466, and William D. Warner, 900 Kemman, La Grange Park, Ill. 60525

No Drawing. Filed Aug. 25, 1966, Ser. No. 574,955
Int. Cl. A22c; C12d *13/10*
U.S. Cl. 99—107 **5 Claims**

Bromelain is treated to produce an enzyme solution suitable for ante-mortem injection into animals to effect subsequent tenderization of the flesh. A bromelain solution is first adjusted to about pH 7.5 or higher and held for at least six hours, whereafter the solution is treated with an oxidizing agent. The result is a relatively high yield of enzyme active for tenderizing purposes with a minimum of fractions that may cause side effects in animals.

3,446,627

RAPID MANUFACTURE OF CHEESE

Peter P. Noznick, Evanston, Robert H. Bundus, Riverside, and Anthony J. Luksas, Chicago, Ill., assignors to Beatrice Foods Co., Chicago, Ill., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 407,525, Oct. 29, 1964. This application Apr. 18, 1968, Ser. No. 722,496
Int. Cl. A23c *19/02, 19/14*
U.S. Cl. 99—115 **7 Claims**

The ripening process of unripened cheese is accelerated by carrying out the ripening process in an aqueous fluid

system having the cheese therein in a macerated form. The fluid system is vigorously agitated for 2 to 10 days to accomplish the ripening of the cheese.

3,446,628

CONGEALED CONFECTIONS

Thomas J. Schoch and Donald F. Stella, La Grange, and Howard J. Wolfmeyer, Arlington Heights, Ill., assignors to Corn Products Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 15, 1965, Ser. No. 507,707
Int. Cl. A23g 3/00
U.S. Cl. 99—134 17 Claims

Gelled food products which contain starch as the congealing agent are prepared by employing, as the congealing agent, a thin-boiling, amylose-containing cereal starch having a fluidity within the range of about 30 to about 80, an amylose content not in excess of about 35%, and a fat content not in excess of 0.3%. The invention is applicable to the preparation of any food product wherein quick gelling properties are desired, and is particularly useful in the preparation of gum confections such as gumdrops, jellybeans, etc.

3,446,629

2-ETHYLPYROMECONIC ACID AS AN AROMA AND FLAVOR ENHANCER

Charles R. Stephens, Jr., East Lyme, and Robert P. Allingham, Groton, Conn., assignors to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Original application Apr. 14, 1967, Ser. No. 630,818, now Patent No. 3,376,317, dated Apr. 2, 1968. Divided and this application Oct. 26, 1967, Ser. No. 701,494
Int. Cl. A23l 1/22
U.S. Cl. 99—140 2 Claims

2-ethylpyromeconic acid and its use in improving the flavor and aroma of edibles and the aroma of perfumes.

3,446,630

PROCESS FOR PRESERVING EDIBLES

John J. Beereboom, Old Lyme, Conn., assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 8, 1965, Ser. No. 494,233
Int. Cl. A23l 3/34
U.S. Cl. 99—150 7 Claims

Process for preserving foodstuffs, particularly processed foods, fresh vegetables, and fruits, by adding thereto small amounts of benzohydroxamic acid or one of its non-toxic salts. Preferably the preservative is applied in aqueous solution in an amount of about 0.01 to about 1.0% calculated as benzohydroxamic acid based on the weight of the foodstuff.

3,446,631

RICE PACKAGE

Jack E. Samuels, Cleveland, Ohio, assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Sept. 13, 1965, Ser. No. 486,690
Int. Cl. B65b 25/00
U.S. Cl. 99—171 4 Claims
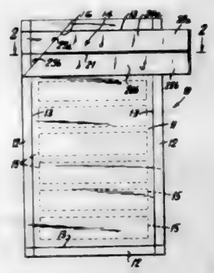
An improved ink-retaining rice package is provided from a film having external layers of polyethylene and an internal layer of a vinylidene chloride polymer. In such a package, rice keeps well and printing ink on the outer surface of the package is not detached over a period of time.

3,446,632

FOOD MERCHANDISING PACKAGE FOR A TOASTER-HEATED FOOD PRODUCT

Wayne P. Le Van, 310 E. 44th St., New York, N.Y. 10017

Filed Oct. 23, 1965, Ser. No. 503,091
Int. Cl. A23l 3/02
U.S. Cl. 99—174 1 Claim



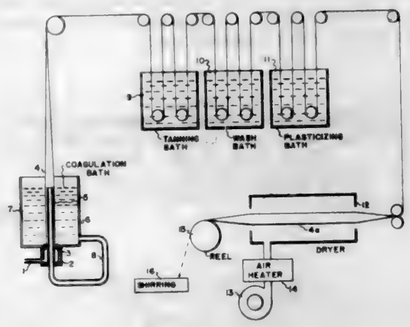
A food merchandising package for a toaster-heated food product includes a substantially rectangular sealed pouch of heat conductive priable metal foil insertable into a toaster slot with a portion projecting outwardly of the toaster. A pair of tear strips of insulating material extend in slightly spaced parallel relation transversely of the projecting portion and laterally to one side of the package, with a small clearance between adjacent edges of the strips, to provide insulated handling and package opening means. A food product is sealed in the pouch. One corner of the projecting portion is formed with a diagonally extending crease and the tabs are bevelled at their ends so that they substantially coincide with the diagonal tear line.

3,446,633

METHOD OF PREPARING AN OIL-TREATED EDIBLE COLLAGEN SAUSAGE CASING

Robert D. Talty, Danville, Ill., assignor to Tee-Pak, Inc., Chicago, Ill.

Filed Mar. 24, 1966, Ser. No. 537,221
Int. Cl. A22c 13/00
U.S. Cl. 99—175 5 Claims



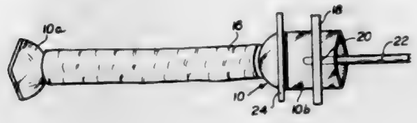
Edible collagen casing which is highly translucent is prepared by incorporating a small amount of a non-toxic edible food grade oil in one of the treating baths such as the washing bath, plasticizing bath, or tanning bath, used in preparing the casing. Oil, in the amount of about 0.01%, is added to the casing in one of the treating baths and renders the casing highly translucent.

3,446,634

SAUSAGE CASING HOLDER

Bruno Stahlberger, Buchs, St. Gall, Switzerland, assignor to Naturin-Werk Becker and Co., Weinheim, Bergstr., Germany, a corporation of Germany

Filed Sept. 22, 1966, Ser. No. 581,277
Claims priority, application Germany, Oct. 8, 1965, N 27,446
Int. Cl. A22c 13/00
U.S. Cl. 99—176 10 Claims



1. A shirred sausage casing having disposed therein a fluid inflated flexible supporting member of greater length than said sausage casing and having portions of said member protruding beyond the ends of said casing where the diameter of said protrusions is greater than the diameter of said sausage casing.

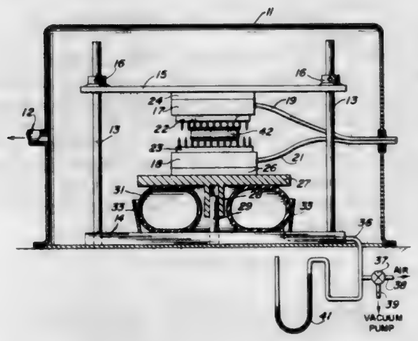
8. The method of producing a sausage, which comprises inserting a tubular supporting film into the cavity of a shirred sausage casing having a diameter smaller than the unrestrained diameter of said supporting film, such that a portion of said supporting film protrudes beyond both ends of said shirred sausage casings; sealing one end of said supporting film; inflating said supporting film; sealing the unsealed end of said inflating film; soaking the casing-film assembly in water; inserting one end of said sausage casing over the horn of a sausage stuffing device, whereby said inflating film is ruptured; removing said ruptured film from said assembly; and stuffing said sausage casing.

3,446,635

METHOD AND APPARATUS FOR FREEZE-DEHYDRATION OF SLICED FOOD MATERIALS

Alvin I. Nelson, Champaign, Ill., and Eugene V. Kwiat, Minneapolis, Minn., assignors to University of Illinois Foundation, Urbana, Ill., a corporation of Illinois

Filed Aug. 10, 1965, Ser. No. 478,714
Int. Cl. F26b 5/10; A23b 1/04
U.S. Cl. 99—208 5 Claims



Method and apparatus for freeze-drying sliced food material. The ends of the plurality of heat-conducting pins are maintained in contact with the receding ice front within the slice of material as drying proceeds. A high rate of drying is maintained without sticking of the material to the pins.

3,446,636

METHOD FOR HEAT STERILIZING FOOD IN SEALED CONTAINERS

Edwin C. Kraus, Ortonville, Minn., assignor to Big Stone Canning Company, Ortonville, Minn., a corporation of Delaware

Filed Apr. 20, 1966, Ser. No. 543,883
Int. Cl. A23l 3/02
U.S. Cl. 99—214 1 Claim

A method of heat-sterilizing sealed food containers in which a plurality of containers are oriented in rows and tiers of rows with a horizontal axis penetrating the approximate midpoint of the resultant mass, in which the containers are confined in the oriented position, and in which the mass of containers is rotated about the horizontal axis in order to agitate the contents.

3,446,637

CERAMIC MATERIAL AND METHOD

John A. Earl, Alhambra, Calif., assignor to Physical Science Corporation, Arcadia, Calif., a corporation of California

No Drawing. Filed Mar. 18, 1964, Ser. No. 352,976
Int. Cl. C03c 5/02, 3/10
U.S. Cl. 106—49 13 Claims

This invention relates to a ceramic material for providing a hermetic seal with the oxides of certain metals such as iron, nickel and chromium and particularly with stainless steel of the 400 series. The ceramic material has properties of providing this hermetic seal to temperatures of approximately 1000° F. The ceramic material also has properties of providing an electrical resistivity of at least 10^6 ohms/square centimeter to temperatures of approximately 800° F. The invention also relates to methods of producing the ceramic material from different fluxes each of which has properties providing a contribution to the properties of the ceramic material.

3,446,638

OPTICAL FLINT GLASSES

Heinz Bromer, Hermannstein, and Norbert Meinert and Demetrius Ahl, Wetzlar, Germany, assignors to Ernst Leitz, G.m.b.H., Wetzlar, Lahn, Germany

No Drawing. Filed Jan. 18, 1965, Ser. No. 426,377
Claims priority, application Germany, Feb. 13, 1964, L 47,037
Int. Cl. C03c 3/12, 3/30
U.S. Cl. 106—52 2 Claims

Optical flint glass free of color melted from a mixture of 27 to 42% by weight of silica and metal metaphosphates as the glass former, 20–43% by weight of titanium oxide and 22–50% by weight of alkali metal and alkaline earth oxides. In addition there is provided in the mixture lead oxide in amounts up to 28% by weight of oxides taken from the group of zinc, cadmium, bismuth, antimony, zirconium, tin, tungsten, tantalum and niobium. Certain critical ratios are described to effect the optical glass of the given properties.

3,446,639

BASIC REFRACTORY FOR OXYGEN CONVERTERS

James A. Crookston and William R. Gritton, Mexico, Mo., assignors, by mesne assignments, to A. P. Green Refractories Co., Mexico, Mo., a corporation of Missouri

No Drawing. Filed Oct. 25, 1966, Ser. No. 589,198
Int. Cl. C04b 35/02, 35/04
U.S. Cl. 106—56 9 Claims

A tar bonded refractory shape comprising 60–80% of −3+20 coke covered grain, 5–15% −20 mesh coke covered grain and 10–30% uncoked basic aggregate of −65 mesh and 3–10% tar bonding agent.

3,446,640
METHOD OF MANUFACTURE OF TRANSPARENT YELLOW AZO PIGMENT
Tatjana Ivanovna Orlova, Jugo-Zapadny raion, kvartal 38, korpus 160, Apt. 53, and Nadezhda Vasiljevna, Shcherbakova, 5 Nizhne-Likhoborsky proezd 5, Apt. 50, both of Moscow, U.S.S.R.
No Drawing. Filed June 24, 1965, Ser. No. 466,835
Int. Cl. C09d 7/12; C09b 29/00
U.S. Cl. 106—288 3 Claims

A yellow transparent monoazo pigment is produced by coupling at 18°–20° C. and a pH of 4.5–5.5, diazotized 4-chloro-2-nitroaniline with a mixture of the o-anisidide and the m-xylidide of acetoacetic acid in which the o-anisidide and m-xylidide are present in a molar ratio of 1–2.33:1 and then adding to the coupled material a sulfite liquor.

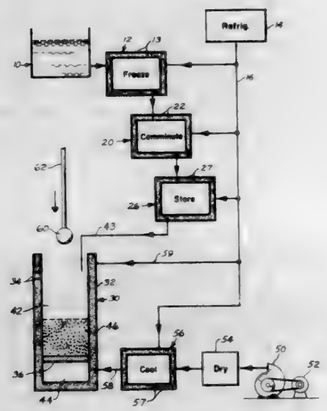
3,446,641
PIGMENT COMPOSITIONS
John Mitchell and Arthur Topham, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed Aug. 8, 1966, Ser. No. 570,721
Claims priority, application Great Britain, Aug. 16, 1965, 34,923/65
Int. Cl. C09b 67/00
U.S. Cl. 106—288 13 Claims

Pigment compositions containing an organic pigment intimately mixed with an azo compound free from sulphonic acid or carboxylic acid groups. The azo compound has the formula

$$A—N{=}N—B—Y—NR—Z—NR_1R_2$$

wherein A is an aromatic or heterocyclic group, B is an aromatic or heterocyclic group, Y is a carbonyl or sulphonyl group, Z is a divalent hydrocarbon group, R is hydrogen, alkyl or β-hydroxyethyl and R_1 and R_2 are each hydrogen, alkyl, β-hydroxyethyl or the atoms necessary together with the nitrogen atom to form a heterocyclic ring.

3,446,642
COATING PROCESS
James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Robert F. Holtze, Pacoima, and Charles D. Baker, Lakewood, Calif.
Filed Feb. 17, 1967, Ser. No. 617,776
Int. Cl. C23c; B02c 11/08
U.S. Cl. 117—21 1 Claim



Solid objects are coated essentially at room temperature with a resinous material that is initially fluid at that temperature. The resinous material is frozen and comminuted at sub-ambient temperature, and is contacted as a cold powder with the object to be coated. The powder melts on contact, forming a uniform coating which is subsequently cured substantially at ambient temperature to a hard solid.

3,446,643
METHOD OF COATING ARTICLES WITH TITANIUM AND RELATED METALS AND THE ARTICLE PRODUCED
Robert F. Karlak, Sunnyvale, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Mar. 22, 1965, Ser. No. 441,933
Int. Cl. C23c 3/04, 13/04; C03c 25/02
U.S. Cl. 117—22 7 Claims

A method is provided for coating articles such as glass, quartz, beryllia, ceramic, porcelain and the like with a thin layer of titanium and related metals through the use of a spray technique. The spray technique permits articles of both simple and complex configurations to be coated at comparatively low temperatures in an accompanying inert gas atmosphere. The resulting coating has useful electrical and adherence properties for electrical circuits and components, or for bonding applications.

3,446,644
METHOD OF PRODUCING A DECORATIVE COATING ON A SURFACE
Richard John Murphy, 45 Oak Hill Circle, Oakland, Calif. 94605, and Robert Dwight Cole, 459 Broadmoor, San Leandro, Calif. 94577
No Drawing. Filed Dec. 29, 1966, Ser. No. 605,554
Int. Cl. B44d 1/14, 5/06
U.S. Cl. 117—25 8 Claims

A method of producing a decorative coating on a surface wherein a first drying vehicle is applied to a surface, decorative chips are distributed over the surface, and another drying vehicle is applied to the surface while the first drying vehicle is still wet, the application of the second drying vehicle tending to redistribute the chips which were originally distributed on top of other chips, resulting in their more even distribution.

3,446,645
DESICCANT BODIES
Wilfred Drost, Williamsville, N.Y., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Continuation of application Ser. No. 363,985, Apr. 30, 1964. This application May 6, 1968, Ser. No. 727,089
Int. Cl. B44c 1/06; B01j 11/40
U.S. Cl. 117—26 5 Claims

Attrition resistant agglomerates of zeolitic molecular sieve crystals are prepared by first forming an agglomerate of zeolite crystals either alone or in combination with a clay binder, coating the agglomerate with an inert silica-containing mineral, impregnating this coating with an aqueous solution of an alkali metal silicate, and heating the impregnated coated agglomerate to cure and harden the alkali metal silicate and to activate the crystalline zeolitic molecular sieve.

3,446,646
PRESSURE SENSITIVE RECEIVING AND TRANSFER SHEET
Jack H. Terry, Pittsford, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
No Drawing. Filed Apr. 29, 1965, Ser. No. 451,986
Int. Cl. B41m 5/02; C08f 45/22
U.S. Cl. 117—35.6 5 Claims

A novel pressure transfer sheet comprising a wax and an adhesive resin, coated on a substrate, in a thickness ranging from about 0.5 to about 3.5 lbs./ream, is disclosed.

3,446,647
TRANSFER COATING AND PAPER
John S. Rizner, Arlington Heights, Ill., assignor to Varco Incorporated, a corporation of Illinois
Filed Oct. 5, 1965, Ser. No. 493,171
Int. Cl. B41c 1/06
U.S. Cl. 117—36.1 5 Claims

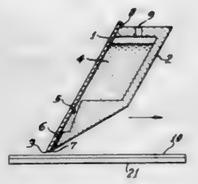


A transfer sheet having a release coating containing clay filler and a water-soluble binder base such as casein and further containing 5 to 30 parts by weight highly surface-active wetting agent per 2 to 10 parts by weight binder and in which the wetting agent is one which boils above the boiling point of water, such as a Pluronic or other non-ionic alkylene oxide-hydrophobic base condensation product. The wetting agent provides proper release properties for the coating while retaining the coating as a generally smudge-free coating.

3,446,648
REACTIVE COPYING SHEET AND METHOD OF USING
Wesley R. Workman, St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
No Drawing. Filed Sept. 27, 1965, Ser. No. 490,662
Int. Cl. G03c 1/06
U.S. Cl. 117—36.8 5 Claims

Copy-sheets containing reducible silver soap and requiring an image toning agent for making intense blue-black images contain an acyl derivative of a toning agent and a weak organic acid, which slowly hydrolyzes to provide the required toning action.

3,446,649
DEVELOPING ELECTROSTATIC IMAGES WITH A LIQUID DEVELOPER
Karl-Heinz Degenhardt, Bad Schwalbach, and Gerhard Marx, Wiesbaden-Kastel, Germany, assignors, by mesne assignments, to Azoplate Corporation, Murray Hill, N.J.
Filed Sept. 3, 1964, Ser. No. 394,186
Claims priority, application Germany, Sept. 5, 1963, K 50,739
Int. Cl. B44d 1/18; B05b 5/02
U.S. Cl. 117—37 5 Claims



1. A process for developing an electrostatic image on the surface of a sheet of material comprising providing a liquid wetting developer dispenser carrying a supply of liquid wetting developer and including a thin elongated discharge duct defined between a pair of spaced boundary surfaces at least one of which is rigid and wherein liquid wetting developer is preventing by surface tension from running out through said duct except when said duct is adjacent an electrostatic field, passing a sheet of material in contact with said one rigid boundary surface and causing liquid developer to flow only onto those portions of the surface of the sheet having electrostatic charges thereon in a thin elongated area extending widthwise of the associated sheet, and moving said dispenser relative to the surface of said sheet so as to very quickly develop the entire electrostatic image on said sheet.

3,446,650
COATING MATERIAL AND METHOD OF APPLICATION
Richard L. Smith, Atlanta, Ga., assignor to Lockheed Aircraft Corporation, Los Angeles, Calif.
No Drawing. Filed Sept. 20, 1965, Ser. No. 488,739
Int. Cl. B05c 7/00; B44c 1/36
U.S. Cl. 117—62 17 Claims

The invention provides a microbial corrosion and penetration inhibiting coating for metal surfaces subject to contact by turbine fuels and other petroleum products which may contain incidental amounts of water and micro-organisms which subsist on the water and fuel and corrosively attack the metal surfaces, such microbial attack including the penetration of polymerized coatings of the metal surfaces if so coated. More specifically the invention provides a polymeric plastic, including polyurethane and Buna-N, containing in admixture a water soluble systemic toxin of an acid additive salt of rosaniline in which at least one substituted ethylamine group contains the cation of the salt, including brilliant green and malachite green.

3,446,651
PLASTIC FILM COATED WITH ANTISTATIC AGENT
Margaret C. Clachan, Patrick Terrence McGrail, and Basil R. Shephard, Essex, England, assignors to Bexford Limited, Essex, England, a British company
No Drawing. Filed Feb. 14, 1966, Ser. No. 527,046
Claims priority, application Great Britain, Feb. 18, 1965, 7,073/65
Int. Cl. B44d 1/16; B44 1/24
U.S. Cl. 117—73 10 Claims

An antistatic agent for plastic films obtained by reacting a polymer containing cyclic anhydride groups with a compound containing both phenolic and sulphonic groups. The treatment of plastic films by coating them with the antistatic agents is also disclosed.

3,446,652
CHLORINATED OXETANE POLYMER COATING
Lester W. Smith, 136 Park Blvd., Berwick, Pa. 18603
No Drawing. Filed May 11, 1964, Ser. No. 366,614
Int. Cl. B44d 1/16, 1/44; B05c 7/02
U.S. Cl. 117—75 5 Claims

A coating composition adapted for application to the interior of large vessels and railway tank cars comprises a dispersion of a finely divided chlorinated polyether polymer in an aqueous medium including water, a surfactant, and an ester of a polyhydric alcohol such as ethylene glycol diacetate; the composition may also include a lower aliphatic alcohol and a water softener. The composition is applied by maintaining the surface of the material to be coated above about 50° F., spraying the composition onto the surface and then drying and curing at a temperature between about 400° and 450° F., followed by cooling the coating.

3,446,653
METHOD FOR THE PRODUCTION OF SILICON OF HIGH PURITY

Konrad Reuschel, Pretzfeld, and Norbert Schink, Erlangen, Germany, assignors to Siemens Aktiengesellschaft, Erlangen, Germany, a corporation of Germany

No Drawing. Filed Oct. 21, 1965, Ser. No. 500,315
Claims priority, application Germany, Dec. 2, 1964, S 94,592
Int. Cl. B44d 1/18; C23c 13/00
U.S. Cl. 117—106 3 Claims

Described is an improved method of purifying monocrystalline silicon growing from a silicon melt, from a gaseous phase. The improvement comprises either adding at least one of the elements titanium, zirconium, hafnium, vanadium, niobium, tantalum, chromium, molybdenum or tungsten, in an amount of not more than 1 atom percent, to the silicon melt prior to growing the monocrystalline silicon or codepositing the element together with silicon when growing from a gaseous phase.

3,446,654
STRUCTURAL ELEMENTS COMPRISING ADHERENT THERMOPLASTIC POLYARYLENE POLYETHER AND AN ADHEREND AND METHOD FOR MAKING THE SAME

Bruce P. Barth, Bound Brook, and Edward G. Hendricks, Belle Mead, N.J., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Nov. 12, 1964, Ser. No. 410,778
Int. Cl. C03c 25/02; B44d 1/36; C04b 41/00
U.S. Cl. 117—123 20 Claims

Structural elements of an adherend and adhering thereto a linear thermoplastic polyarylene polyether of the —O—E—O—E'— type. Adherends include metals, vitreous materials, nonmetallic materials and resins among others.

3,446,655
METHOD OF PRODUCING REFRACTORY METAL ARTICLES

Geirionydd Llewelyn and Raymond George Ubank, Bristol, England, assignors to Bristol Siddeley Engines Limited, Bristol, England, a British company

No Drawing. Filed June 22, 1965, Ser. No. 466,113
Claims priority, application Great Britain, June 24, 1964, 24,103/64
Int. Cl. C23d 5/00; C23c 9/06
U.S. Cl. 117—129 9 Claims

A refractory article formed of a metallic material composed of at least 50% by weight of niobium or tantalum has its surface protected by a mixed metallic oxide glaze composed of 30% to 50% silicon, vanadium and/or manganese 5% to 25%, and at least three of the following: tantalum, niobium, tungsten, molybdenum, chromium, titanium, zirconium, aluminum, and boron.

3,446,656
ZIRCONIUM COMPOUNDS AS ALGAECIDES

Charles J. Conner, New Orleans, La., assignor to the United States of America as represented by the Secretary of Agriculture

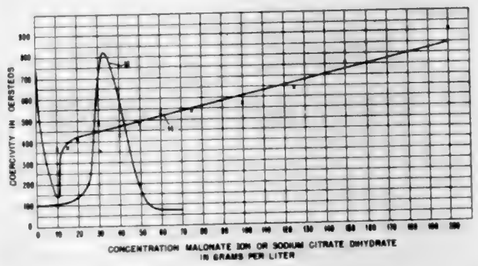
No Drawing. Filed Dec. 30, 1964, Ser. No. 422,462
Int. Cl. D06m 11/12
U.S. Cl. 117—138.5 1 Claim

Algecidal properties are imparted to cotton textiles by treatment with zirconyl acetate and zirconyl ammonium carbonate solutions which involves padding aqueous solutions containing 1.0 to 13.0% zirconia (ZrO_2) to give wet pickup values of about 40% to 60%. Little or no fungicidal activity is imparted by the process of this invention. The algecidal activity has been observed to be of at least one year duration.

3,446,657
COATING METHOD

William N. Dunlap, Jr., and Herman Koretzky, Poughkeepsie, and Harry D. McCabe, Wappingers Falls, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed June 18, 1964, Ser. No. 376,106
Int. Cl. G11b 5/62; C23c 3/02
U.S. Cl. 117—160 5 Claims



Magnetic cobalt films having controlled coercivity are provided by utilizing selected concentrations of malonate ions in electroless cobalt plating baths of the cobalt cation-hypophosphite anion type. By selecting the concentration of malonate ions, magnetic cobalt films having controlled coercivity within the range of about 350 to 900 oersteds are obtained.

3,446,658
FUSIBLE INTERLINING FABRIC

Harold Rose, 38, Wood Vale, London, N. 10, England

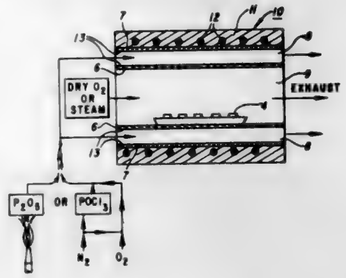
No Drawing. Filed Jan. 16, 1967, Ser. No. 609,499
Claims priority, application Great Britain, Jan. 27, 1966, 3,799/66
Int. Cl. C23d 5/04; C03c 1/00
U.S. Cl. 117—37 2 Claims

A fusible interlining material suitable for backing the whole front of a jacket comprising a base fabric having high denier resilient fibers in the weft yarns and carrying spaced dots of a gelled vinyl chloride/vinyl acetate copolymer fusible at temperatures below 175° C.

3,446,659
APPARATUS AND PROCESS FOR GROWING NONCONTAMINATED THERMAL OXIDE ON SILICON

Emery C. Wisman and John W. Kronlage, Richardson, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Sept. 16, 1966, Ser. No. 579,956
Int. Cl. B44d 1/00; H01b 1/04
U.S. Cl. 117—201 6 Claims



1. In a method of forming an oxide free of sodium contamination on a semiconductor substrate, the steps of:
(a) oxidizing said substrate in a furnace by heating it in an oxidizing chamber contained within said furnace, said chamber containing an oxidizing atmosphere, and
(b) separating said oxidizing chamber from the sodium-contaminated refractory insulating material of said furnace by a sodium gettering phosphorous gas whereby said gas getters sodium from both said insulating material and said oxidizing chamber.

3,446,660
HIGH TEMPERATURE MAGNET WIRE

Wesley W. Pendleton, Muskegon, Mich., assignor to Anaconda Wire and Cable Company, New York, N.Y., a corporation of Delaware

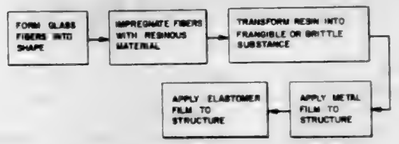
No Drawing. Continuation-in-part of application Ser. No. 173,115, Feb. 14, 1962. This application July 27, 1965, Ser. No. 475,273
Int. Cl. B44d 1/18, 1/30
U.S. Cl. 117—218 2 Claims

Abrasive resistance of high temperature magnet wires of the type provided with an insulation coating of organic varnish pigmented with finely divided glass can be substantially improved by coating thereon a layer of polyamide varnish to a thickness less than 0.3 mil. The polyamide coating is capable of pyrolytic decomposition at a high temperature without carbonaceous residue.

3,446,661
GLASS FABRIC STRUCTURE AND METHOD OF MAKING THE SAME

John W. Andersen, Northfield, Minn., assignor to G. T. Schjeldahl Company, Northfield, Minn., a corporation of Minnesota

Filed Jan. 22, 1964, Ser. No. 339,482
Int. Cl. B44d 1/18; B32b 17/02; G01s 17/00
U.S. Cl. 117—227 6 Claims



An improved fabric structure prepared from bundles of glass filaments bonded together with a frangible binding substance, the binding substance being present in the bundles or fibers within the interstices between the filaments forming said bundles. This improved fabric is thereafter coated with a film of an electrically conductive material, preferably metallic, in order to render structures formed therefrom electrically conductive, and particularly adaptable for use as communications satellites.

3,446,662
TRANSFER ELEMENT CONTAINING INFRARED RADIATION ABSORBING MATERIAL

Douglas A. Newman, Glen Cove, N.Y., assignor to Columbia Ribbon and Carbon Manufacturing Co., Inc., Glen Cove, N.Y., a corporation of New York

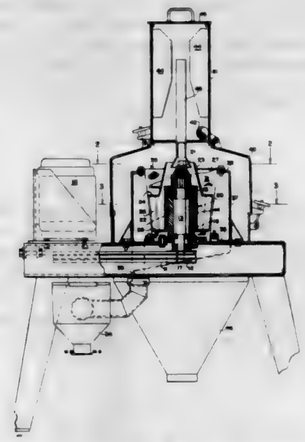
No Drawing. Filed Jan. 27, 1966, Ser. No. 523,266
Int. Cl. B41j 31/08; C08f 45/14
U.S. Cl. 117—36.1 6 Claims

Transfer elements of the squeeze-out type comprising a porous resin structure containing pressure-exudable ink within the pores thereof. The ink comprises an oleaginous vehicle and coloring matter and the vehicle is rendered infrared radiation-absorbing by having dissolved therein an infrared radiation-absorbing chemical.

3,446,663
SEPARATING DEVICE

Ignacio Araguren Castiello, Guadalajara, Jalisco, and Octavia Vasquez Sierra and Jay E. Olnick, Mexico City, Mexico, assignors to Union Starch & Refining Co., Inc., Columbus, Ind., a corporation of Indiana, and Aranguren y Cia., S.A., Guadalajara, Jalisco, Mexico, a corporation of Mexico

Filed Apr. 22, 1965, Ser. No. 449,972
Int. Cl. C13l 1/00; B07b 1/20
U.S. Cl. 127—25 4 Claims

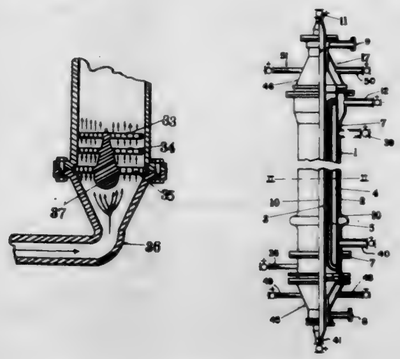


A centrifugal separator for fiber-starch-water slurries is provided wherein the slurry is fed into the central portion of a rotary member, passes tangentially outwardly through rotating vanes and impinges against a stationary upwardly diverging frustoconical screen. The water and fine material, such as starch, passes through the screen while the larger material, such as fiber, passes up along the diverging inner surface of the screen for separate collection.

3,446,664
CONVERTER FOR CONTINUOUS ACID-SACCHARIFICATION OF STARCH

Yoshiaki Komai, Zenichi Yoshino, Yasunobu Miyazaki, Shigeru Uematsu, and Keiji Mifune, Tokushima, Japan, assignors to Nippon Shiryo Kogyo Co., Ltd., Tokushima, Japan

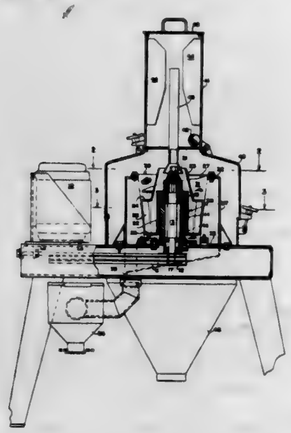
Filed Sept. 28, 1965, Ser. No. 490,977
Claims priority, application Japan, Oct. 22, 1964, 39/59,995; Aug. 21, 1965, 40/51,153
Int. Cl. C13l 1/08
U.S. Cl. 127—28 1 Claim



A converter for continuous acid-saccharification of starch. A vertical multi-tube heat exchanger is connected to a plurality of parallel and vertical reaction tubes by

three-way cocks and connecting pipes for easily altering the routing of the flow through said reaction tubes. A plurality of groups of rectifying plates, each having a plurality of small orifices, are positioned in said reaction tubes with a group at both ends thereof. A teardrop-shaped rod extends through the center of each plate in a group and supports the plates spaced from each other. The heat exchanger consists of a central steam heating pipe, a cylindrical wall around said central pipe and defining an annular heating chamber around said central pipe, a steam jacket surrounding said cylindrical wall, a plurality of small cross section steam tubes in said annular heating chamber and extending along the length thereof and offering minimum friction to flow through said chamber. The ends of said steam tubes open through said cylindrical wall into said steam jacket.

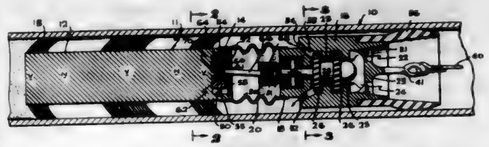
3,446,665
FIBER RECOVERY PROCESS
Ignacio Aranguren Castiello, Guadalajara, Jalisco, and Octavio Vasquez Sierra and Jay E. Olnick, Mexico City, Mexico, assignors to Union Starch & Refining Co., Inc., Columbus, Ind., a corporation of Indiana and Aranguren y Cia, S.A., Guadalajara, Jalisco, Mexico, a corporation of Mexico
Filed Apr. 22, 1965, Ser. No. 449,990
Int. Cl. C13l *1/00;* **B07b** *1/20*
U.S. Cl. 127—67 **3 Claims**



Fibers can be separated from agglomerates in which they are embedded, such as ground corn, by passing an equeous dispersion of the fiber-agglomerate through several stages of separation apparatus wherein in each stage the aqueous dispersion is forcibly propelled tangentially against on upwardly diverging frusto-conical screen whereby the liquid and particles of embedding material pass through the screen to form a filtrate and the fiber-containing residue moves upwardly along the screen for collection. The filtrate from a given separation stage can be recycled and used to form part of the aqueous dispersion input to a preceding separation stage.

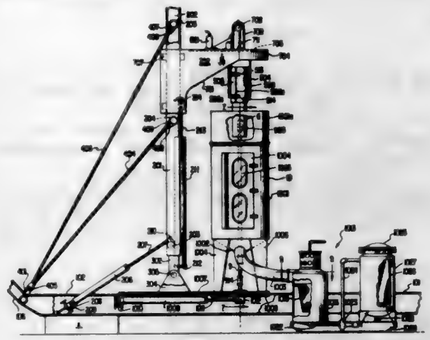
3,446,666
SONIC PROCESS AND APPARATUS FOR CLEANING PIPES
Albert G. Bodine, Los Angeles, Calif. (7877 Woodley Ave., Van Nuys, Calif. 91406)
Filed Aug. 29, 1966, Ser. No. 575,707
Int. Cl. B08b *9/02, 3/10*
U.S. Cl. 134—1 **10 Claims**

An elastic rod member having a plurality of bristles extending therefrom is placed within a pipe to be cleaned. The elastic rod member is set into a mode of resonant standing wave vibration by means of a vibration generator, the high level sonic energy thus developed acting to



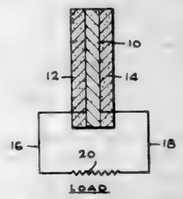
loosen and remove dirt and other encrustations from the surfaces of the pipe.

3,446,667
METHOD FOR REMOVING MATERIAL FROM THE INTERIOR OF ARTICLES
R. E. Moeller, Robert G. Love, and Forrest C. Pittman, Duncan, Okla., assignors to Halliburton Company, Duncan, Okla., a corporation of Delaware
Original application Sept. 22, 1964, Ser. No. 398,267, now Patent No. 3,270,754, dated Sept. 6, 1966. Divided and this application Feb. 25, 1966, Ser. No. 563,307
Int. Cl. B08b *3/02, 9/18*
U.S. Cl. 134—23 **3 Claims**



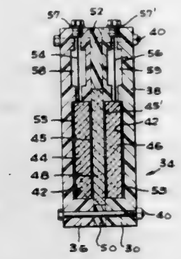
Method for removing material from the interior of open-ended articles entailing the lowering of the article over a probe from which material-removing jets are issuing. The article is lowered so that the jets cut a series of circumferentially spaced, generally vertically extending channels. Subsequent to the forming of the vertical channels, the article is rotated so that the jets cut through the material generally transversely of the vertically extending channels.

3,446,668
INORGANIC BATTERY SEPARATOR AND BATTERY
Frank C. Arrance, Costa Mesa, and Carl Berger, Santa Ana, Calif., assignors, by mesne assignments, to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland
Filed Apr. 1, 1966, Ser. No. 539,554
Int. Cl. H01m *3/02*
U.S. Cl. 136—6 **16 Claims**



Battery separator in the form of a sintered porous member consisting essentially of a solid solution of magnesium silicate and a member selected from the group consisting of zinc silicate and iron silicate, for use particularly in high-energy density batteries; and a battery comprising a pair of electrodes of opposite polarity, said separator being positioned between said electrodes.

3,446,669
SINTERED METAL OXIDE BATTERY SEPARATOR AND BATTERY
Frank C. Arrance, Costa Mesa, and Carl Berger, Santa Ana, Calif., assignors, by mesne assignments, to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland
Filed June 7, 1966, Ser. No. 555,891
Int. Cl. H01m *35/04*
U.S. Cl. 136—6 **20 Claims**



Production of battery separators having improved strength and resistance to alkali, good porosity and conductivity, and improved resistance to impact and vibration, and particularly designed for use in high energy density batteries, in the form of a sintered porous member consisting essentially of a solid solution of a major proportion of an aluminum-bearing material, such as aluminum oxide, and a substance selected from the group consisting of chromium, cobalt, nickel, magnesium, calcium and iron-bearing materials, such as chromic oxide.

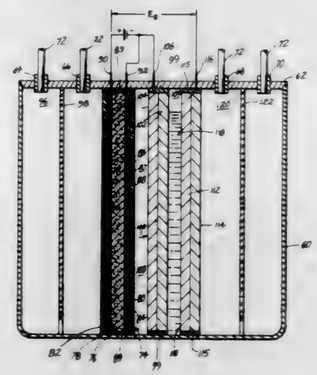
3,446,670
STORAGE BATTERY INCLUDING PASTE OF LEAD OXIDE AND LIGNIN
Carl O. Schilling, Joplin, Mo., assignor to Eagle-Picher Industries, Inc., Cincinnati, Ohio
No Drawing. Filed Nov. 1, 1966, Ser. No. 591,086
Int. Cl. H01m *39/04, 41/00*
U.S. Cl. 136—26 **5 Claims**

Lignin gives improved battery operation when added to lead oxide paste used in the manufacture of positive plates for dry charge storage batteries of the lead acid type. The preferred additive embodiment is a sodium lignosulfonate present in an amount equivalent to about 0.05% to about 0.3% by weight of the lead oxide paste. This additive to the positive plate composition improves the low temperature, i.e., below 32° F., activation characteristics of dry charge storage batteries.

3,446,671
FUEL CELL EMPLOYING AN ACIDIC CATHOLYTE CONTAINING HYDROGEN PEROXIDE AND A PYROPHOSPHATE
Elbert V. Kring, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Feb. 25, 1963, Ser. No. 260,497
Int. Cl. H01m *27/00*
U.S. Cl. 136—86 **3 Claims**

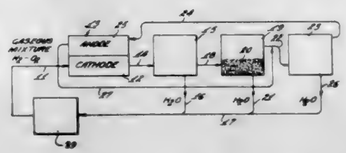
1. In a fuel cell, the combination of an acidic catholyte having hydrogen peroxide dissolved therein and an acidic anolyte having a fuel dissolved therein, said catholyte and anolyte being separated by a cation exchange resin membrane, and said catholyte being a 0.1 to 10 molar aqueous solution of sulfuric acid or phosphoric acid containing dissolved therein hydrogen peroxide at a concentration of 0.01 to 20 molar and pyrophosphoric acid or an alkali metal salt thereof at a concentration corresponding to at least 0.002 mol per mol of said hydrogen peroxide.

3,446,672
METHOD AND APPARATUS FOR CONVERTING HYDROGEN-CONTAINING FEEDSTOCKS INTO ELECTRICAL ENERGY
José D. Giner, Glastonbury, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed July 7, 1965, Ser. No. 470,022
Int. Cl. H01m *27/06*
U.S. Cl. 136—86 **10 Claims**



There is disclosed an electrochemical converter having a housing with a matrix member therein formed of absorbent, porous material and containing an electrolyte providing an ionic path therethrough. A porous anode having a dehydrogenation catalyst in the pores thereof is firmly pressed against one side of the matrix member and a cathode is firmly pressed against the other side thereof with a power supply being connected therebetween.

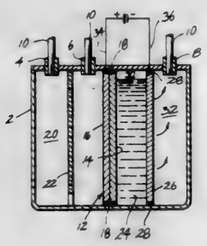
3,446,673
H_2O_2 FUEL CELL AND METHOD OF PRODUCING ELECTRICAL ENERGY
Jean P. Manion, Milwaukee, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Continuation-in-part of application Ser. No. 198,831, May 31, 1962. This application Aug. 30, 1965, Ser. No. 492,962
Int. Cl. H01m *27/30*
U.S. Cl. 136—86 **15 Claims**



15. Process for converting into electricity the chemical energy contained in a hydrogen-oxygen mixture comprising passing the hydrogen-oxygen mixture to the oxygen electrode of a fuel cell which is free of catalysts for the chemical conversion of H_2–O_2 and thereby removing a substantial portion of the oxygen from said mixture by

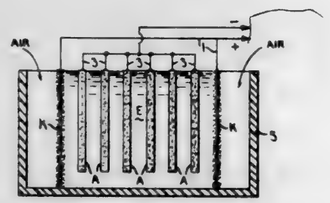
ionization, and thereafter passing the thus oxygen-depleted mixture in contact with the hydrogen electrode of said fuel cell.

3,446,674
METHOD AND APPARATUS FOR CONVERTING HYDROGEN-CONTAINING FEEDSTOCKS
Jose D. Giner, Glastonbury, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed July 7, 1965, Ser. No. 470,096
Int. Cl. H01m 27/06
U.S. Cl. 136—86 **18 Claims**



There is disclosed an electrochemical converter which is a part of a fuel cell assembly wherein a cathode member is spaced to the opposite side of the cathode membrane from said anode and an electrolyte is provided therebetween. An external circuit connected to a load is provided between the anode and the cathode member to provide current flow therebetween as a result of the oxidation-reduction reaction occurring within the cell assembly. A power source is connected between the cathode membrane and either the cathode member or the anode with the cathode membrane being the cathode in the secondary circuit to produce electron flow thereinto and compensate for any leak in the system.

3,446,675
ELECTROCHEMICAL POWER SUPPLY
Ernest M. Jost, Plainville, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Mar. 18, 1966, Ser. No. 535,452
Int. Cl. H01m 27/22, 29/02
U.S. Cl. 136—86 **13 Claims**



A rechargeable high energy density electrochemical power supply having an electrically conductive cathode, a body of an aqueous electrolyte, and an electrically conductive porous anode. The total projected area of the anode in contact with the electrolyte is at least equal to the total projected area of the cathode in contact with the electrolyte. The total developed area of the anode in contact with the electrolyte is at least approximately ten times that of the cathode in contact with the electrolyte.

3,446,676
SOLAR BATTERY WITH INTERCONNECTING MEANS FOR PLURAL CELLS
James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Donald W. Ritchie, Sepulveda, and John V. Goldsmith, Montrose, Calif.
Filed Sept. 7, 1966, Ser. No. 577,778
Int. Cl. H01l 15/04
U.S. Cl. 136—89 **19 Claims**



A large solar sensitive area for a solar battery is provided by grouping a plurality of individual solar cells in side by side juxtaposed relationship on a flat insulative substrate. Electrical conductive members include a plurality of tynes which project through the insulative substrate and are mechanically biased against the surface of the solar cells so as to hold them in place on the substrate. The tynes of each electrical conductive member are electrically connected to the solar cells they contact in order to form an electrical parallel circuit. Certain electrically conductive members are further electrically connected to additional solar cells so as to form series electrical circuits for the appropriate solar cells. The series electrical circuits provide required voltages from the solar battery; whereas, the parallel electrical circuits provide required electrical current from the solar battery.

3,446,677
METHOD OF MAKING A SOLID IONIC CONDUCTOR
Gerald J. Tennenhouse, Oak Park, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Nov. 21, 1966, Ser. No. 595,702
Int. Cl. H01m 43/06; C03c 17/00; C04b 35/42
U.S. Cl. 136—153 **5 Claims**

1. An improved method for substituting potassium ions for sodium ions in a crystalline structure comprising a structural lattice and sodium ions which migrate in relation to said lattice under influence of an electric field, at least a major proportion of said lattice consisting of ions of aluminum and oxygen in crystal lattice combination, said method comprising heating said crystalline structure to a temperature in excess of about 900° C. contacting said structure with a source of potassium ion heated to a temperature above about 900° C. and essentially equal to the temperature of said crystalline structure, and maintaining said structure and said source of potassium ion at a temperature above about 900° C. until at least about 50% of the sodium ions in said structure are replaced by potassium ions.

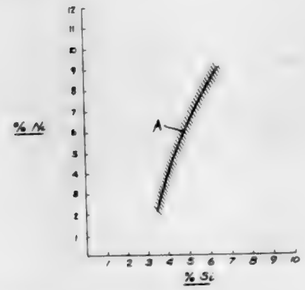
3,446,678
PROCESS FOR HEAT WORKING METALS
Hans Messer, Konigstein, Taunus, Germany, assignor to Messer Griesheim GmbH, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed July 8, 1966, Ser. No. 563,718
Claims priority, application Germany, July 17, 1965, M 66,005
Int. Cl. B23k 7/08
U.S. Cl. 148—9 **3 Claims**

1. In a process for heat working metal pieces, said process including mixing acetylene gas with another gas to form a working gas mixture and applying the working gas mixture against the workpieces to effect the heat working thereof, the improvement comprising mixing argon with the acetate to form the working gas mixture.

3,446,679
DISPERSION-STRENGTHENED NICKEL-CHROMIUM FOIL
Harold G. Marsh, Severna Park, Md., assignor, by mesne assignments, to Fansteel Metallurgical Corporation, a corporation of New York
No Drawing. Filed June 30, 1966, Ser. No. 561,713
Int. Cl. C21d 9/00; B22f 3/16, 3/24
U.S. Cl. 148—11.5 **4 Claims**

1. A dispersion-hardened nickel-chromium foil comprising nickel and about 10 to 30% by weight of chromium, said metal having pervasively dispersed therein about from 0.1 to 6% by volume of particles of a refractory metal oxide having a free energy of formation at 1000° C. greater than about 100 kilocalories per gram atom of oxygen and an average particle size less than about 80 millimicrons, said foil being less than 0.010 inch thick and characterized by good room temperature ductility and high temperature strength, and by having both (a) elongated grains having a length-to-thickness ratio greater than about 2 and a grain thickness in the range of about from 15 to 200 microns and (b) equiaxed grains having an average thickness of about from 10 to 80 microns, said equiaxed grains having annealing twins.

3,446,680
PRODUCTION OF GRAIN-ORIENTED SILICON STEELS
Charles Alfred Clark, Edgware, Ronald John Butt, Alvaston, and John Jefferson Mason, Willenhall, England, assignors to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware
Continuation-in-part of application Ser. No. 477,688, Aug. 6, 1965. This application June 20, 1968, Ser. No. 738,486
Claims priority, application Great Britain, Aug. 7, 1964, 32,246/64
Int. Cl. C22c 37/44
U.S. Cl. 148—112 **6 Claims**

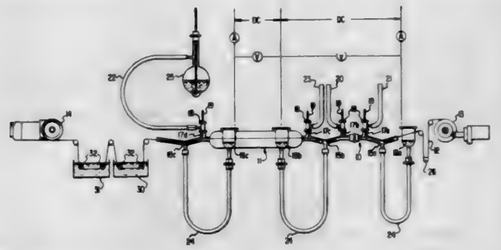


A "method" of producing Goss texture in a steel sheet containing from 3.5% to 6.5% silicon, from 2% to 12% nickel, the nickel being present in an amount sufficient to render the steel rollable at 100° C. and being correlated with the silicon content, such that as the silicon is increased from 3.5% the amount of nickel is increased to 2%, from 0.02% to 0.06% carbon, and from 0.05% to 0.3% vanadium, the balance being iron except for impurities, which comprises effecting secondary recrystallization in the steel by heating it at a temperature below that of the transformation point of alpha iron to alpha plus gamma iron. The secondary recrystallization treatment also effects at least substantial decomposition of the precipitated vanadium carbides. Said treatment may be carried out in an atmosphere of wet hydrogen.

3,446,681
GELLED SLURRY EXPLOSIVE COMPOSITION CONTAINING A TERPOLYMER GELLING AGENT
Thomas E. Slykhouse and Kenneth E. Werth, Midland, and Henry Volk, Bay City, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Apr. 18, 1968, Ser. No. 722,175
Int. Cl. C06b 1/04, 15/00
U.S. Cl. 149—41 **13 Claims**

An improvement in gelled slurry explosive compositions which comprises employing as a gelling agent a terpolymer consisting of an acrylamide, an acrylonitrile and an acrylic acid, said gelling agent being crosslinked if desired with an inorganic polyvalent metal salt.

3,446,682
METHOD OF MAKING HIGH STRENGTH REFRACTORY FILAMENTS
Franklin E. Wawner, Jr., Hopewell, Va., assignor to Texaco Experiment Incorporated, Richmond, Va., a corporation of Virginia
Filed May 4, 1965, Ser. No. 453,160
Int. Cl. C23f 1/00
U.S. Cl. 156—3 **2 Claims**



Increasing the strength of filaments having a boron-containing surface structure by treating the filaments with aqueous nitric acid until at least about 0.5 mil has been removed from the surface of the filaments.

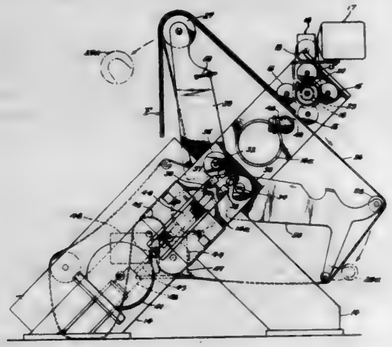
3,446,683
METHOD OF TRANSFERRING AND FIRING VISIBLE DESIGNS
Lloyd L. Dean, 12 Old Mamaroneck Road, White Plains, N.Y. 10605
No Drawing. Filed Aug. 11, 1965, Ser. No. 479,013
Int. Cl. C04b 41/32
U.S. Cl. 156—89 **6 Claims**

This invention relates to the transferring and firing of visible designs wherein a visible design, which upon burning becomes invisible, is transferred from a transfer sheet onto the surface of a fire resistant object to form an outline for coloring on the object, and, after coloring about the design on the object with fire resistant coloring matter, the object is fired so as to burn off the outline design and cause the same to disappear.

3,446,684
METHOD AND APPARATUS FOR FORMING TUBULAR FIBROUS INSULATING ARTICLES
David B. Pall, Roslyn Estates, and Robert Earle Belfield, East Islip, N.Y., David J. Roseberg, Mountaintop, Pa., and Arthur C. Vogel, Glen Cove, N.Y., assignors to Certain-Teed Saint Gobain Insulation Corporation, a corporation of Maryland
Filed Mar. 24, 1965, Ser. No. 442,441
Int. Cl. B32b 31/00; B65h 81/00
U.S. Cl. 156—184 **34 Claims**

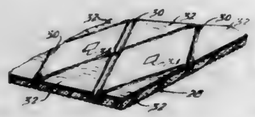
Equipment and method for forming tubular fibrous insulation articles, including a mandrel, means for rota-

tively mounting the mandrel in a mandrel station in which fibrous blanket material incorporating a heat settable fiber binder is fed from a supply source and is wrapped upon the mandrel and after a plurality of layers are applied, the wrapped material is severed from the supply source. The article is formed on the mandrel by means



of an endless conveyor belt having a re-entrant loop surrounding a large part of the periphery of the mandrel, and heat to set the fiber binder is applied by passing heated gas through the mandrel and radially outwardly through the mandrel perforations and thence through the fibrous material, and also by heating the conveyor belt.

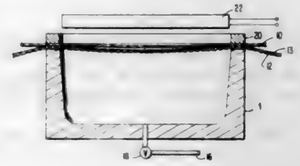
3,446,685
TRIM PANEL AND METHOD OF MAKING SAME
Edward G. Goldstone, Huntington Woods, Hans K. Neumann, Detroit, and John A. Olsen, Grosse Point Woods, Mich., assignors to Allen Industries, Inc., Detroit, Mich., a corporation of Delaware
Filed Aug. 13, 1965, Ser. No. 479,378
Int. Cl. B32b *31/12*
U.S. Cl. 156—219 **4 Claims**



A method for forming a composite decorative trim material consisting of a resilient pad and a decorative face sheet adhesively bonded thereto over substantially the entire surface thereof. The panel is provided with a preselected shape-retaining contour achieved by the combination of internal vapor pressure and external suction and a preselected texturing of the exterior surface of the face sheet is simultaneously accomplished in the contouring and bonding operation.

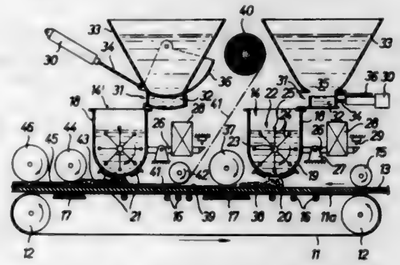
3,446,686
METHOD IN LAMINATING REINFORCED SHEET
Eugene B. Butler, Kent, Donald R. Cardis, Barberton, and Harold P. Schick, Tallmadge, Ohio, assignors to The General Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed July 29, 1964, Ser. No. 385,901
Int. Cl. B29c *17/04;* **B32b** *1/02*
U.S. Cl. 156—224 **3 Claims**

Shaped sections of fabric-backed plastic material, e.g., vinyl sheets backed with knit fabric, are formed by coating a face of a section of fabric with an adhesive, plying a sheet of plastic material to the adhesive coated surface of the fabric, clamping the plied sheet and fabric around the edges in a mold with the fabric in a tensilely relaxed condition and applying fluid pressure to the ex-



posed face of the plastic sheet to conform the plied materials to the shape of the mold and simultaneously laminate the plastic sheet to the fabric.

3,446,687
APPARATUS FOR LAMINATING AND COATING INSULATING PANELS
Karl Kurz, Bad Waldsee, Wurttemberg, Germany, assignor to Sudbau Suddeutsche Bautechnik G.m.b.H., Bad Waldsee, Wurttemberg, Germany
Original application May 15, 1963, Ser. No. 280,549. Divided and this application Aug. 27, 1965, Ser. No. 493,956
Claims priority, application Germany, May 18, 1962, S 84,578
Int. Cl. B05c *9/00;* **B32b** *31/04*
U.S. Cl. 156—390 **2 Claims**

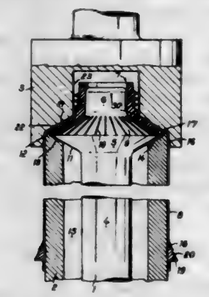


A device for the production of hard resilient load-bearing insulating plates including an endless conveyor belt, a pair of troughs for applying the coating to the base plate, the troughs having openings in the bottom with means for opening and closing the openings, an agitator in each of the troughs and a balance means for keeping the troughs at a preset distance from the belt. A combination smoothing and compressing roll which rotates about its axis and also reciprocates longitudinally thereof is placed immediately following each trough. Means are also provided to dispense a fabric between the first layer of plastic material and the final layer thereof.

3,446,688
APPARATUS FOR SPIN WELDING A THERMOPLASTIC ENDPIECE TO AN OPEN-ENDED THERMOPLASTIC TUBULAR BODY
Valer Flax, Vic-Fezensac, Gers, France
Filed Nov. 20, 1964, Ser. No. 412,797
Claims priority, application France, Nov. 21, 1963, 954,606; Feb. 28, 1964, 965,552; May 8, 1964, 973,691; Oct. 22, 1964, 992,235
Int. Cl. B29c *27/08*
U.S. Cl. 156—423 **8 Claims**

In making a packaging tube by welding a preformed endpiece to one end of a tubular body, both parts being of thermoplastic material, this disclosure teaches generating welding heat by means of friction between the contacting surfaces at the parts to be joined. The two parts are pressed axially together and, while one part is

held stationary, the other is rapidly rotated about the axis of the parts. After a time sufficient for the heat to pro-



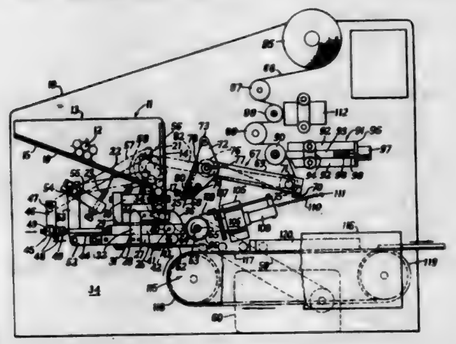
duce local fusion of the thermoplastic material, the rotation is stopped. Axial pressure between the parts is maintained until they have welded together.

3,446,689
APPARATUS FOR THE MANUFACTURE OF PLASTIC PIPES
Frederik W. Storm van Leeuwen, Jan C. van Dijk, and Johan C. Hoogeveen, Delft, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Dec. 9, 1964, Ser. No. 417,053
Claims priority, application Netherlands, Dec. 23, 1963, 302,457
Int. Cl. B65h *81/00;* **B65c** *3/26*
U.S. Cl. 156—432 **3 Claims**



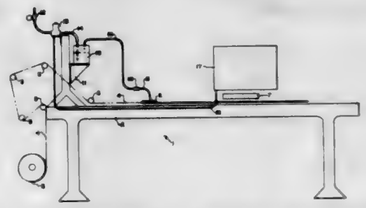
Reinforced plastic pipes are continuously manufactured without the aid of a mandrel by inflating a tubular plastic film with air and applying alternate layers of helically wound and axially oriented resin-impregnated glass fibers.

3,446,690
APPARATUS FOR APPLYING PRESSURE-SENSITIVE LABELS TO CYLINDRICAL ARTICLES
George K. Charles, Guildford, England, assignor to Cow & Gate Limited, Guildford, England
Filed Oct. 22, 1965, Ser. No. 500,642
Int. Cl. B65c *3/12, 9/02*
U.S. Cl. 156—446 **12 Claims**



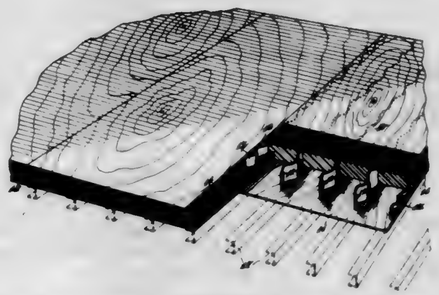
Three parallel rollers are provided for receiving a cylindrical article therebetween. Feed means is adapted to feed the article into the space between the rollers. At least one of the rollers is movable to clamp the article between the rollers, and one of the rollers is rotated to cause rotation of the clamped article. Means is also provided for feeding the end of a label between the rotating roller and the article, with the adhesive side of the label in contact with the article so that the label is wound onto the article.

3,446,691
APPARATUS FOR FORMING, HEAT SEALING, AND INTRODUCING ANTI-BLOCKING POWDER INTO PLASTIC TUBES
John Mundle, Toronto, Ontario, Canada, assignor to Tee-Pak of Canada, Limited, Toronto, Ontario, Canada, a corporation of Canada
Filed Oct. 21, 1965, Ser. No. 499,534
Int. Cl. B29d *23/10*
U.S. Cl. 156—466 **3 Claims**



An improved apparatus for forming plastic film into tubular form which includes a forming plate, means to feed plastic film and fold the same around said plate to form a longitudinally extending lap joint, and means to form a heat seal in said lapped joint, includes one or more conduits extending along the forming plate and arranged to conduct an anti-blocking powder past the forming plate to introduce said powder within the formed plastic tube beyond the heat sealing means.

3,446,692
INSULATED PANEL AND METHOD OF MAKING SAME
Donald M. Turnbull, Cincinnati, Ohio, assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed June 1, 1964, Ser. No. 371,450
Int. Cl. E04b *5/43;* **B32b** *31/06, 27/40*
U.S. Cl. 161—69 **6 Claims**



A panel construction comprising a plurality of longitudinally spaced transverse frame members, a panel mounted on said transverse frame members, said panel having two spaced parallel planar sheets and a plurality of thin spaced apart elongated strips of material disposed perpendicularly to and between said sheets and having edges in engagement with the surfaces of said sheets, and plastic foamed-in-place in the remaining spaces between said sheets and the strips re-inforcing said strips providing for acceptance of greater compressive loading

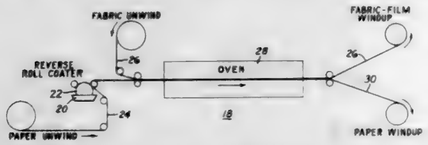
in planes passing through the depth of the strips between the sheets, the axis of columnar growth in the cells of said foam plastic being generally parallel to the length of said elongated strips, substantially each of said strips being in upright position over a respective transverse frame member with the length of the strip extending lengthwise along the length of the transverse frame member for directing compressive loads on the panel to the transverse frame members.

3,446,693

BREATHABLE POLYVINYL CHLORIDE MATERIAL AND METHOD OF MAKING SAME

Robert L. Alig and George Rappaport, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Dec. 16, 1965, Ser. No. 514,249
Int. Cl. B32b *27/30, 3/26, 5/18*
U.S. Cl. 161—160 20 Claims



A breathable vinyl resin sheet material formed by incorporating in a vinyl plastisol a blowing agent mixture including hydrated sodium borate and silica hydrogel and optionally, sodium bicarbonate, sheeting the plastisol mixture and heating the material to cause an evolution of gases from the blowing agents for creating interconnecting voids in the sheet material and to fuse the plastisol into a breathable sheet.

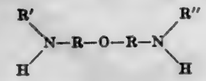
3,446,694

NON-DISCOLORING COMPOSITE POLYURETHANE FOAM AND SKIN-FORMING MATERIAL

John D. Hoskinson, Cuyahoga Falls, and Monte H. York, Akron, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Jan. 3, 1966, Ser. No. 517,925
Int. Cl. B32b *27/40, 5/18, 3/26*
U.S. Cl. 161—160 5 Claims

1. A composite comprising a first material selected from the class consisting of a plasticized polyvinyl chloride and a terpolymer of acrylonitrile, styrene and a conjugated diene having 4 to 8 carbon atoms in contiguous relationship with polyurethane foam, said polyurethane foam consisting essentially of the reaction product of a reactive hydrogen containing material of at least about 600 molecular weight, an organic polyisocyanate, a foam effecting agent and a catalyst having the formula



where R is alkylene radical containing from 2 to about 10 carbon atoms and R′ and R″ are alkyl radicals containing from 1 to about 10 carbon atoms.

3,446,695

VANADIUM-ZINC BORATE SOLDER GLASSES

Bhogaraju V. Janakirama-Rao, Toledo, Ohio, assignor to Owens Illinois, Inc., a corporation of Ohio

Filed Oct. 3, 1966, Ser. No. 583,799
Int. Cl. B32b *17/06, 15/04*
U.S. Cl. 161—192 11 Claims

1. A vitreous solder glass composition wherein said glass consists essentially of 5 to 30 weight percent V_2O_5, 20 to 40 weight percent B_2O_3, 40 to 60 weight percent ZnO, 1 to 10 weight percent CuO, 0 to 7.5 weight percent PbO, 0 to 10 weight percent SiO_2, 0 to 10 weight percent Al_2O_3, and 0 to 0.2 weight percent PbF_2 and wherein said solder glass composition having a fiber softening point temperature of 525 to 575° C., and coefficient of thermal expansion of 40 to 50×10^{-7} (0–300° C.).

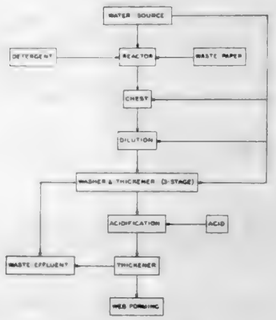
8. A vitreous solder glass composition wherein said glass consists essentially of 5 to 30 weight percent V_2O_5, 20 to 40 weight percent B_2O_3, 40 to 60 weight percent ZnO and 1 to 7.5 weight percent PbO and wherein said glass has a fiber softening point of 525 to 575° C., and a coefficient of expansion of 40 to 50×10^{-7} (0–300° C.).

3,446,696

METHOD OF DE-INKING WITH A NON-IONIC DETERGENT

Robert H. Illingworth, Madison, N.J., assignor, by mesne assignments, to Evening News Publishing Company, Newark, N.J., a corporation of New Jersey

Continuation-in-part of applications Ser. No. 84,908, Jan. 25, 1961, Ser. No. 95,722, Mar. 14, 1961, and Ser. No. 95,723, Mar. 14, 1961. This application May 9, 1962, Ser. No. 193,448
Int. Cl. D21c *5/02, 3/20*
U.S. Cl. 162—5 32 Claims



21. The process of separating the cellulosic fibers of printed paper from the ink therein contained which comprises the step of adding said separated printed paper in substantially dry form to a solution of water and approximately 0.25 to 2.5% of a water soluble non-ionic surface active agent at a temperature of from about 90° to 140° F., forming a slurry thereby of from about 4% to 6% solids, substantially immediately agitating said slurry sufficiently to reduce said paper substantially to individual fibers, removing said fibers from said solution, and washing said fibers.

3,446,697

METHOD OF IMPROVING THE DRAINAGE PROPERTIES OF HIGH BARK CONTENT WOOD PULP IN THE MAKING OF FIBERBOARD

Folke N. Alvang, Alfredshem, and Kurt A. Nordgren, Ornskoldsvik, Sweden, assignors to Mo Och Domsjo Aktiebolag, Ornskoldsvik, Sweden, a corporation of Sweden

Filed Feb. 23, 1965, Ser. No. 434,309
Claims priority, application Sweden, Mar. 10, 1964, 2,984/64
Int. Cl. D21j *1/00*; D21b *1/30*
U.S. Cl. 162—17 11 Claims

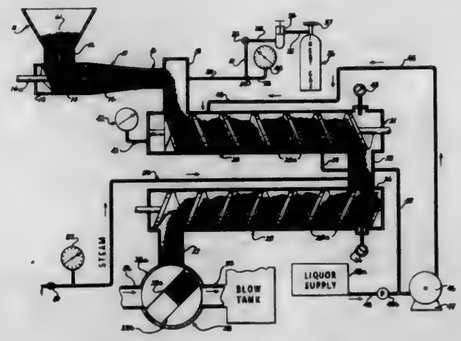
This invention provides a process for treating high bark-content pulp used in the manufacture of fiberboard from fibrous raw material to improve the drainage properties of the defibrated fibrous materials, by heat treating the defibrated fibers at a temperature of from about 60 to about 300° C. until the solids content of the fibrous material is within the range from about 30 to about 80 weight percent, and the drainage properties of the fibrous material after dilution with water for sheet formation are improved at least five defibrator seconds.

3,446,698

METHOD OF IMPREGNATING AND DIGESTING CELLULOSIC MATERIALS IN A HORIZONTAL DIGESTOR

Philip E. Shick, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio

Filed June 1, 1965, Ser. No. 460,371
Int. Cl. D21c *7/00*
U.S. Cl. 162—19 2 Claims



This invention relates to a process for continuously digesting wood chips wherein two connected treating zones are utilized. In the first zone, the wood chips are impregnated with a digesting liquor. Likewise, the first zone contains, in addition to the chips and the digested liquid, a non-condensed gas, said non-condensed gas generally keeping the temperature of said reaction zone such that effective impregnation of the chips with the digesting liquor is possible. Under impregnation, the chips are then passed to a second zone, the chips and digesting liquor are exposed to steam in such a fashion that the temperature is caused to rise to a point where digestion is effected. The atmosphere of the first zone essentially comprises a non-condensed gas, while the atmosphere of the second zone comprises essentially steam.

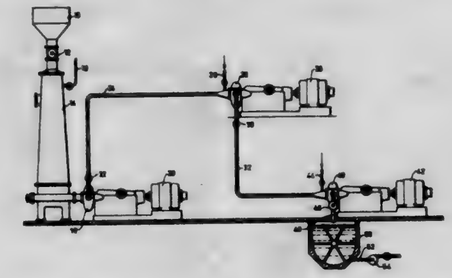
3,446,699

METHOD OF PRODUCING PULPS FROM LIGNOCELLULOSE CONTAINING MATERIALS

Arne Johan Arthur Asplund and Rolf Bertil Reinhall, Lidingo, Sweden, assignors to Defibrator Aktiebolag, Stockholm, Sweden, a corporation of Sweden

Continuation of application Ser. No. 356,124, Mar. 31, 1964. This application Feb. 1, 1968, Ser. No. 702,483
Claims priority, application Sweden, Apr. 3, 1963, 3,682/63
Int. Cl. D21c *3/26, 3/12*
U.S. Cl. 162—19 2 Claims

This invention provides a method of producing mechanical and chemo-mechanical or semichemical pulp from lignocellulose containing material. The continuous method of this invention includes the digesting of the material in the presence of sodium sulfite at a temperature of between 140–240° C. at a superatmospheric pressure. The digested material is defibrated in an atmosphere of steam under substantially the same superatmospheric pressure and temperature prevailing in the digester. At least two successive refining zones are provided after the defibrating step. Progressively decreasing superatmospheric pressures are established and maintained in respective successive refining zones after the said defibrating zone. This causes the defibrated pulp to move from the defibrating zone to and through the successive refining zones. A diluting liquid is introduced into the system before each successive zone. This diluting liquid has a temperature below that prevailing in each preceding stage of the operation to gradually reduce the temperature and consistency of the pulp previous to every new refining zone.



3,446,700

PROCESS FOR COOKING WOODCHIPS WITH A LIQUOR CONTAINING CONDENSATION PRODUCT OF VICINAL EPOXIDE AND PHENOL

Daniel H. Hall, Essex Fells, N.J., assignor to Diamond Shamrock Corporation, a corporation of Delaware

No Drawing. Filed Mar. 7, 1966, Ser. No. 532,068
Int. Cl. D21c *3/20*
U.S. Cl. 162—72 3 Claims

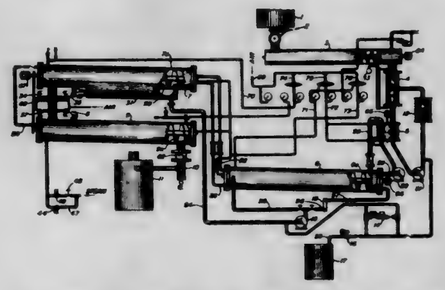
A process for the manufacture of pulp from wood chips employs a cooking liquor containing a treating agent obtained by condensing a vicinal epoxide having two to three carbon atoms with phenol or an alkyl phenol having from one to four carbon atoms in the alkyl radical.

3,446,701

APPARATUS FOR IMPREGNATING AND CHEMICALLY CONVERTING CELLULOSE-CONTAINING MATERIALS

Roger A. Lloyd, Birmingham, Ala., assignor to the United States of America as represented by the Secretary of Agriculture

Continuation-in-part of application Ser. No. 369,037, May 20, 1964. This application Dec. 28, 1967, Ser. No. 694,257
Int. Cl. D21c *7/00, 3/24*
U.S. Cl. 162—237 1 Claim



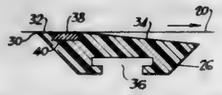
An apparatus is disclosed for impregnating and chemically converting cellulose-containing particulate materials. The materials to be chemically converted flow through a hopper, an evacuated conveyor tube, a slurrying chamber, a rotary valve, a high pressure-low tempera-

ture impregnating conveyor tube, a draining conveyor tube, and then into a high pressure-high temperature reactor conveyor tube.

3,446,702
WEAR INSERT FOR PAPER MACHINE DRAINAGE FOIL

John G. Buchanan, Pointe Claire, Quebec, Canada, assignor to The Johnson Wire Works Limited, Montreal, Quebec, Canada

Filed Jan. 24, 1966, Ser. No. 522,537
Int. Cl. D21f 7/00
U.S. Cl. 162—374 7 Claims



1. An elongated drainage foil positionable transversely under a moving drainage wire of a web forming machine, said foil including a front land portion having a leading edge and an upper surface and also including a rear suction portion having an upper surface sloped downwardly from the upper surface of said land portion, said land portion being provided in its upper surface with an undercut groove extending longitudinally of the foil, said groove having a front upper edge parallel to and spaced from the leading edge of said land portion in the direction of wire movement, and a wire engaging insert mounted in said groove and having a cross-section corresponding to that of the groove, said insert having a wire engaging upper surface coplanar with the upper surface of said land portion and at least the upper surface portion of said insert being composed of abrasion resistant material.

3,446,703
METHOD OF OPERATING A NUCLEAR REACTOR

Mark F. Lyons and Bernhardt Weidenbaum, San Jose, Calif., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Nov. 15, 1967, Ser. No. 683,374
Int. Cl. G21c 3/02
U.S. Cl. 176—37 3 Claims

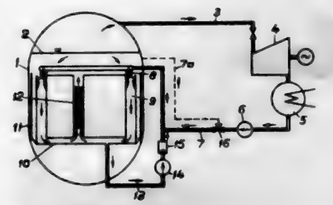


A method of operating a nuclear reactor to achieve a high burnup of fissile fuel by removing a majority of the neutron-absorbing fission products from the reaction zone of the fuel element as they are created through central melting of the fissile fuel.

3,446,704
MEANS FOR POWER CONTROL IN NUCLEAR REACTORS

Kare Hånnerz, Cnut Sundqvist, and Carl Gösta Skygge, Vasteras, Sweden, assignors to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a Swedish corporation

Filed Mar. 28, 1967, Ser. No. 626,452
Claims priority, application Sweden, Mar. 31, 1966, 4,290/66
Int. Cl. G21d 5/06
U.S. Cl. 176—61 11 Claims



A working medium flow control system for power control of a boiling water reactor from which the steam generated is led to a turbine, condensed, and returned to the reactor. At least part of the feed water is ejected as the operating fluid through the nozzles of vertical jet pumps discharging into a distributing vessel connecting the fuel assemblies. A conduit from the distributing vessel to the feed water conduit is provided with a pump to give an increased flow of operating fluid, thereby permitting control of working fluid flow and consequently of the reactor power independent of the feed water flow.

3,446,705
METHOD FOR THE PRODUCTION OF 6-AMINO-PENICILLANIC ACID

Leon John Heuser, Robbinsville, Ching Chiang, Highland Park, and Carl Francis Anderson, Milltown, N.J., assignors to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 30, 1967, Ser. No. 626,990
Int. Cl. C07c 99/14
U.S. Cl. 195—36 5 Claims

A process for the production of 6-aminopenicillanic acid comprising hydrolyzing a compound of the penicillin series by adsorbing a penicillin splitting enzyme (which has been preferably freed of fermentation solids) on bentonite, contacting the penicillin with the adsorbed enzyme in aqueous medium at a pH of about 7.0 to 9.0 and maintaining that pH during the entire hydrolysis period with aqueous ammonia or amine. The resulting 6-aminopenicillanic acid may then be acylated to form other members of the penicillin series and the clay adsorbate may be repeatedly reused.

3,446,706
PROCESS OF PRODUCING PLANT PROTEASES

Jack F. Beuk, 6 S. Madison St., Hinsdale, Ill. 60521

No Drawing. Filed Jan. 27, 1966, Ser. No. 523,265
Int. Cl. C12b 1/00; C12d 13/10
U.S. Cl. 195—66 8 Claims

An improved enzyme material for ante-mortem injection into animals is prepared by reversibly inactivating the enzyme in a solution and then holding the solution for an extended period of two hours or greater at a pH adjusted to at least about 7.5 or higher.

3,446,707
COATING MALT WITH GELATINIZED STARCH

Clifford M. Hollenbeck, Manitowoc, and Ned W. Kochorosky, Two Rivers, Wis., assignors, by mesne assignments, to North American Corporation, Milwaukee, Wis., a corporation of Delaware

No Drawing. Filed Nov. 17, 1966, Ser. No. 595,020
Int. Cl. C12c 1/04; C12g 3/00
U.S. Cl. 195—70 8 Claims

A process of increasing the size of malt kernels made from the thinner grades of barley having an extract below 76.5%. The size of the kernels is increased by applying a coating of gelatinized starch to the thin kernels prior to kilning.

3,446,708
MALT PELLETS

Clifford M. Hollenbeck and Robert E. Anderson, Manitowoc, Wis., assignors, by mesne assignments, to North American Corporation, Milwaukee, Wis., a corporation of Delaware

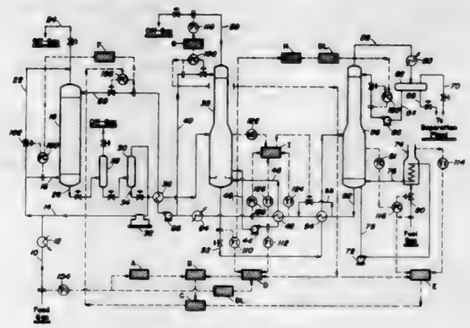
No Drawing. Filed Nov. 17, 1966, Ser. No. 595,021
Int. Cl. C12c 1/04; C12g 3/00
U.S. Cl. 195—70 10 Claims

A process in which fully germinated or modified green malt from thin or small sized barley kernels are shredded into fragments, the green wet fragments are reformed into pellets without heating, and the pellets are kilned to dryness to produce a complete brewing material. The reformed pellets may be coated with a suitable carbohydrate.

3,446,709
AUTOMATIC CONTROL OF GAS ABSORPTION UNIT

Louis Marshall, Great Neck, N.Y. (% The Lummus Company, 385 Madison Ave., New York, N.Y. 10017)

Continuation of application Ser. No. 530,674, Feb. 28, 1966. This application Nov. 22, 1967, Ser. No. 685,215
Int. Cl. B01d 3/34
U.S. Cl. 196—132 10 Claims

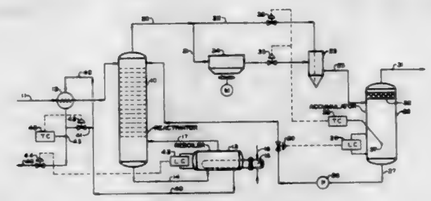


This invention relates generally to an improved apparatus of controlling an absorption plant such as is employed in the treatment of natural gas or other gaseous hydrocarbons for the recovery of certain constituents therefrom. More particularly, the invention relates to the use of analog control modules to maximize the flow of lean oil to a gas absorption tower and also to prevent flooding of the tower due to surges in the gas feed rate. The invention is applicable to substantially any gas absorption system wherein the gas composition is subject to only minor variations but the gas flow rate may vary over a broad range.

3,446,710
DISTILLATION SYSTEM WITH TEMPERATURE CONTROL OF REFLUX LIQUID

Frank M. Sissons, Jr., Old Ocean, Tex., and Gordon D. Goering, Aguirre, Puerto Rico, assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Jan. 31, 1968, Ser. No. 701,914
Int. Cl. B01d 3/42, 3/14
U.S. Cl. 202—160 4 Claims

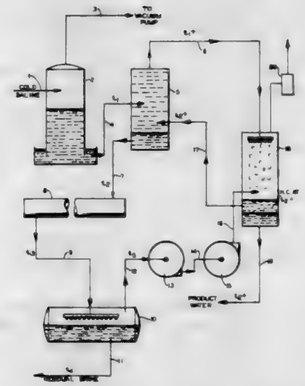


A fluid separation system, such as a vapor-liquid contacting column employed to strip gases from a liquid stream, is controlled to maintain desired operating temperatures. The relative flows of overhead vapor through and around a condenser are regulated in response to a measured temperature of the reflux liquid. Liquid from the bottom of the column is passed in heat exchange relationship with the feed to the column.

3,446,711
WATER PURIFICATION PROCESS USING A LIQUID HYDROCARBON AS A HEAT TRANSFER MEDIUM

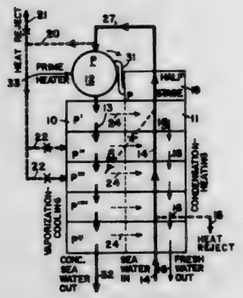
Ludwig Rosenstein, 2010 Lyon St., San Francisco, Calif. 94115, and Manuel H. Gorin, 57 Corte Ramon, Greenbrae, San Rafael, Calif. 94901

Continuation-in-part of application Ser. No. 178,386, Mar. 8, 1962. This application Dec. 3, 1964, Ser. No. 415,590
Int. Cl. C02b 1/06; B01d 3/10
U.S. Cl. 203—10 2 Claims



The process for recovering water from aqueous solutions of nonvolatile compounds including the steps of heating the solution in direct contact counter-current heat exchange with substantial temperature inversion with an immiscible heat exchange liquid, then evaporating water vapor from the solution, compressing the water vapor and condensing the water vapor with the immiscible heat exchange fluid which was cooled in the original warming step, separating part of the water from the concentration step and recycling the thus warmed immiscible heat exchange fluid to the first solution warming step.

3,446,712
METHOD FOR PRODUCING PURE WATER FROM SEA WATER AND OTHER SOLUTIONS BY FLASH VAPORIZATION AND CONDENSATION
Donald F. Othmer, 333 Jay St., Brooklyn, N.Y. 11201
Continuation-in-part of application Ser. No. 252,473, Jan. 18, 1963. This application May 22, 1967, Ser. No. 639,989
Int. Cl. B01d *3/10, 3/06;* C02b *1/06*
U.S. Cl. 203—11 25 Claims



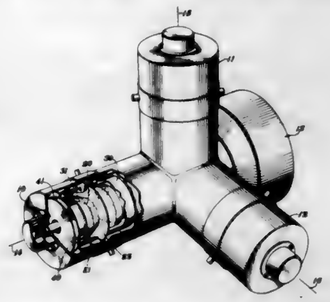
In a multistage flash evaporator wherein flash water is recovered from an aqueous stream elevated to a highest temperature and then flashed in successive stages producing a condensible water vapor at successively decreasing temperature. The aqueous stream is preheated in condensing the water vapor, a minor portion of which preheated aqueous stream is withdrawn and introduced into a flash zone having a temperature lower than the temperature of the zone at which it was withdrawn.

3,446,713
SEPARATION OF THE CORE OF A URANIUM FUEL ELEMENT FROM ITS ENVELOPE
Samuel Raviv, Beer-Sheva, Elsa Rabinovitz, Dimona, and Shimon Malkiely, Beer-Sheva, Israel, assignors to The State of Israel, Ministry of Defence, Hakiria, Tel-Aviv, Israel
No Drawing. Filed Sept. 26, 1967, Ser. No. 670,783
Int. Cl. B01k *3/00;* C01g *43/00*
U.S. Cl. 204—1.5 3 Claims

Separation of the core of a uranium fuel element with free exposed ends from its envelope by connecting the core as cathode into an electrolytic circuit in which the electrolyte is 7 to 12N nitric acid. The electrolysis is conducted until the core is loosened from the envelope whereupon it is extracted.

3,446,714
ULTRASONIC ANGULAR DISPLACEMENT SYSTEM AND METHOD OF BALANCING THE SAME
Donald Luther Ensley, Hurst, Tex., assignor, by direct and mesne assignments, to Harvest Queen Mill & Elevator Company, Dallas, Tex., a corporation of Texas
Original application July 29, 1963, Ser. No. 298,261, now Patent No. 3,293,919, dated Dec. 27, 1966. Divided and this application May 10, 1966, Ser. No. 586,564
Int. Cl. C23b *5/48*
U.S. Cl. 204—15 11 Claims

1. A system for shifting the center of mass of a body to the center of buoyancy which comprises:
(a) a metallic film on said body,
(b) a closed chamber for encasing said body,
(c) an electrolyte in said chamber having a specific gravity corresponding with the specific gravity of said body so that said body is neutrally buoyant within said chamber,
(d) means for supporting said body in said chamber free from the walls thereof,
(e) means for passing current through said electrolyte between points on said chamber which are substantially vertically spaced one above the other for removal of bottom portions of said film and for deposition of like portions at the top of said body, and



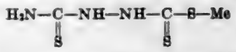
(f) means for sensing cessation of rotation of said body as changes in the distribution thereof mark coincidence between the center of mass and the center of buoyancy.

3,446,715
METAL TREATING
Samuel S. Frey, Elizabeth, N.J., assignor to Oakite Products, Inc., New York, N.Y., a corporation of New York
No Drawing. Filed Apr. 9, 1965, Ser. No. 447,089
Int. Cl. C23b *9/00;* C23g *1/10*
U.S. Cl. 204—32 8 Claims

A method of plating a zinc surface by anodizing, then pickling the anodized surface in a solution of an alkali metal bisulfate, an inorganic ferric salt and an alkali metal bifluoride, then electroplating the pickled surface.

3,446,716
ELECTRODEPOSITION OF BRIGHT SILVER
Joachim Korpiun and Hans Joachim Steeg, Geislingen, Steige, Germany, assignors to Dr. Ing. Max Schlotter, Geislingen, Steige, Germany
No Drawing. Filed Sept. 27, 1966, Ser. No. 582,216
Claims priority, application Germany, Jan. 5, 1966, Sch 38,287
Int. Cl. C23b *5/26;* C07c *153/05*
U.S. Cl. 204—46 9 Claims

4. A silver plating electrolyte essentially consisting of an aqueous solution of silver cyanide and of free alkali metal cyanide, and containing as a brightening agent an effective amount of a compound of the formula

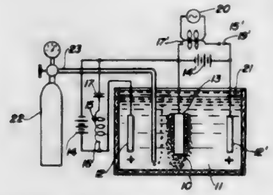


wherein Me is a metal, said compound being dissolved in said aqueous solution.

3,446,717
CATHODIC TREATMENT OF METALS IN CHROMATE SOLUTION TO FORM PROTECTIVE COATING THEREON
James Thomson Farquhar and Rosemary Green, Beckwith Knowle, Harrogate, England, assignors to Associated Chemical Companies Limited, Harrogate, England, a British company
No Drawing. Filed Nov. 19, 1964, Ser. No. 412,330
Claims priority, application Great Britain, Dec. 4, 1963, 47,917/63
Int. Cl. C23b *11/00*
U.S. Cl. 204—58 6 Claims

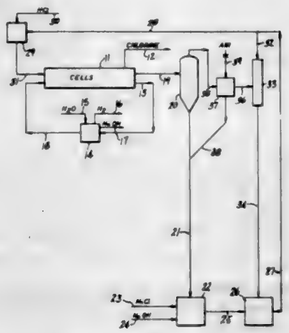
A process for producing a protective coating on meals by cathodic treatment in an acidic chromic acid solution saturated with a metallic chromate. The chromate may be one of the group of calcium, strontium, barium, zinc, cadmium, aluminum, ferric iron or lead chromates.

3,446,718
CHEMICAL SYNTHESIS
Kiyoshi Inoue, Tokyo, Japan (100 Sakato, Kawasaki, Kanagawa, Japan)
Continuation-in-part of application Ser. No. 356,715, Apr. 2, 1964. This application Sept. 25, 1964, Ser. No. 399,243
Claims priority, application Japan, Oct. 26, 1963, 38/57,171; Nov. 6, 1963, 38/59,983
Int. Cl. B01d *1/00*
U.S. Cl. 204—59 28 Claims



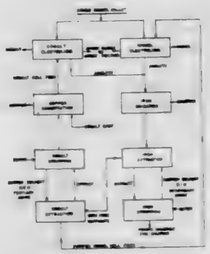
Method of and apparatus for the synthesis of organic chemical compounds wherein a liquid vehicle containing an organic compound is directed in a high-velocity jet against an impacting body while a pair of electrodes are energized with a unidirectional (D.C.) and an activating alternating potential for collection of the product and partial contribution to the dissociation of the material contained in the jet.

3,446,719
DECHLORINATION OF BRINE AND RECOVERY OF CHLORINE
Bernard H. Nicolaisen, Stamford, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed Feb. 16, 1965, Ser. No. 433,077
Int. Cl. C01d *3/14, 3/04, 1/08*
U.S. Cl. 204—99 5 Claims



Alkali metal chloride brines effluent from electrolytic cells, especially mercury cathode cells, are dechlorinated by passing the acidic brine to a vacuum zone wherein the vacuum is produced by passing alkaline alkali metal chloride brine through a barometric leg and recycling the brine containing the recovered chlorine from said barometric leg to said electrolytic cell. The alkaline alkali metal chloride brine provides a medium in which the chlorine removed from the acidic brine is dissolved and recovered.

3,446,720
PREPARATION OF HIGH-PURITY NICKEL AND COBALT
Parkman T. Brooks, Salt Lake City, Utah, assignor to the United States of America as represented by the Secretary of the Interior
Filed Jan. 27, 1965, Ser. No. 428,585
Int. Cl. C22d *1/24, 1/14*
U.S. Cl. 204—112 5 Claims

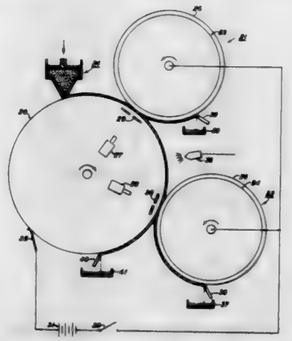


Separating iron and zinc impurities from an aqueous chloride solution, containing nickel and cobalt in addition to the impurities, by extracting said impurities with a water-immiscible secondary amine.

3,446,721
PROCESS FOR PREPARING TRIFLUOROACETYL CHLORIDE
Otto Scherer, Bad Soden, Taunus, and Jurgen Korinth and Peter-Paul Rammelt, Hofheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed July 22, 1966, Ser. No. 567,069
Claims priority, application Germany, Aug. 13, 1965, F 46,891
Int. Cl. C07c *53/16, 51/32;* B01j *1/10*
U.S. Cl. 204—158 4 Claims

1. A process for preparing trifluoroacetyl chloride which comprises reacting hexafluorodichlorobutene with molecular oxygen while irradiating with ultraviolet light.

3,446,722
ELECTROPHORETIC REFINING OF PHOTOSENSITIVE PARTICLES
Ira S. Stein, Vsevolod Tulagin, and Vsevolod S. Mihajlov, Rochester, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Oct. 27, 1966, Ser. No. 589,930
Int. Cl. B01k *5/00;* B01d *59/42*
U.S. Cl. 204—180 9 Claims



Electrically photosensitive particle dispersions are refined by exposing particular colored particles to the ap-

propriate colored light. Then particles which are suitably photosensitive will migrate to the surface of a blocking electrode where they are collected; and particles which are too low in sensitivity will remain on the surface of the transparent injecting electrode and are discarded.

3,446,723

ELECTRODEPOSITION OF A COPOLYMER CONTAINING BASIC NITROGEN ATOMS

Heinz Pohlemann, Limburgerhof, Pfalz, Herbert Spoor, Mutterstadt, Pfalz, and Ernst Becker, Ludwigshafen am Rhine, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen am Rhine, Germany

No Drawing. Filed July 6, 1966, Ser. No. 563,071
Claims priority, application Germany, July 9, 1965, B 82,750
Int. Cl. C23c *13/04*
U.S. Cl. 204—181 8 Claims

1. In a process for the production of a polymer coating on an electrically conducting substrate wherein a polymer having basic nitrogen atoms is electrochemically deposited on the substrate by cataphoresis from an aqueous bath containing an ammonium salt of said polymer, the improvement which comprises depositing on said substrate a copolymer which contains in polymerized form units of:

(1) 3 to 30% by weight of an N-aminoalkylamide of acrylic or methacrylic acid having 1 to 6 carbon atoms in the alkylene group;

(2) 3 to 30% by weight of at least one amide of acrylic and methacrylic acid having the formula

$$CH_2{=}CR^1{-}CONR^2R^3$$

wherein R^1 is a member selected from the class consisting of hydrogen and methyl and R^2 and R^3 are members selected from the class consisting of hydrogen, alkyl having 1 to 8 carbon atom, hydroxyalkyl having 1 to 4 carbon atoms and oxaalkyl having 2 to 8 carbon atoms;

(3) 40 to 94% by weight of at least one copolymerizable monomer selected from the class consisting of alkylesters of acrylic acid and methacrylic acid having 1 to 8 carbon atoms in the alkyl radical, styrene and alkyl-substituted styrenes having 1 to 3 carbon atoms in the alkyl radical;

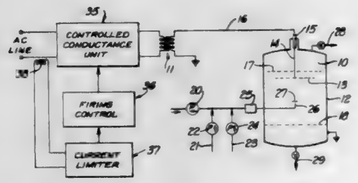
(4) 0 to 30% by weight of at least one other copolymerizable ethylenically unsaturated monomer.

3,446,724

ENERGIZATION OF ELECTRIC EMULSION TREATERS

Joseph D. Winslow, Jr., Bellaire, and Roy N. Lucas, Houston, Tex., assignors to Petrolite Corporation, St. Louis, Mo., a corporation of Delaware

Filed July 26, 1965, Ser. No. 474,551
Int. Cl. B03c *5/00*
U.S. Cl. 204—191 23 Claims



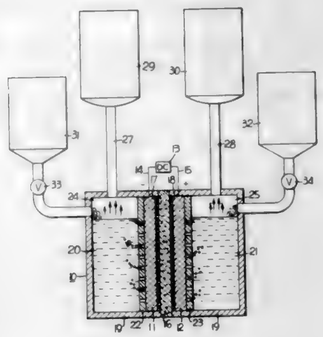
Method and apparatus for electric treatment of dispersions between electrodes, utilizing an A.C. electric power source and modification of the A.C. wave form, whereby the voltage during an initial portion of a half cycle is substantially zero and then rises substantially instantaneously to a treating value.

3,446,725

ELECTROLYSIS CELL

Harold H. Spengler, Waukesha, and Thomas J. Kempher, Milwaukee, Wis., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

Filed Feb. 25, 1966, Ser. No. 530,163
Int. Cl. C01b *13/06*; B01k *3/10*
U.S. Cl. 204—242 6 Claims



An electrolysis cell for the preparation of hydrogen and oxygen, in which a noble metal screen substrate is interposed between the electrode and electrolyte matrix interfaces.

3,446,726

HETEROGENEOUS SELECTIVE MEMBRANES

Ernö Pungor, Budapest, Jenö Havas, Balatonfuzfo, Klára Toth, Veszprem, and Géza Madarász, Balatonfuzfo, Hungary, assignors to Metrimpex Magyar Muszeripari Kulkereskedelmi Vallalat, Budapest, Hungary

No Drawing. Filed July 21, 1964, Ser. No. 384,264
Claims priority, application Hungary, July 22, 1963, PU–133
Int. Cl. B01k *3/10*
U.S. Cl. 204—296 3 Claims

Ion selective membranes are comprised of silicone rubber with particles of an active material dispersed therein. The active material has a size range of 1 to 50 microns and is present in an amount such that the particles are close enough together for pearl-type electrical conduction to occur.

3,446,727

CATALYST FOR CONVERSION OF HYDROCARBONS, METHOD FOR PRODUCING SAID CATALYST, AND HYDROCARBON CONVERSION PROCESSES

Robert B. Secor, Whittier, Calif., assignor to Filtrol Corporation, Los Angeles, Calif., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 427,144, Jan. 21, 1965. This application June 23, 1967, Ser. No. 648,246
Int. Cl. C10g *11/04*; B01j *11/48*
U.S. Cl. 208—120 58 Claims

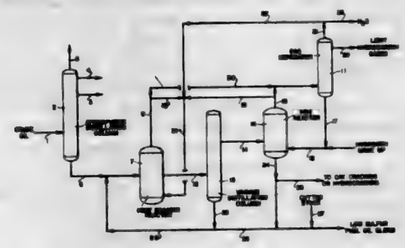
This invention relates to a silicated clay produced by reacting an acid-treated clay, at an elevated temperature, with a solution containing sodium hydroxide and sodium silicate to cause a decrease in the Al_2O_3 to SiO_2 ratio of the acid-treated clay, and to the use of the silicated clay, preferably after base exchanging the silicated clay with promoting cations, as a promoter for an aluminated acid-treated clay catalyst. The invention also includes the use of such a catalyst in hydrocarbon conversion process.

3,446,728

DESULFURIZATION PROCESS

Noah E. Blackwell III, and William J. Metrailer, Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed Oct. 4, 1966, Ser. No. 584,170
Int. Cl. C10g *29/16, 29/10*
U.S. Cl. 208—218 6 Claims



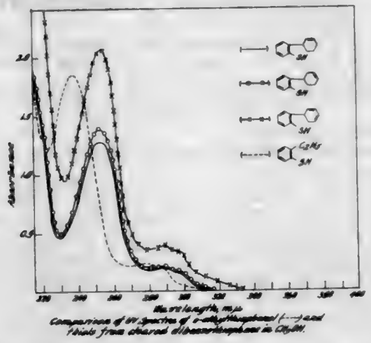
The disclosure relates to a process for the production of low sulfur fuel oil comprising the sequential steps of heat soaking in the presence of hydrogen and H_2S, distilling to recover a treated vacuum gas oil fraction, hydrodesulfurizing the vacuum gas oil in the presence of a catalyst, recovering the desulfurized oil, blending the desulfurized oil with vacuum bottoms and recovering a low sulfur fuel oil.

3,446,729

PROCESS FOR REMOVING SULFUR, OXYGEN AND NITROGEN COMPOUNDS FROM PETROLEUM DISTILLATES

Douglas M. Jewell, Honolulu, Hawaii, and Joseph P. Yevich, Pittsburgh, Pa., assignors to Gulf Research and Development Company, Pittsburgh, Pa., a corporation of Delaware

Filed Nov. 2, 1966, Ser. No. 591,489
Int. Cl. C10g *29/00*; C01f *11/00*
U.S. Cl. 208—236 10 Claims



A process for removing heterocyclic nitrogen, oxygen and sulfur compounds from hydrocarbon distillates by contacting the distillate with solid calcium hexammine.

3,446,730

CATALYTIC HYDRODENITROGENATION OF PETROLEUM FRACTIONS

Bernard A. Kerns, Pittsburgh, and Olaf A. Larson, Oakmont, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed June 21, 1966, Ser. No. 559,116
Int. Cl. C10g *23/02*
U.S. Cl. 208—254 4 Claims

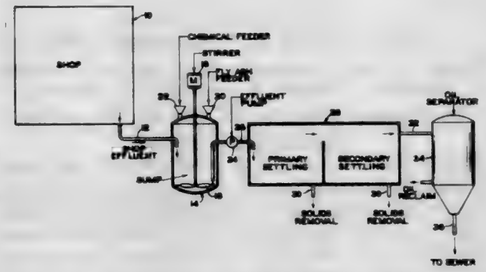
Improved denitrogenation of nitrogen-containing hydrocarbon oil feeds is obtained by the use of a hydrodenitrogenation catalyst consisting essentially of at least one component selected from the group consisting of nickel and a metal selected from the left-hand column of Group VI of the Periodic Table, and oxides and sulfides thereof, said component being composited with a special activated alumina, said catalyst being promoted with a small amount of phosphorus, silicon and/or barium.

3,446,731

COAGULANT AND PROCESS FOR TREATING WASTE WATERS

William C. Harsh, Cleveland Heights, Ohio, assignor to Cleveland Technical Center, Inc., Cleveland, Ohio, a corporation of Delaware

Filed Apr. 24, 1967, Ser. No. 633,216
Int. Cl. B01d *21/01*
U.S. Cl. 210—43 8 Claims



Fly ash in combination with alum and/or ferric chloride, functions unexpectedly as a coagulant for aqueous wastes containing immiscible liquid materials and suspended particulate solids.

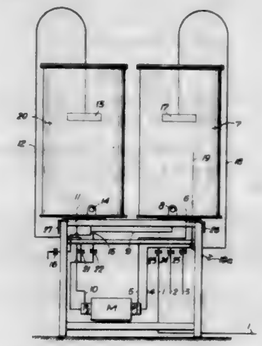
A process for removing oily residues and suspended solids from waste waters wherein fly ash in combination with alum and/or ferric chloride is admixed with the waste waters, followed by phase separation, and removal of non-aqueous phases.

3,446,732

METHOD OF PURIFYING WASTE WATER

Adolf Gasser, Triesen, Liechtenstein, and Georg Ronge, Munich, Germany, assignors to Entwicklungs- und Forschungs-Anstalt, Schaan, Liechtenstein

Filed Dec. 5, 1966, Ser. No. 599,299
Claims priority, application Austria, Dec. 21, 1965, A 11,496/65
Int. Cl. C02b *1/18, 3/06*
U.S. Cl. 210—44 18 Claims



1. A method of purifying waste water contaminated by emulsified oil droplets, which comprises:

(1) mixing the waste water at an alkaline pH value with oil and a solution of a ferric salt capable of

forming iron hydroxide in an alkaline medium, whereby flocculent iron hydroxide is formed in nascent state,

(2) allowing the mixture to stand, whereby the iron hydroxide, together with contaminating oil droplets and the added oil, rises to the surface to form a top layer,

(3) separating the top layer from the subjacent water column,

(4) subsequently mixing the subjacent water column with a purifying material comprising iron hydroxide, oil and a stabilizing agent,

(5) allowing the mixture to stand, whereby remaining contaminating oil and the purifying material rise to the surface to form a surface layer, and

(6) separating the surface layer from the remaining pure water.

3,446,733

TREATMENT OF OXYGEN-POOR WATER

Francis J. Shell, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Nov. 21, 1966, Ser. No. 595,596

Int. Cl. C02b *1/18, 5/02*

U.S. Cl. 210—59 **18 Claims**

Water is treated to increase its capability for supporting marine life comprising the addition of an agent selected from the group consisting of (1) a sulfoalkylated tannin and (2) a metal complex of a sulfoalkylated tannin wherein said metal is selected from the group consisting of iron, copper, chromium, nickel, cobalt, manganese, zinc, aluminum, titanium, vanadium, and mixtures thereof.

3,446,734

NONAQUEOUS LUBRICATING COMPOSITION FOR NYLON TIRE CORD YARN

Fred Haden Coats, Jr., Chattanooga, Tenn., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Continuation-in-part of application Ser. No. 476,349, Aug. 2, 1965. This application Jan. 18, 1967, Ser. No. 610,081

Int. Cl. C09k *3/00;* **D06m** *1/00*

U.S. Cl. 252—8.8 **9 Claims**

A nylon yarn lubricating composition of 70 to 97 parts of a polyoxypropylene compound of 10 to 20 recurring units and capped by an alkyl or acyl group of 1 to 4 carbon atoms, 3 to 30 parts of a non-ionic surface-active condensate of ethylene oxide and up to 5 parts of an antioxidant for the polyoxypropylene compound.

3,446,735

LUBRICANTS CONTAINING MOLYBDENUM PHOSPHORODITHIOATES

Herbert F. Wiese, Cleveland, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

No Drawing. Original application July 30, 1962, Ser. No. 213,115, now Patent No. 3,402,188, dated Sept. 17, 1968. Divided and this application Nov. 22, 1967, Ser. No. 708,455

Int. Cl. C10m *1/48, 3/42;* **C10l** *1/26*

U.S. Cl. 252—32.7 **3 Claims**

Molybdenum oxy salts of phosphorus acids, especially phosphorodithioic acids, are prepared by reacting the acid or an alkali metal salt thereof with an alkali metal or ammonium molybdate. The products are useful as oxidation and corrosion inhibitors in lubricants.

3,446,736

MIXED CARBOXYLATE DERIVATIVES OF BASIC ALKALINE EARTH METAL SULFONATES

Richard S. Herd and Ferdinand P. Otto, Woodbury, N.J., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Feb. 8, 1968, Ser. No. 703,868

Int. Cl. C10m *3/34*

U.S. Cl. 252—33.2 **16 Claims**

Overbased, carbonated alkaline earth metal sulfonates, having a metal content at least 200% higher than that of a corresponding normal metal sulfonate salt, are reacted with formic acid and a second carboxylic acid containing from 2 to about 5 carbon atoms to provide improved oil-soluble detergents for lubricants and as an additive for fuels. The process for preparing these oil soluble salts requires at least two steps in which the formic acid is reacted with the said sulfonate first followed by the reaction with the second carboxylic acid. The ratio of chemical equivalents of acids ranges from about 40:1 to 1:4 of formic acid to the second carboxylic acid.

3,446,737

FRICTION REDUCING ADDITIVE COMPRISING METAL SOAP SOLUBILIZED IN OIL BY AN N-CONTAINING DISPERSANT

Jerome Panzer, Roselle Park, Edward J. Longosz, North Plainfield, and Gerald D. Staffin, Westfield, N.J., and Robert M. Goodson, Midlothian, Va., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Aug. 18, 1966, Ser. No. 573,201

Int. Cl. C10m *1/32, 3/26, 5/20*

U.S. Cl. 252—34.7 **8 Claims**

Metal soaps solubilized into oil by oil-soluble nitrogen containing sludge dispersants, which are reaction products of C_{50} to C_{250} carboxylic acids with amines, are friction reducing additives for lubricating oils.

3,446,738

ESTER BASE LUBRICANT COMPOSITIONS CONTAINING AN AROMATIC AMINE AND AN ORGANIC THIOPHOSPHITE OR THIOPHOSPHONATE

Tai S. Chao, Homewood, and Daniel B. Eickemeyer, Park Forest, Ill., assignors to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 10, 1964, Ser. No. 343,481

Int. Cl. C10m *1/24*

U.S. Cl. 252—46.7 **12 Claims**

Ester base lubricating compositions of high temperature oxidative resistance are provided containing small amounts of each of an ester base fluid soluble aromatic amine, such as N-phenyl-alpha-naphthylamine, and an ester base fluid soluble organic thiophosphite or thiophosphonate, such as trilauryltrithiophosphite or dicresylphenylthiophosphonate. While these phosphorous compounds are not by themselves effective high temperature antioxidants in ester base lubricating oils, their combination with the aromatic amines affords oxidative resistance to ester base lubricating oils at high temperatures in excess of 400° F.

3,446,739

HYDROCARBON LUBRICATING COMPOSITIONS CONTAINING MIXTURES OF AN ALKYL PHOSPHITE AND FATTY ACID ESTERS FOR IMPARTING LIMITED-SLIP PROPERTIES

Andreas G. Papayannopoulos, Woodbury, N.J.; now by change of name Andrew George Papay, assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Nov. 10, 1966, Ser. No. 593,277

Int. Cl. C10m *1/46, 1/22, 1/24*

U.S. Cl. 252—49.8 **10 Claims**

Hydrocarbon lubricating compositions are provided which contain small amounts for imparting limited-slip properties thereto, of mixtures of an alkyl phosphite and an ester of a fatty acid and a fatty alcohol, wherein alkyl groups of said phosphite and alkyl groups of said fatty acid and said fatty alcohol each contain from about 12 to 30 carbon atoms.

3,446,740

MINERAL OIL IMPROVED IN POUR POINT BY HYDROGENATED HYDROXY DIENE POLYMER

David W. Young, Homewood, Patrick W. Ryan, Chicago Heights, and Henry V. Isaacson, Oak Forest, Ill., assignors to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 510,397, Nov. 29, 1965. This application Oct. 25, 1967, Ser. No. 678,495

Int. Cl. C10m *1/20, 1/00*

U.S. Cl. 252—52 **10 Claims**

A reduced pour point composition is disclosed. The composition consists of a major amount of a liquid mineral oil boiling primarily above the gasoline range and sufficient diene polymer to reduce the pour point of the mineral oil. The diene polymer has at least about 25% of its unsaturation reduced with hydrogen, at least about 1.8 predominantly primary, terminal hydroxyl groups per molecule, and a staudinger molecular weight of about 2000 to 25,000 and is the product of the polymerization of a diene of 4 to about 12 carbon atoms.

3,446,741

INSULATING DEVICE, COMPOSITION, AND METHOD

Harold C. Hervig, St. Paul, and Edward E. Leach, White Bear Lake, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed Nov. 14, 1963, Ser. No. 323,740

Int. Cl. H01b *3/40*

U.S. Cl. 252—63 **4 Claims**

Small resin-encapsulated droplets of liquid dielectric materials added as fillers to self-curing liquid resins of the same specific gravity remain stably suspended and prevent excessive exotherm and void formation in the cured resin.

3,446,742

COAGULANT FOR CLARIFYING TURBID AQUEOUS FLUIDS

Oliver M. Bacon, Cincinnati, Ohio, assignor to The Hunnewell Soap Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed Sept. 20, 1965, Ser. No. 488,729

Int. Cl. C02b *1/20*

U.S. Cl. 252—175 **18 Claims**

1. A coagulant composition for clarifying turbid aqueous liquids consisting essentially of a mixture of from 20 to 125 parts of ball clay, from 5 to 60 parts of anhydrous sodium metasilicate and from 10 to 190 parts of sodium aluminate, all parts being expressed as parts by weight.

3,446,743

STRAIGHT-CHAIN ALKYL ARYL SULFONATE DETERGENT COMPOSITIONS

David M. Marquis, Orinda, Calif., assignor to Chevron Research Company, a corporation of Delaware

No Drawing. Filed Apr. 1, 1965, Ser. No. 444,819

Int. Cl. C11d *1/14;* **C09k** *3/00*

U.S. Cl. 252—161 **16 Claims**

A process for suppressing caking tendencies of straight-chain sodium alkyl benzene sulfonate nonsoap detergents by dispersing through the detergent an effective amount of a sodium or potassium salt of a phthalic acid such as orthophthalic, isophthalic or terephthalic. The amount of anticaking agent used is in the range of 2%–25%, by weight, based on nonsoap detergent. These anticaking properties are particularly effective in built particulate solid detergent compositions in which an inorganic sodium salt detergent builder component is combined with the straight-chain sodium alkyl benzene sulfonate.

3,446,744

LOW MELTING KO_2-NaO_2 EUTECTIC COMPOSITIONS

Frederick Tepper, Butler, Pa., assignor to Mine Safety Appliances Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Jan. 16, 1967, Ser. No. 609,328

Int. Cl. C01b *15/00;* **C09k** *3/00;* **C01d** *1/00*

U.S. Cl. 252—186 **3 Claims**

New superoxide compositions melting below 700° F. contain between about 30 and 55 mol percent sodium superoxide, the remainder being potassium superoxide, including a eutectic composition melting at 610° F. containing 50 mol percent sodium superoxide are prepared by heating potassium superoxide and sodium peroxide under oxygen pressure.

3,446,745

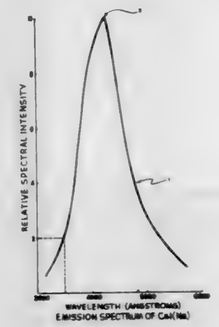
SODIUM ACTIVATED CESIUM IODIDE SCINTILLATOR

Paul C. Brinckmann, Bonn, Germany, assignor, by mesne assignments, to Kewanee Oil Company, Bryn Mawr, Pa., a corporation of Delaware

Filed Mar. 3, 1966, Ser. No. 531,455

Int. Cl. C09k *1/04*

U.S. Cl. 252—301.4 **4 Claims**



This invention comprises a scintillator capable of generating light radiation upon expoure to nuclear radiation such as gamma rays, beta rays, X-rays, etc., in which the transparent optically integral crystalline component thereof consists of a major amount of cesium iodide and a minor amount of a sodium compound, this material being characterized by having an emission peak of about 4200±100 angstrom units.

3,446,746

NOVEL THREE PHASE AEROSOLS

Raymond Lardé, Coubron, and André Couillaud, Rosny-sous-Bois, France, assignors to Roussel-Uclaf, Paris, France, a corporation of France

No Drawing. Filed June 20, 1966, Ser. No. 558,605

Claims priority, application France, June 22, 1965, 21,771

Int. Cl. C09k *3/30*

U.S. Cl. 252—305 **7 Claims**

Three phase aerosol systems for the propulsion of liquid solutions or suspensions wherein the liquid to be discharged (first or useful phase) is projected through a spray

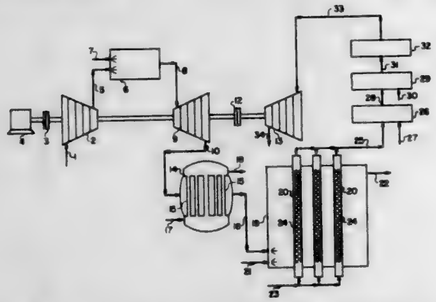
nozzle by the action of a liquefied propellant under pressure gelled with an aluminum salt of a fatty acid of 8 to 18 carbon atoms (second phase) having a lower density than the first phase and a gaseous phase of the said propellant (third phase) which increases in volume in proportion to the amount of the useful phase sprayed by vaporization of the liquid propellant. The useful phase is released by actuation of a control element which communicates with the useful phase and the outlet for discharging the said phase into the atmosphere. These conditions effect each spraying under a constant pressure equal to the pressure of liquefaction of the second phase. The liquid propellants are well known and may be liquified hydrocarbons or halogenated hydrocarbons or mixtures thereof such as propane and butane. The gelled liquified propellant has a viscosity sufficient to clog the dip-tube opening when the first liquid phase has been discharged.

3,446,747

PROCESS AND APPARATUS FOR REFORMING HYDROCARBONS

Salvatore J. Bongiorno, Oradell, N.J., assignor to Chemical Construction Corporation, New York, N.Y., a corporation of Delaware

Filed Aug. 11, 1964, Ser. No. 388,863
Int. Cl. C01b *2/16;* **B01j** *9/04;* **F27d** *17/00*
U.S. Cl. 252—373 **15 Claims**



An improvement is provided in the high pressure production of synthesis gas containing carbon monoxide and hydrogen, which is generally produced by the catalytic primary steam reforming of a fluid hydrocarbon. The synthesis gas is produced at high pressure by compression of the gas stream in a synthesis gas compressor driven by a gas turbine. The motive power for the gas turbine is a hot gas stream which is produced by burning a fluid hydrocarbon fuel in a large excess of compressed air, and expanding the resulting hot gas stream through the gas turbine. The hot low pressure exhaust gas from the gas turbine, which contains a large proportion of unreacted air, is passed to the primary reformer furnace which produces the synthesis gas, and is employed as the combustion-supporting gas to heat the furnace. In this manner the previously wasted sensible heat in the gas turbine exhaust is recovered and usefully employed.

3,446,748

FS-SMOKE AGENT INHIBITOR FOR METALS

James N. Mallis, Fredericksburg, Va., assignor to the United States of America as represented by the Secretary of the Navy

Filed Oct. 22, 1965, Ser. No. 502,731
Int. Cl. C23f *11/04;* **C06d** *3/00*
U.S. Cl. 252—387 **8 Claims**

The addition of less than 1% of red lead oxide, and preferably 0.04% to 0.10%, to a mixture of approximately 45% chlorosulfonic acid and 55% sulfur trioxide inhibits the tendency of mixture to corrode aluminum and/or steel in tanks containing the mixture.

3,446,749

PREPARATION OF A WATER-INSOLUBLE METAL SOAP PRILL CONTAINING A MIXTURE OF TWO BIVALENT METAL SOAPS

Lewis B. Weisfeld, Highland Park, and Stanley E. Whitehead, New Brunswick, N.J., assignors to Carlisle Chemical Works, Inc., Reading, Ohio, a corporation of Ohio

No Drawing. Filed June 14, 1965, Ser. No. 463,943
Int. Cl. C08k *1/58;* **B01j** *2/06*
U.S. Cl. 252—400 **7 Claims**

A prilled soap mixture of at least two bivalent metals is precipitated by reacting the hydroxide of one such metal with an oil-in-water suspension of droplets which consist of a molten soap of another metal and the molten acid forming said soap; the metal of the hydroxide reactant must form a soap which has a higher melting point than the added molten soap.

3,446,750

COMPOSITION CONTAINING RUBBER CHEMICALS

Alun Angus Jones and Eric Rogers, Wrexham, Wales, assignors to Monsanto Chemicals Limited, London, England, a British company

No Drawing. Continuation of application Ser. No. 475,595, July 28, 1965. This application Jan. 15, 1968, Ser. No. 698,048
Int. Cl. C09k *3/00*
U.S. Cl. 252—402 **15 Claims**

The invention is a composition containing certain zinc salts which are rubber chemicals useful as rubber stabilizers or vulcanization accelerators. The composition of this invention can be readily and uniformly dispersed in aqueous rubber systems. The composition contains a zinc salt of a dithiocarbamic acid or a mercaptobenzothiazole and a wetting agent and includes a finely divided, water-insoluble, absorbent solid which functions to prevent caking. The composition can, with advantage, also contain a thickening agent.

3,446,751

HEMOLYZING COMPOSITION

Theodore E. Weichselbaum, St. Louis, Mo., assignor, by mesne assignments, to Brunswick Corporation, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Nov. 29, 1965, Ser. No. 510,382
Int. Cl. C09k *3/00;* **G01n** *33/16*
U.S. Cl. 252—408 **4 Claims**

Saponin is stabilized in a solution by using dimethylsulfoxide.

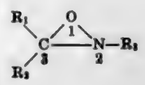
3,446,752

REDOX POLYMERIZATION SYSTEM INCLUDING AN OXAZIRANE

Yoshio Ishii and Shizuyoshi Sakai, Nagoya, Japan, assignors to Argus Chemical Corporation, Brooklyn, N.Y., a corporation of New York

No Drawing. Filed Jan. 18, 1966, Ser. No. 521,402
Claims priority, application Japan, Jan. 21, 1965, 40/2,885
Int. Cl. C08f *1/58*
U.S. Cl. 252—426 **2 Claims**

A redox polymerization system useful in the redox polymerization of vinyl monomers is provided, containing an oxazirane compound having at least one three-membered oxazirane ring containing from one to thirty carbon atoms, defined by the formula:



wherein R_1, R_2 and R_3 are hydrogen or organic hydrocarbon radicals having from one to about twenty carbon atoms, and a redox reducing agent.

3,446,753

NOVEL OXIDATION CATALYST COMPOSITIONS

Roger P. Cahoy, Merriam, and Donald M. Coyne, Prairie Village, Kans., assignors, by mesne assignments, to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Original application Dec. 26, 1962, Ser. No. 247,308, now Patent No. 3,345,417. Divided and this application Dec. 15, 1966, Ser. No. 616,144.
Int. Cl. B01j *11/22, 11/32, 11/26*
U.S. Cl. 252—437 **10 Claims**

Oxidation catalysts which are useful for carbonylic oxidation of olefins such as propylene and isobutylene are complex oxides of copper, selenium and a metal such as molybdenum, vanadium or tungsten on a suitable support. Illustrative examples are Cu_9, $Se_{1.3}$ $PMo_{12}O_{50.1}$ and Cu_9SeSiW_{12} supported on silicon carbide.

3,446,754

CATALYST ACTIVATION

Ragnar S. Solvik, Wyoming, and William Kirch, Cincinnati, Ohio, assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

Filed Dec. 3, 1965, Ser. No. 511,476
Int. Cl. B01j *11/06;* **C08f** *1/36*
U.S. Cl. 252—458 **9 Claims**

A chromium oxide catalyst containing a support such as silica, alumina, thoria, zirconia and the like, which is activated by inductive heating to a temperature of at least 1000° F., for at least 60 minutes.

3,446,755

PERFUME CONTAINING OXO SUBSTITUTED 3a,4,5,6,7,7a-HEXAHYDRO-4,7-METHANOINDENE

Harry C. Saunders, Nutley, N.J., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Oct. 22, 1965, Ser. No. 502,560
Int. Cl. C11b *9/00;* **C07c** *49/82*
U.S. Cl. 252—522 **1 Claim**

A perfume composition containing 3a,4,5,6,7,7a-hexahydro-4,7-methanoindene, substituted in one of the 5 and 6 positions with an oxo group.

3,446,756

METHOD OF MAKING RESINOUS EPOXY PREPOLYMERS AND CURING OF SAME

Thomas Ramos, 536 Fort Washington Ave., New York, N.Y. 10033

No Drawing. Continuation-in-part of application Ser. No. 281,368, May 17, 1963. This application Dec. 6, 1965, Ser. No. 512,269
Int. Cl. C08g *30/10, 30/14*
U.S. Cl. 260—2 **17 Claims**

Prepolymer resins are prepared by mixing together a diglycidyl ether which is obtained from epichlorohydrin and a polyhydric alcohol having a hydrocarbon chain between the hydroxyl groups with certain aromatic chlorine-hindered diamines or aromatic sulphur-containing diamine or with a hydroquinone. The resulting prepolymer may be cured by adding to said prepolymer, after it has been heated, a specified proportion of a curing agent such as an aromatic amine, aliphatic amine or an acid anhydride. (With the aliphatic amine, the curing can take place at room temperature.) The cured prepolymers are particularly useful for encapsulating, laminating coating and for synthetic foam applications.

3,446,757

HIGH MOLECULAR WEIGHT HYDROXYL-CONTAINING POLYETHERS

Edwin J. Vandenberg, Wilmington, Del., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Sept. 26, 1966, Ser. No. 581,776
Int. Cl. C08g *23/04, 23/10, 23/06*
U.S. Cl. 260—2 **10 Claims**

High molecular weight, benzene insoluble polyethers containing hydroxyl groups distributed throughout the polymer molecule and particularly the homopolymers of glycidol and the copolymers thereof with other epoxides and the process of preparing said polymers are described.

3,446,758

THERMOSETTABLE RESIN FROM PREFORMED LINEAR POLYESTER AND A POLYHYDRIC ALCOHOL

Maria V. Wiener, Akron, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Jan. 12, 1966, Ser. No. 520,078
Int. Cl. C08g *53/22, 17/14*
U.S. Cl. 260—2.3 **9 Claims**

What is claim is:

1. A method comprising treating a pre-formed thermoplastic linear polymeric polyester resin having an intrinsic viscosity of from about 0.4 to about 1.2 by reacting a polyhydric alcohol having at least three hydroxyl groups therewith and polycondensing the treated polymeric polyester in the presence of the said polyhydric alcohol to form a thermosettable polyester resin having an intrinsic viscosity of from about 0.15 to about 0.6, wherein the said pre-formed thermoplastic linear polymeric polyester resin is derived from at least one diol selected from the group consisting of alkylene glycols and cyclohexane dimethanol and at least one dicarboxylic acid selected from the group consisting of aromatic dicarboxylic acids, aliphatic dicarboxylic acids and cycloaliphatic dicarboxylic acids.

3,446,759

RECLAMATION OF COPOLYMERS OF TETRAFLUOROETHYLENE AND TRIFLUORONITROSOMETHANE BY NITRIC ACID DIGESTION

Nathan B. Levine, Colonia, N.J., and Harris Krainman, Canoga Park, Calif., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Filed June 14, 1966, Ser. No. 557,354
Int. Cl. C08f *47/24, 27/26*
U.S. Cl. 260—2.3 **6 Claims**

1. A process for reclaiming amine-cured nitroso rubber, comprising:

comminuting vulcanizate of copolymer of tetrafluoroethylene and trifluoronitrosomethane;

digesting said vulcanizate with sufficient concentrated nitric acid to obtain a digested revulcanizable material;

washing, neutralizing, rewashing and drying said digested material; and

milling the product thus obtained.

3,446,760

HIGH IMPACT STYRENE POLYMER CONTAINING ETHYLENE-ALKYL ACRYLATE COPOLYMER

Robert M. Nowak and Giffin D. Jones, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Mar. 15, 1965, Ser. No. 439,935
Int. Cl. C08f *33/08*
U.S. Cl. 260—4 **1 Claim**

A composition of matter comprising a high impact styrene polymer having intimately incorporated therewith from 0.5 to 10 weight percent of a copolymer selected

from the group consisting of (1) copolymers of from 61 to 86 weight percent of ethylene and from 39 to 14 weight percent of propylene, (2) copolymers of from 75 to 96 weight percent of ethylene and from 25 to 4 percent of vinyl acetate or vinyl propionate, or (3) copolymers of from 75 to 96 weight percent of ethylene and from 25 to 4 percent of an acrylic acid ester having from 1 to 4 carbon atoms in the alkyl radical, said copolymers (1) (2) and (3) having a tensile modulus of from 600 to 15,000 lbs./sq. in.

3,446,761

STAIN-RESISTANT ARTICLE, AND COMPOSITION FOR PREPARING SAME

Joseph A. Antonelli, Riverton, N.J., and Murray Zanger, Havertown, Pa., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 4, 1965, Ser. No. 506,389

Int. Cl. D06m *5/38;* **C08f** *27/02, 29/56*

U.S. Cl. 260—17.4 **8 Claims**

A polymer latex (aqueous dispersion) which is adapted for application to fabric articles and the like by an exhaust method using ordinary home laundry equipment to render the articles stain-resistant and repellent to oil and water. The latex composition must contain (A) a certain fluorine-containing polymer (e.g. one made from hexafluoropropylene oxide dimer and hydroxyethyl methacrylate), and (B) a certain cationic copolymer of a basic acrylic monomer [e.g. 2-(diethylamino)ethyl methacrylate] and a neutral acrylic monomer (e.g., an alkyl methacrylate). The composition preferably also contains (C) a wax and (D) an auxiliary polymer. An ordinary clothes dryer and/or heated flat iron can be used to dry and cure the composition applied to the fabric articles.

3,446,762

EPOXY RESIN TRAFFIC PAINT COMPOSITIONS

John A. Lopez, Springfield, and James R. Hallstrom, Fanwood, N.J., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 24, 1965, Ser. No. 490,064

Int. Cl. C09d *3/58*

U.S. Cl. 260—18 **6 Claims**

Rapid-dry, one-package, epoxy traffic paint compositions requiring no curing agent comprises (1) an organic solvent, (2) a pigment and (3) a condensation product having the general formula $A(BA)_mB$ wherein A is a glycidyl polyether of a polyhydric phenol radical and B is a dimer of unsaturated fatty acids containing at least 12 carbon atoms or a saturated dicarboxylic acid, and *m* is an integer from 0 to 30, said glycidyl polyether and acids being reacted in an approximately equal mole ratio (1.25:1.0 to 1.0:1.25).

3,446,763

PREPARATION OF POLYESTER BY ESTER INTERCHANGE AND CONDENSATION REACTIONS USING MANGANESE OCTOATE AS CATALYST

Yuzi Okuzumi, Cuyahoga Falls, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Apr. 5, 1965, Ser. No. 445,718

Int. Cl. C08g *17/013, 17/003*

U.S. Cl. 260—22 **19 Claims**

This invention relates to an improved process for ester interchange reactions and for preparing polyesters by ester interchange and condensation reactions using manganese octoate as catalyst and a combination manganese octoate with divalent compounds such as a calcium compound.

3,446,764

SOLVENT COMPOSITION FOR WATER REDUCIBLE RESIN DISPERSIONS

Gordon Phillips, Parkview, and Stephen T. Bowell, Cleveland, Ohio, assignors, by mesne assignments, to SCM Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Apr. 23, 1965, Ser. No. 450,530

Int. Cl. C08k *1/28;* **C08g** *51/34;* **C08f** *45/34*

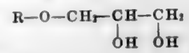
U.S. Cl. 260—22 **17 Claims**

Novel water miscible solvent compositions comprising air dry surface coating resins dispersed in the solvent compositions have been discovered and are described. The solvent compositions comprise a mixture of:

(1) A major proportion of a water soluble lower alkoxy alkanol,

(2) A minor proportion of a lower aliphatic monohydric alcohol, and

(3) From about 0.5% to about 5.0%, by weight, of a compound of the formula



where R is an alkyl group containing from about 3 to about 6 carbon atoms. Coating resins and coating formulations dispersed in these solvents are also described. The solvent compositions and coating formulations are advantageous in that the presence of the alkyl ether of glycerol falling within the scope of the above formula tends to equalize the evaporation rate of water and other solvent components. A differential evaporation rate between water and other solvents causes a lack of homogeneity in dried coating and/or the formulation of a surface skin at the air interface of the coating which prevents drying of the surface interface and often causes the coating film to lift from the coated surface. The compositions are further advantageous in that they are water miscible; that is, they are infinitely dilutable with water and are soluble in any proportion with water.

3,446,765

RIGID COMPOSITIONS COMPRISING POLYVINYL CHLORIDE, CALCIUM CARBONATE AND AN OXIDE OR HYDROXIDE

Walter Reading Pryer, Northwich, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Feb. 28, 1966, Ser. No. 530,382

Claims priority, application Great Britain, Mar. 29, 1965, 13,264/65

Int. Cl. C08f *45/56, 29/18*

U.S. Cl. 260—23 **5 Claims**

Discoloration of unplasticised polyvinyl chloride compositions containing finely divided precipitated calcium carbonate caused by exposure to light is prevented by including minor amounts of oxides or hydroxides of alkaline earth metals. The preferred oxide is magnesium oxide and the preferred amount is from 1 to 5% by weight of the polyvinyl chloride.

3,446,766

TREATMENT OF LINEAR POLYESTER WITH COPPER SALT AND ALKALI METAL IODIDE

Robert Edward Taylor, Camden, S.C., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 410,279, Nov. 10, 1964. This application Aug. 7, 1967, Ser. No. 658,611

Int. Cl. C08g *17/14;* **B29f** *3/00*

U.S. Cl. 260—22 **7 Claims**

An improvement in the process of preparing polyester filaments is disclosed for providing reinforcing yarns and cords of polyester having low free-carboxyl-group contents which give superior performance in pneumatic tires and other reinforced rubber articles where heat-degradation is a problem. A copper salt of an organic carboxylic acid and a molar excess of alkali metal iodide are mixed with fully polymerized, molten polyester to reduce the free carboxyl groups prior to melt spinning. If desired, the metal iodide may be present during formation of the polyester.

3,446,767

TERPOLYMER OF VINYL ACETATE-VINYL TERTIARY ACID ESTERS AND ACRYLATE, MALEATE OR FUMARATE ESTER

John Devereaux Nolan, Hayes, England, assignor to The Permutit Company Limited, London, England, a British company

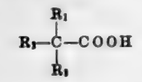
Filed Mar. 18, 1966, Ser. No. 535,456

Claims priority, application Great Britain, Mar. 23, 1965, 12,309/65

Int. Cl. C08f *15/40;* **C09d** *3/74*

U.S. Cl. 260—29.6 **12 Claims**

Terpolymers of a major portion of (1) vinyl acetate, a minor proportion of (2) vinyl esters of a mixture of branched fatty acids of the formula



wherein R_1, R_2 and R_3 are saturated hydrocarbyl groups in which the total number of carbon atoms is 7 to 9 and (3) alkyl acrylates, dialkyl maleates or dialkyl fumarates which are useful as a film forming component in coating compositions and as adhesives.

3,446,768

PROCESS FOR THE PRODUCTION OF AN AQUEOUS DISPERSION OF A POLYMER OF A VINYL ESTER

Werner Ehmann, Frankfurt am Main, Germany, assignor to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed May 24, 1966, Ser. No. 552,394

Claims priority, application Germany, May 26, 1965, F 46,159

Int. Cl. C08f *1/13, 29/42*

U.S. Cl. 260—29.6 **9 Claims**

A process has been provided for the production of an aqueous dispersion of a polymer of a vinyl ester, which comprises the step of polymerizing at least one vinyl ester of a monocarboxylic acid with 2 to 19 carbon atoms, a product of a vinyl ester, and up to 35%, calculated on the weight of the vinyl ester, of at least one other monoolefinically unsaturated monomer copolymerizable with a vinyl ester in an aqueous phase at a temperature within the range of 40° C. to 95° C. under the action of 0.002 to 1 percent, calculated on the weight of the monomers, of a water-soluble free radical polymerization catalyst in the presence of 0.5 to 18 percent by weight, calculated on the polymerizable monomers, of a reaction product of polyvinyl alcohol and 0.1 to 10% by weight, calculated on the polyvinyl alcohol, of a monoolefinically unsaturated aldehyde containing 3 to 8 carbon atoms. The aqueous dispersions obtained according to the novel process are also within the scope of the invention.

3,446,769

HIGH SOLIDS COATING COMPOSITIONS

Anthony William Opipari, Detroit, Mich., assignor to Celanese Coatings Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 12, 1966, Ser. No. 586,027

Int. Cl. C08f *15/16;* **C09d** *3/80*

U.S. Cl. 260—31.4 **10 Claims**

Thermosetting acrylic copolymer coating compositions which have high solids contents at application viscosities are made by dissolving the copolymer in a solvent, nonsolvent, stabilizing solvent mixture. Such coating compositions are particularly useful as automotive top-coat enamels applied by spray operations.

3,446,770

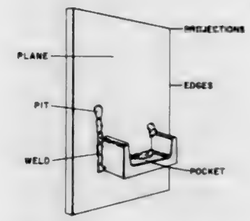
ZINC-RICH COATINGS CONTAINING CONDUCTIVE CARBON BLACK

Nobal E. King, Jr., Wilmington, Del., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware

Filed July 13, 1966, Ser. No. 564,862

Int. Cl. C09d *5/10*

U.S. Cl. 260—41.5 **2 Claims**



Improved corrosion resistant coatings for ferrous metals comprise 12 to 32½% by weight binder, 65 to 87% zinc dust and 0.9 to 2.6% electrically conductive carbon black.

3,446,771

PROCESS FOR THE PRODUCTION OF POLYURETHANE ELASTOMER

Kanji Matsubayashi and Takuo Kawaguchi, Kurashiki, Japan, assignors to Kurashiki Rayon Co., Ltd., Kurashiki, Japan

No Drawing. Filed Feb. 21, 1967, Ser. No. 617,511

Claims priority, application Japan, Mar. 8, 1966, 41/14,455; May 20, 1966, 41/32,411

Int. Cl. C08g *53/14, 22/04*

U.S. Cl. 260—45.85 **7 Claims**

A high molecular weight diol having a molecular weight of about 400 to about 8,000, a low molecular weight diol having a molecular weight of 62 to about 400, and an organic diisocyanate is polymerized by the one step process in a mixing blender provided a crushing means and in the presence of 5 to 60% by weight based on the total ingredients of an amide compound selected from the group consisting of dialkylformamide, dialkylacetamide, N-alkyl-pyrrolidone, N-alkyl-piperidone, and N-alkyl-caprolactam. The temperature of the polymerization is regulated at the range of a room temperature to 100° C. The mechanical mixing is continued from the beginning of the polymerization to after the time when the solid polyurethane elastomer is produced. The resultant solid polyurethane elastomer is crushed continuously by the crushing means into the pulverized form.

3,446,772

PROCESS FOR PREPARING HIGH MOLECULAR WEIGHT POLYALKYLENE TEREPHTHALATES BY INTIMATELY MIXING A MOLTEN STREAM OF LOW MOLECULAR WEIGHT POLYALKYLENE TEREPHTHALATE WITH A MELT OF HIGHER MOLECULAR WEIGHT POLYALKYLENE TEREPHTHALATE

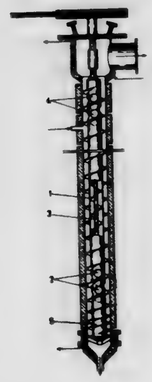
Paul-Friedrich Förster, Herbert Kurzke, Helmut Sattler, and Günther Schnock, Bobingen, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

Filed July 29, 1965, Ser. No. 475,661

Claims priority, application Germany, Aug. 8, 1964, F 43,701

Int. Cl. C08g *39/04, 53/18*

U.S. Cl. 260—47 **1 Claim**



Production of polyalkylene terephthalate of high molecular weight and shaped structures made therefrom comprising polycondensing a low molecular weight polyalkylene terephthalate by intimately and rapidly mixing a molten polyalkylene terephthalate having a specific viscosity between 0.2 and 0.85 with a melt of polyalkylene terephthalate of higher molecular weight in a reaction zone maintained under reduced pressure and at a temperature between 260 and 310° C. and withdrawing the resulting mixture from the reaction zone after a residence time between 10 minutes and 15 hours.

3,446,773

LINEAR CONDENSATION POLYMERS OF m-PHENYLENEDIAMINE AND ALDEHYDES

Eckhard Christian August Schwarz, Grifton, N.C., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 2, 1966, Ser. No. 569,580

Int. Cl. C08g *9/06*

U.S. Cl. 260—47 **6 Claims**

High molecular weight thermoplastic resins are produced by a rapid, low-temperature condensation reaction under basic conditions between m-phenylenediamine and either formaldehyde, acetaldehyde, vanillin or 3,4-dimethoxybenzaldehyde. Examples illustrate preparation of the resins and their use in bonding polyester tire cord to rubber. The resins are useful as epoxide-curing agents in adhesive systems, as antioxidants, for casting shaped articles, and for antistatic properties.

3,446,774

PROCESS FOR PREPARING SILICIC ACID ESTER SILAZANES

Hans-Joachim Kotzsch, Rheinfelden, and Mohamed Roshdy Ismail, Spich, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany, a corporation of Germany

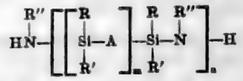
No Drawing. Filed Aug. 2, 1967, Ser. No. 661,751

Claims priority, application Germany, Aug. 2, 1966, D 50,735

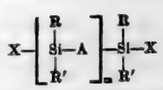
Int. Cl. C03c *17/30;* **C08g** *31/30, 23/20*

U.S. Cl. 260—47 **11 Claims**

A process for preparing silicic acid ester silazanes is disclosed. The silicic acid ester silazanes having the formula:



wherein R and R′ are selected from the group of hydrogen, alkyl and alkenyl, R″ is hydrogen or an aliphatic, cycloaliphatic or aromatic radical, A is a bivalent phenol radical, *m* has a value of from 1 to 50 and *n* has a value of at least 1, are prepared by reacting a precondensation product.



wherein R, R′ and A are as previously defined and X is halogen, with ammonia and/or a primary aliphatic, cycloaliphatic or aromatic amine.

The compounds as prepared by the claimed process are suitable for use as epoxy resin hardeners and can be directly used in the manufacture of coatings adapted to be applied to the surfaces of glass and/or mineral containing objects.

3,446,775

POLYMERS CONTAINING GEM-DITHIOETHER GROUPS AND PROCESS THEREFOR

Eugene R. Bertozzi, Yardley, and Morris B. Berenbaum, Levittown, Pa., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Filed Aug. 31, 1965, Ser. No. 484,122

Int. Cl. C08g *1/12, 1/22*

U.S. Cl. 260—67 **10 Claims**

Mercaptoalcohols react with aldehydes or ketones to form first dihydroxy gem dithioethers and secondly polymers containing sequentially alternate gem dithioether and gem diether linkages. Both products may be etherified by removal of water. Any of the above polymers, per se, or after reaction with polyisocyanates form useful plastic or rubbery products.

3,446,776

PROCESS FOR PRODUCING HIGH MOLECULAR WEIGHT POLYMER OF FORMALDEHYDE

Kenichi Fukui and Tsutomu Kagiya, Kyoto, Hisao Yokota, Kobe, Yahiko Toriuchi, Toyonaka-shi, and Shunji Matsumi, Suita-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., and Sumitomo Atomic Energy Industries Ltd., Osaka, Japan

No Drawing. Filed Nov. 8, 1965, Ser. No. 506,834

Claims priority, application Japan, Nov. 27, 1964, 39/66,750

Int. Cl. C08g *1/02, 1/20*

U.S. Cl. 260—67 **5 Claims**

Crude formaldehyde prepared by thermal decomposition of alpha-polyoxymethylene without preliminary purification is polymerized in liquid phase in the presence of either an anionic or a cationic catalyst to produce a high molecular weight polymer, in a solvent system containing carbon dioxide as a main component, in a closed system. The unreacted monomer and the carbon dioxide are separated from the resulting polymer merely by reducing the pressure in the reaction vessel. Optionally, an organic solvent having a boiling point of up to 40° C. may be used as an additional component of the solvent system.

3,446,777

NON-CONJUGATED POLYMERIZABLE ALKENYL-GUANAMINES, POLYMERS THEREOF, AND METHODS OF MAKING THEM

William D. Emmons, Huntingdon Valley, Pa., assignor to Rohm and Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed May 13, 1965, Ser. No. 455,613

Int. Cl. C08f *7/12;* **C07d** *55/20*

U.S. Cl. 260—78.5 **20 Claims**

The present invention is concerned with 2-(ω-alkenyl)-guanamines in which the double bond of the alkenyl group is in non-conjugated relationship with respect to the unsaturation of the triazine ring and is part of a terminal group $H_2C{=}C<$. The invention is also concerned with addition polymers of the alkenylguanamines.

3,446,778

BLOCK COPOLYESTER CONTAINING CRYSTALLIZABLE POLYMERIC UNITS AND RUBBERY POLYESTER UNITS

Richard C. Waller, Silver Lake, and Max H. Keck, Cuyahoga Falls, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Aug. 4, 1964, Ser. No. 387,489

Int. Cl. C08g *17/003, 39/10*

U.S. Cl. 260—75 **7 Claims**

The invention relates to block copolyester resins comprised of blocks of high melting crystallizable polymeric polyesters linked to blocks of low melting rubbery polymeric polyesters. Elastic fibers and films can be made from the resins by melt extrusion.

3,446,779

PRODUCT OF CATALYZING POLYURETHANE FORMATION BY MEANS OF 2-MERCAPTO-BENZOTHIAZOLES, THIAZOLES, OXAZOLES, IMIDAZOLES AND IMIDAZOLINES

Anthony F. Finelli, Akron, and Charles A. Suter, Cuyahoga Falls, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Sept. 1, 1964, Ser. No. 393,779

Int. Cl. C08g *22/10*

U.S. Cl. 260—75 **2 Claims**

This invention relates to a method of preparing polyurethanes which have improved fungicidal and bactericidal properties by the use of a catalytic amount of a 2-mercapto compound of benzothiazole, thiazole, thiazoline, oxazole, imidazole and imidazoline during the curing with a crosslinking agent selected from the class of organic diamines, glycols and alcoholamines.

3,446,780

MERCAPTAN CONTAINING POLYURETHANE COMPOSITIONS, PROCESS AND CURED PRODUCTS THEREOF

Eugene R. Bertozzi, Yardley, Pa., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Filed Aug. 31, 1965, Ser. No. 484,097

Int. Cl. C08g *30/14, 23/20, 22/04*

U.S. Cl. 260—75 **17 Claims**

Simple or polymeric organic polyisocyanates react with simple or polymeric polyfunctional ol-thiol compounds under non-alkaline conditions to form stable polyfunctional —SH group containing polyurethane compositions which may be cured to form polymers having good abrasion and chemical resistance and devoid of urea or thiourethane groups.

3,446,781

SOLUBLE CURED POLYESTER POLYURETHANES

John E. Brownsword, Cuyahoga Falls, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Apr. 4, 1966, Ser. No. 539,664

Int. Cl. C08g *28/06*

U.S. Cl. 260—75 **10 Claims**

A cured polymeric polyurethane having superior physical properties, substantially soluble in methyl ethyl ketone and the method for its preparation which consists essentially of reacting an organic diisocyanate with the mixture which comprises a hydrocarbon diol, a diamino diphenyl sulfone and a polymeric polyester of 1,4-butane diol and adipic acid, and curing the reaction mixture.

3,446,782

METHOD OF MANUFACTURE OF POWDERY SYNTHETIC LINEAR POLYAMIDES

Kaoru Okazaki, Masaru Nakasatomi, and Minoru Maruyama, Nagoya, Japan, assignors to Toyo Rayon Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

No Drawing. Filed Apr. 11, 1966, Ser. No. 541,510

Claims priority, application Japan, Apr. 14, 1965, 40/21,625; July 28, 1965, 40/45,323

Int. Cl. C08g *53/02, 53/03*

U.S. Cl. 260—78 **8 Claims**

A method for manufacturing a powdery synthetic linear polyamide which comprises (1) forming a mixture of an aliphatic polycarbonamide and an aqueous solution of an unsubstituted lactam; (2) heating such mixture to a temperature lower than the melting point of the polycarbonamide and higher than the temperature at which the polycarbonamide is softened in the presence of the aqueous solution of lactam so as to form an emulsion—or solution—like dispersion system; and (3) thereafter cooling the system to recover the powdery polycarbonamide.

Such process allows the production of the powdery synthetic linear polycarbonamide without such problems as degradation, coloration, or gelation.

3,446,783

AMMONIA SOLUBLE RESIN

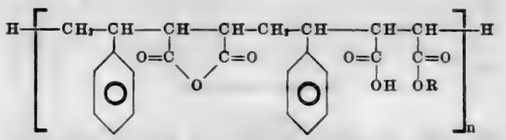
Daniel J. Kay, Buffalo, and Raymond P. Knipple, North Tonawanda, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Original application Dec. 4, 1964, Ser. No. 416,104, now Patent No. 3,380,944, dated Apr. 30, 1968. Divided and this application Dec. 1, 1966, Ser. No. 611,498

Int. Cl. C08f *19/02, 27/12;* **C09g** *1/16*

U.S. Cl. 260—78.5 **4 Claims**

An alkali soluble resin useful in floor polishes of the formula:



wherein *n* is a number from 1 to 9 and R is selected from the group consisting of alkyl and alkylene-oxy-alkyl, R contains from 1 to 20 carbon atoms, can be prepared by gradually adding a mixture of free radical initiator, styrene and ROH to a solvent solution of maleic anhydride, in the mole ratio of maleic anhydride to styrene of from between about one to 0.7 and about one to 0.85 and in a mole ratio of maleic anhydride to ROH of from between about one to 0.8 and about one to one, at an elevated temperature between about 115 and 180 degrees centigrade until the acid number of the resin is between about 180 and 340.

3,446,784
RESINOUS COATING COMPOSITION

Henry C. Kao, Dearborn, Mich., assignor, by mesne assignments, to Interchemical Corporation, New York, N.Y., a corporation of Ohio

No Drawing. Filed Feb. 23, 1965, Ser. No. 434,605
Int. Cl. C08f *15/40*; C08g *37/32*
U.S. Cl. 260—78.5 3 Claims

A resinous coating composition particularly suitable for coating coils of aluminum and other metallic sheet material which subsequently can be post-formed into metallic siding of the proper configuration. The coating composition comprises a solution of a volatile organic solvent containing from 5% to 20% by weight of substantially monomeric hexamethoxymethyl melamine and 80% to 95% by weight of an interpolymer comprising 50% to 70% of an acrylic monomer, 2% to 8% of an organic acid and from 10% to 30% of acrylonitrile.

3,446,785
POLYMERIZATION OF OLEFINS

Owen L. Stafford, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Dec. 9, 1964, Ser. No. 417,221
Int. Cl. C08d *1/30, 1/32*
U.S. Cl. 260—93.1 7 Claims

1. A process for the preparation of synthetic polymers which comprises subjecting to polymerization conjugated diolefins having 5 to 12 carbon atoms in the presence of a catalyst consisting of a monoalkylaluminum dihalide and recovering the polymer so produced.

3,446,786
POLYMERIZATION TECHNIQUE

Frederico Engel and Günter Beckmann, Marl, Germany, assignors to Chemische Werke Huls, A.G., Marl, Germany

Filed Mar. 8, 1965, Ser. No. 437,856
Claims priority, application Germany, Mar. 10, 1964, C 32,368
Int. Cl. C08f *1/08, 1/06*
U.S. Cl. 260—94.2 8 Claims

A process for providing for the removal of heat of polymerization from a subsequent step of solution-polymerizing olefins in hydrocarbon solvents, which process comprises the steps of:

(a) Cooling under agitation a solution of a hydrocarbon solvent containing 3 to 10 percent by weight based on the total solution of a dissolved polymerizable olefin of three to eleven carbon atoms, to a temperature of 3 to 7 centigrade degrees below the freezing point of the solvent, said solvent having a freezing point between +14° C. and −4° C. to form flowable slush containing from 10% to 70% by weight of solid frozen solvent, said solid frozen solvent generally having a particle size of less than 4 mm., preferably 10–1,000 microns, and

(b) Passing the resultant slush to a polymerization zone.

3,446,787
METHOD OF POLYMERIZING BUTADIENE BY MEANS OF A CATALYST CONTAINING ALUMINUM ALKYLS, ORGANONICKEL COMPOUNDS, TUNGSTEN OR MOLYBDENUM HEXAFLUORIDE

Morford C. Throckmorton and William M. Saltman, Akron, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Mar. 20, 1967, Ser. No. 624,143
Int. Cl. C08d *1/14, 3/08*
U.S. Cl. 260—94.3 10 Claims

A method and a catalyst system for the solution polymerization of butadiene or butadiene in mixture with other diolefins to form polymers containing a high content of cis 1,4 addition is described. The solution polymerization is carried out under conventional polymerization conditions. The catalyst employed is a mixture of (1) organometallic compounds of metals of Groups I, II and III; (2) organonickel compounds and (3) tungsten hexafluoride or molybdenum hexafluoride.

3,446,788
POLYMERIZATION OF BUTADIENE BY A CATALYST CONTAINING ALUMINUM ALKYLS, ORGANONICKEL COMPOUNDS AND METAL FLUORIDES

Morford C. Throckmorton and William M. Saltman, Akron, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Mar. 20, 1967, Ser. No. 624,219
Int. Cl. C08d *1/14, 3/08*; B01j *11/84*
U.S. Cl. 260—94.3 10 Claims

A method and a catalyst system for the solution polymerization of butadiene or butadiene in mixture with other diolefins to form polymers containing a high content of cis 1,4 addition is described. The solution polymerization is carried out under conventional polymerization conditions. The catalyst employed is a mixture of (1) organometallic compounds of metals of Groups I, II and III; (2) organonickel compounds and (3) a metal fluoride selected from the group consisting of

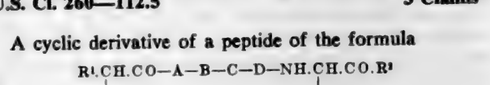
phosphorus pentafluoride,
vanadium pentafluoride,
uranium hexafluoride,
osmium hexafluoride,
rhenium hexafluoride,
iodine pentafluoride,
antimony pentafluoride,
tin tetrafluoride,
antimony trifluoride,
indium trifluoride,
arsenic pentafluoride,
bismuth pentafluoride,
niobium pentafluoride,
tantalum pentafluoride,
titanium tetrafluoride,
zirconium tetrafluoride,
zinc difluoride,
platinum hexafluoride,
hafnium tetrafluoride,
thorium tetrafluoride,
lead tetrafluoride,
cadmium difluoride,
titanium trifluoride,
iron trifluoride,
cobalt trifluoride,
vanadium trifluoride,
palladium trifluoride,
germanium tetrafluoride,
tellurium tetrafluoride,
copper difluoride and silver difluoride.

3,446,789
ANALOGUES OF CYCLIC PEPTIDES CONTAINING DISULFIDE BONDS WITHOUT DISULFIDE BONDS

Josef Rudinger and Karel Jost, Prague, Czechoslovakia, assignors to Ceskoslovenska Akademie Ved, Prague, Czechoslovakia

No Drawing. Filed July 30, 1965, Ser. No. 476,162
Int. Cl. C07c *103/52*; A61k *17/00, 25/00*
U.S. Cl. 260—112.5 3 Claims

A cyclic derivative of a peptide of the formula



in which A, B, C, D are L-amino acid residues, R^1 is H or NH_2 or NH_2 substituted by a protective group and wherein R^2 is OH or NH_2 or one of these two radicals substituted with a protective group and wherein X is CH_2S or CH_2CH_2.

An example is deamino-carba[1]-oxytocin.

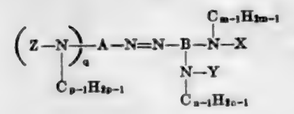
The compounds are formed by reacting a non-cyclic peptide containing a group X, as defined above, with a peptide bonds-forming agent such as dicyclohexylcarbodiimide, sec. butylchloroformate or N-ethyl-5-phenyl-oxazolium-3′-sulfonate.

3,446,790
TRIAZINE AND PYRIDINE FIBER REACTIVE AZO DYESTUFFS

Herbert Francis Andrew, Manchester, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Aug. 29, 1966, Ser. No. 575,517
Claims priority, application Great Britain, Sept. 3, 1965, 37,695/65
Int. Cl. C09b *29/36, 62/08*
U.S. Cl. 260—153 4 Claims

Water-soluble reactive dyestuffs which are represented by the formula:



wherein:

A is a disulphonaphthalene, sulphophenylene, sulphonaphthalene, disulphostilbene, phenyleneazo-disulphodiphenylene or phenyleneazo-disulphonaphthalene radical;

B is a m-phenylene or m-tolylene radical;

X, Y and Z are independently, dichloro-s-triazine, monochloro-methoxy - s - triazine, monochlorosulphoanilino-s-triazine, monochloro-sulphotoluidino - s - triazine, monochlorocarboxysulphoanilino - s - triazine, monochloro-disulphoanilino - s - triazine, cyanodichloropyrimidinyl or trichloropyrimidinyl groups; and

m, *n* and *p* stand for integers of at most 6, *q* is 1–2; and which contain 2–8 sulphonic acid groups.

3,446,791
DISAZO DYES

John I. Dale III, James M. Straley, and Max A. Weaver, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Apr. 28, 1966, Ser. No. 545,849
Int. Cl. C07c *113/00*; C09b *35/20*
U.S. Cl. 260—184 4 Claims

Water-insoluble disazo compounds containing two phenyl-azo-aniline moieties joined by a

$$—CH_2CH_2SO_2CH_2CH_2—$$

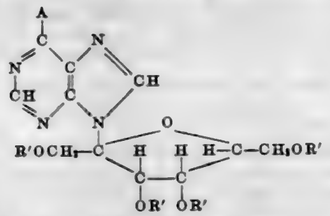
attached to the nitrogen atom of the aniline coupler of each phenyl-azo-aniline moiety. The disclosed disazo compounds are useful as dyes for hydrophobic textile materials such as polyester fibers.

3,446,792
9-D-PSICOFURANOSYLPURINE AND 6-SUBSTITUTED DERIVATIVES

Herman Hoeksema, Kalamazoo Township, Kalamazoo County, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 788,749, Jan. 26, 1959. This application May 23, 1960, Ser. No. 30,770
Int. Cl. C07d *51/54*; A61k *21/00*; A61l *13/00*
U.S. Cl. 260—211.5 27 Claims

1. An N-psicofuranoside having the formula:



wherein A is selected from the class consisting of hydrogen, the group —XR wherein R is selected from the class consisting of hydrogen, lower-alkyl, and lower-aralkyl, and X is selected from the class consisting of oxygen and sulfur, and the group



wherein R_2 is selected from the class consisting of hydrogen, lower-alkyl, lower-aralkyl, and lower-aryl, and R_3 is selected from the class consisting of lower-alkyl, lower-aralkyl, and lower-aryl, and R′ is selected from the class consisting of hydrogen, a hydrocarbon carboxylic acid acyl radical containing from two to twelve carbon atoms, inclusive, and a halo-, hydroxy-, lower-alkoxy-, amino-, cyano-, thiocyano-, and nitro-substituted hydrocarbon carboxylic acid acyl radical containing from two to twelve carbon atoms, inclusive.

3,446,793
3′-CYCLIC ESTERS OF 5′-DEOXY-5′-(DIHYDROXYPHOSPHINYLMETHYL)-NUCLEOSIDES

Gordon H. Jones and John G. Moffatt, Los Altos, Calif., assignors to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed Oct. 30, 1967, Ser. No. 679,218
Int. Cl. C07f *9/10*; A61k *27/00*
U.S. Cl. 260—211.5 8 Claims

The 3′ - cyclic esters of 5′-deoxy-5′-(dihydroxyphosphinylmethyl)-nucleosides are obtained by treatment of 5′-deoxy-5′-(diphenoxyphosphinylmethyl)-nucleosides with base. Alternatively, these cyclic esters can be prepared by reaction of 5′-deoxy-5′-(dihydroxyphosphinylmethyl)-nucleosides with dehydrating agents such as carbodiimides and the like. The cyclic 3′,6′-phosphonates of the present invention are valuable pharmacological agents. For example, they exert control upon enzymes involved in glycogenesis.

3,446,794
CELLULOSE DERIVATIVES

Colin Sutherland Knight, Alexander Claude Reimer, and Victor Charles Weaver, Maidstone, Kent, and Brian Neville Brook, Faversham, Kent, England, assignors to W. & R. Balston Limited, Maidstone, Kent, England, a British company

No Drawing. Filed Oct. 20, 1964, Ser. No. 405,281
Claims priority, application Great Britain, Oct. 21, 1963, 41,543/63
Int. Cl. C08b *15/00*
U.S. Cl. 260—212 15 Claims

The preparation of microcrystalline cellulose ion ex-

change materials comprising the steps of (a) acid treating fibrous cellulose to remove its amorphous regions, (b) mercerizing the resulting microcrystalline cellulose, (c) crosslinking the mercerized product with a substance such as epichlorohydrin, and (d) reacting the resulting cross linked product with an ion exchange substituent such as 1, 3 propane sultone.

3,446,795

MIXED CELLULOSE ETHERS

Joseph R. Boudreaux, Plaquemine, and Reginald F. Roberts, Jr., Baton Rouge, La., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Apr. 16, 1965, Ser. No. 448,608
Int. Cl. C08b *11/02;* **E21b** *43/25*
U.S. Cl. 260—231 **3 Claims**

Cellulose ethers of improved brine tolerance are mixed carboxyalkyl-hydroxyalkyl celluloses characterized by a carboxymethyl MS from about 0.2 up to about 1.2 and a hydroxyalkyl MS of at least 1.5 up to about 5, preferably a carboxymethyl MS of about 0.3 to about 0.5 and hydroxyalkyl MS from about 1.8 to about 3. These ethers have a solution rate in brine nearly as rapid as their solution rate in water. They are especially useful as additives to well treating fluids.

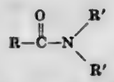
3,446,796

SULFATION OF XANTHOMONAS HYDROPHILIC COLLOID

Richard G. Schweiger, San Diego, Calif., assignor to Kelco Company, San Diego, Calif., a corporation of Delaware

No Drawing. Filed Nov. 16, 1966, Ser. No. 594,666
Int. Cl. C08b *19/00, 19/02*
U.S. Cl. 260—234 **16 Claims**

An essentially undegraded sulfate ester of a Xanthomonas hydrophilic colloid and salts thereof. The process for preparing an essentially undegraded sulfate ester of a Xanthomonas hydrophilic colloid by acidifying the Xanthomonas hydrophilic colloid in aqueous medium, precipitating the acidified colloid, removing substantially all of the water from said precipitated colloid while maintaining the colloid in a wetted state, and then reacting the wetted colloid with a sulfur trioxide-dialkyl amide sulfation complex in which the amine has a formula



wherein R' is a lower alkyl radical and R is selected from the class consisting of hydrogen and a lower alkyl radical. The essentially undegraded sulfate esters of a Xanthomonas hydrophilic colloid and salts thereof are useful in forming thickened glues.

3,446,797

N-(2-PROPYNYL) NITROGEN-CONTAINING HETEROCYCLIC COMPOUNDS

Antonino Focella, Clifton, and Albert Israel Rachlin, Verona, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Mar. 28, 1966, Ser. No. 537,655
Int. Cl. C07d *41/06, 29/20, 27/24*
U.S. Cl. 260—239.3 **10 Claims**

N-(2-propynyl)-pyrrolidones and analogs are prepared by condensing a pyrrolidone or an analog thereof with an appropriate halo propyne. The end products possess plant fungicidal properties.

3,446,798

AZEPINE DERIVATIVES

Werner Küng, Allschwil, Basel-Land, and Daniel A. Prins, Oberwil, Basel-Land, Switzerland, assignors to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

No Drawing. Filed June 21, 1965, Ser. No. 465,734
Claims priority, application Switzerland, June 26, 1964, 8,425/64
Int. Cl. C07d *41/08, 57/00;* **A61k** *27/00*
U.S. Cl. 260—239 **3 Claims**

The compounds are of the class of 5-substituted-3-alkylthio or phenylthio iminodibenzyls or iminostilbenes which possess adrenolytic properties with or without CNS effects or exhibit CNS activity without adrenolytic effects. Illustrative species are 5-[2'-(1'methyl-2''-piperidyl)ethyl]-3-ethylthio-10,11-dihydro - 5H-dibenz[b,f]azepine, 5-(3'-dimethylaminopropyl)-3-phenylthio-10,11 - dihydro-5H-dibenz[b,f]azepine, 5-(3'methylaminopropyl)-3 - methylthio-10,11-dihydro-5H-dibenz[b,f]azepine, etc.

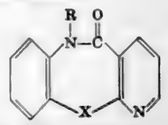
3,446,799

NOVEL PYRIDO[2,3-b][1,5]BENZOOXAZEPIN-5-ONES AND PYRIDO[2,3-b][1,5]BENZOTHIAZEPIN-5-ONES

Charles Hoffmann, Enghien-les-Bains, and Andrée Faure, Paris, France, assignors to Societe Anonyme dite: Laboratoires U.P.S.A., Gennevilliers, France, a company of France

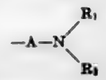
No Drawing. Filed Apr. 5, 1966, Ser. No. 540,176
Claims priority, application Great Britain, Apr. 7, 1965, 14,811/65
Int. Cl. C07d *11/06;* **A61k** *27/00*
U.S. Cl. 260—239.3 **11 Claims**

Compounds of the formula



I

in which X is oxygen or sulphur and R is hydrogen or a radical of the formula



in which A is an alkylene chain of between 2 and 6 carbon atoms and R_1 and R_2 are alkyl groups of 1 to 4 carbon atoms and R_1 and R_2 may form a heterocyclic ring together with the adjacent nitrogen atom, have valuable antispasmodic and antihistaminic activity. The compounds are prepared by condensation of a 2-halonicotinoyl halide with o-aminophenol or o-aminothiophenol in one or two stages.

3,446,800

PROCESS FOR THE PREPARATION OF 1,3-DIHYDRO-2H-1,4-BENZODIAZEPIN-2-ONES

Ronald J. McCaully, Malvern, Pa., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 533,777, Mar. 14, 1966. This application Feb. 9, 1968, Ser. No. 704,277
Int. Cl. C07d *53/06;* **A61l** *27/00*
U.S. Cl. 260—239.3 **4 Claims**

This invention is concerned with a process for the synthesis of 5 - aryl-1,3-dihydro-3-hydroxy-2H-1,4-benzodiazepin-2-ones by brominating 5-aryl-1,5-dihydro-2H-1,4-benzodiazepin-2-ones and then hydrolyzing the resulting bromohydrobromide salts. The products produced by the process of the invention exert anti-anxiety activity in animals, a pattern of activities possessed by psycholeptic agents.

3,446,801

CAROTENOID COMPOUNDS

Albert J. Chechak and Charles D. Robeson, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Mar. 23, 1966, Ser. No. 536,652
Int. Cl. C09b *23/12;* **C07c** *43/20, 15/04*
U.S. Cl. 260—240 **9 Claims**

Novel carotenoid compounds, useful as food colorants and as additives in poultry feed, of the structural formula:

$$R—A_m—B_n—R'$$

where R is the 2,6,6-trimethylcyclohex-1-enyl radical, A is the divalent 3-methyl-1,3-butadienyl radical, B is the divalent ethylene radical, R' is the phenyl radical, the p-methoxyphenyl radical or the 2-furyl radical, *m* is 2 to 3, *n* is 1 to 4, and the sum of *m* and *n* is 4 to 6.

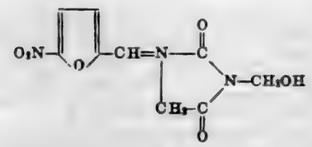
3,446,802

3-HYDROXYMETHYL-1-(5-NITROFURFURYLIDENEAMINO) HYDANTOIN

Julian Getz Michels, Norwich, N.Y., assignor to The Norwich Pharmacal Company, a corporation of New York

No Drawing. Filed Dec. 27, 1960, Ser. No. 78,329
Int. Cl. C07d *49/32;* **A61k** *27/00*
U.S. Cl. 260—240 **1 Claim**

1. The compound of the formula:



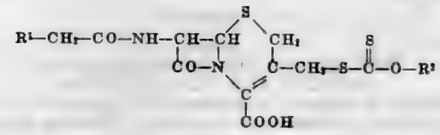
3,446,803

DITHIOCARBOXYLATED CEPHALOSPORINS

Earle M. Van Heyningen, Indianapolis, Ind., assignor to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed Jan. 18, 1965, Ser. No. 426,440
Int. Cl. C07d *99/24;* **A61k** *21/00*
U.S. Cl. 260—243 **11 Claims**

1. The compounds represented by the following formula:



wherein

R^1 is a member of the group consisting of hydrogen, C_1–C_7 alkyl, C_1–C_7 alkoxy, C_1–C_7 alkylmercapto, phenyl, phenoxy, phenylmercapto, thienyl, furyl, benzothienyl, and benzofuryl;

and R^2 is a member of the group consisting of C_1–C_{12} primary alkyl, C_3–C_{12} secondary alkyl, and C_3–C_7 cycloalkyl;

and the salts thereof with pharmaceutically acceptable cations.

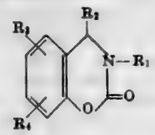
3,446,804

3,4-DIHYDROXYBENZOXAZINONES AND PROCESS FOR THEIR PRODUCTION

John Shavel, Jr., Mendham, and George Bobowski, Morristown, N.J., assignors to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

No Drawing. Filed Oct. 23, 1965, Ser. No. 504,142
Int. Cl. C07d *87/16;* **A61k** *27/00*
U.S. Cl. 260—244 **32 Claims**

The present invention describes 3,4-dihydroxybenzoxazinones of the formula:



I

wherein R_1, R_2, R_3, and R_4 are described below.

These compounds are useful as anti-inflammatory agents.

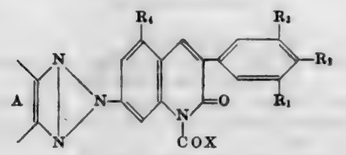
3,446,805

7-ARYLTRIAZOLYL-3-ARYL-CARBOSTYRILS

Wolf-Dieter Wirth, Cologne-Stammheim, Hans Knupfer, Bergisch Neukirchen, and Carl-Wolfgang Schellhammer, Opladen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Aug. 1, 1967, Ser. No. 657,506
Claims priority, application Germany, Aug. 9, 1966, F 49,910
Int. Cl. C07d *47/00, 33/34*
U.S. Cl. 260—247.2 **4 Claims**

Brightening agents of the formula



wherein R_1, R_2, and R_3 are hydrogen, alkyl of 1–12 carbon atoms, alkoxy, or halogen; R_4 is hydrogen or lower alkyl; X is alkoxy or substituted amino in which the substituents are alkyl of 1–18 carbon atoms, aryl, or aralkyl; and A is a substituted or unsubstituted fused mono- or polynuclear aromatic ring in which the substituents are alkyl or alkoxy.

The compounds can be prepared from the corresponding 7-amino-3-aryl-carbostyriles by diazotization, coupling the diazonium compound with a primary aromatic amine in the ortho-position to the primary amino group, oxidizing the o-amino azo compounds to the triazole and subsequently acylating to introduce the —COX grouping.

3,446,806

PROCESS FOR THE PREPARATION OF 1,4-BENZODIAZEPINE 4-OXIDES

Giles A. Archer, Essex Fells, and Leo Henryk Sternbach, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Jan. 19, 1966, Ser. No. 521,551
Int. Cl. C07d *99/02, 51/48, 53/06*
U.S. Cl. 260—247.5 **10 Claims**

Quaternary ammonium salts of 4-phenylquinazoline 3-oxide which are useful as intermediates in the preparation of pharmacologically active 1,4-benzodiazepines.

3,446,807

PROCESS FOR THE PRODUCTION OF SULPHONES

Kuno Wagner, Leverkusen, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Nov. 1, 1965, Ser. No. 506,014
Claims priority, application Germany, Dec. 8, 1964, F 44,637
Int. Cl. C08f *13/06, 7/12;* C07c *147/02*
U.S. Cl. 260—248 9 Claims

Producing organic sulphones containing at least one sulphone moiety by reacting sulphur dioxide and an ethylenically unasturated compound having at least one terminal carbon double bond, the reaction being effected in the presence of a formic acid salt of a tertiary organic base or addition compound thereof.

The resulting sulphone or polysulphone products are useful as stabilizers for plastics such as polyoxymethylenes.

3,446,808

BORATES OF N-HYDROXYALKYL-NITROGEN-HETEROCYCLIC SATURATED COMPOUNDS

Henryk A. Cyba, Evanston, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed May 25, 1964, Ser. No. 370,079
Int. Cl. C07d *51/00;* C07f *5/02;* C08k *1/52*
U.S. Cl. 260—250 10 Claims

Borate of N-hydroxyalkyl-nitrogen-heterocyclic compound free of unsaturation in the heterocyclic ring, exemplified by a borate of N-hydroxyethyl-N'-sec-octyl-piperazine. The compounds are useful as weathering stabilizers for organic substrates normally subject to deterioration by weathering, such as plastics, also as antioxidants for hydrocarbon distillates.

3,446,809

PROCESS FOR THE PREPARATION OF 2-AMINO-3-HYDROXYQUINOXALINES

Raymond C. Harris, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Jan. 19, 1966, Ser. No. 521,512
Int. Cl. C07d *51/78*
U.S. Cl. 260—250 8 Claims

A process for preparing 2-amino-3-hydroxyquinoxalines which comprises contacting certain 2,3-dihydroxyquinoxaline compounds with certain primary amines at a temperature of about 100° C. to about 250° C. and a pressure of about 500 p.s.i. to about 3500 p.s.i. The 2-amino-3-hydroxyquinoxaline compounds are useful as intermediates in the preparation, for example, of dyes and pigments.

3,446,810

CAUSTIC FUSION OF POLYCYCLIC AROMATIC COMPOUNDS

Chi Kang Dien, Buffalo, and Walter Robert Demler, Hamburg, N.Y., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Continuation of application Ser. No. 483,811, Aug. 30, 1965. This application Dec. 26, 1967, Ser. No. 693,677
Int. Cl. C09b *3/00;* C07d *51/80;* C07b *29/00*
U.S. Cl. 260—263 22 Claims

An improved method for production of organic polycyclic compounds such as vat dyestuffs and pigments by caustic fusion of intermediate polycyclic compounds. The improvement resides in the use of a specific group of glycols and lower mono alkyl ethers thereof.

3,446,811

2-PHENOXY-2-PHENYL ACETAMIDES

Ivan C. Nordin and Robert F. Parcell, Ann Arbor, Mich., assignors to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Filed Apr. 23, 1965, Ser. No. 450,510
Int. Cl. C07d *29/12;* C07c *103/30*
U.S. Cl. 260—294 7 Claims

2-phenoxy-2-phenylacetamides substituted on the amide nitrogen by a tertiary aminoalkyl group; and acid-addition salts. The compounds have pharmacological activity as anti arrhythmic agents capable of restoring normal cardiac rhythm. The compounds can be produced by (a) reacting 2-phenoxy-2-phenylacetic acid or a reactive derivative with a tertiary aminoalkyl amine, or by (b) reacting an α-halophenylacetamide substituted on the amide nitrogen by a tertiary aminoalkyl group, with an alkali metal phenoxide.

3,446,812

BIS(N,N'-DIETHYLENEPHOSPHORAMIDES)

Doris Ruth Seeger, Ridgewood, and Andrew Stephen Tomcufcik, Old Tappan, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Sept. 17, 1964, Ser. No. 397,319
Int. Cl. C07f *9/56, 9/58, 9/60*
U.S. Cl. 260—296 6 Claims

This disclosure describes compounds of the class of N''-heterocyclic substituted bis(N,N'-diethylenephosphoramides) useful as curing catalysts for epoxy resins and as growth inhibitors of transplanted mouse tumors.

3,446,813

CERTAIN 3-HYDROXY 1,2,5-THIADIAZOLES AND A PROCESS FOR PREPARING THEM

Melvin Perelman, Gayton, England, Reuben G. Jones, Indianapolis, Ind., and Stephen A. Mizsak, Monroeville, Pa., assignors to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Continuation-in-part of application Ser. No. 408,377, Nov. 2, 1964. This application Dec. 7, 1966, Ser. No. 599,707
Int. Cl. C07d *91/68;* A61k *27/00*
U.S. Cl. 260—302 7 Claims

The present invention concerns certain novel 3-hydroxy-4-substituted-1,2,5-thiadiazoles in which the substituent in the 4-position is a group such as branched-chain alkyl, cycloalkyl, β-alkylmercaptoethyl, vinyl, phenyl, substituted phenyl, benzyl, and substituted benzyl. The invention further concerns a novel process for the preparation of compounds of the disclosed type by the reaction of an α-amino amide or an acid addition salt thereof with thionyl chloride or thionyl aniline. By virtue of their ability to suppress the growth of bacteria and fungi, the compounds provided are useful ingredients of disinfectant solutions.

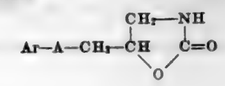
3,446,814

PROCESS FOR THE PREPARATION OF SUBSTITUTED OXAZOLIDONES

Manfred Budnowski, Dusseldorf-Holthausen, Germany, assignor to Henkel & Cie GmbH, Dusseldorf-Holthausen, Germany, a corporation of Germany

No Drawing. Filed July 19, 1966, Ser. No. 566,254
Claims priority, application Germany, July 24, 1965, H 56,674
Int. Cl. C07d *85/28*
U.S. Cl. 260—307 7 Claims

The present invention relates to a process for the preparation of oxazolidones-(2) substituted in the 5 position of the formula



wherein Ar represents an aryl radical and A represents an oxygen or sulfur atom, which comprises reacting triglycidyl isocyanurate with compounds of the formula

Ar—A—H

wherein Ar and A have the above-assigned meanings.

3,446,815

PREPARATION OF AMINOPHENYL-NITROIMIDAZOLES

Janos Kollonitsch, Westfield, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Sept. 2, 1966, Ser. No. 576,820
Int. Cl. C07d *49/36*
U.S. Cl. 260—309 3 Claims

2-(aminophenyl)-4(5)-nitroimidazoles are prepared by reduction of 2-(nitrophenyl)-4(5)-nitroimidazoles. The 2-(aminophenyl)-4(5)-nitroimidazoles are useful as intermediates in the preparation of 2-halophenyl-5-nitroimidazoles which in turn are useful in the treatment of protozoan-caused diseases.

3,446,816

SUBSTITUTED IMIDAZOLIDINONES AND IMIDAZOLIDINETHIONES

William Blythe Wright, Jr., Woodcliff Lake, N.J., and Herbert Joseph Brabander, Nanuet, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Continuation-in-part of application Ser. No. 457,811, May 21, 1965. This application July 21, 1967, Ser. No. 654,955
Int. Cl. C07d *57/00;* A61k *27/00*
U.S. Cl. 260—309.7 10 Claims

The preparation of 1-[(3-azabicyclo[3.2.2]nonan-3-yl) alkyl]-3-aryl-2-imidazolidinones and imidazolidinethiones are described, which are novel compounds. These compounds are useful as tranquilizers.

3,446,817

WATER-INSOLUBLE ANTHRAQUINONE DYESTUFFS

Edwin Dennis Harvey and Cyril Eric Vellins, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Nov. 10, 1966, Ser. No. 593,269
Claims priority, application Great Britain, Nov. 22, 1965, 49,432/65; June 27, 1966, 28,728/66
Int. Cl. C09b *1/16, 1/36*
U.S. Cl. 260—326 2 Claims

Water-insoluble anthraquinone dyestuffs which contain up to four acylaminomethyleneamino groups, and the use of said dyestuffs for coloring synthetic textile materials.

3,446,818

PROCESS FOR THE PREPARATION OF ALKYLENE MONOTHIOCARBONATES

Genevieve Lebrasseur, born Nicoud, Bully-les-Mines, France, assignor to Ethylene-Plastique, Paris, France, a French society

No Drawing. Filed Dec. 20, 1966, Ser. No. 603,106
Claims priority, application Great Britain, Dec. 23, 1965, 54,569/65
Int. Cl. C07d *99/00*
U.S. Cl. 260—327 8 Claims

A process is provided for preparing alkylene monothiocarbonates wherein carbon oxysulfide is reacted with an alkylene oxide at a temperature of from 0 to 70° C. in the presence of a catalytic system. The catalytic system contains an alkali metal halide such as lithium, sodium or potassium iodide, lithium or sodium bromide or lithium chloride, water of from 2 to 12% by weight of the alkali metal halide present and a co-catalyst. The co-catalyst may be a compound such as a sulfonium halide, a xanthate or hydrogen sulfide.

3,446,819

3-ALKENOXYOXETANES

Alan E. Ardis, North Haven, and John A. Wojtowicz, East Haven, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed June 14, 1966, Ser. No. 557,377
Int. Cl. C07d *3/00;* C07f *9/08;* C08k *1/60*
U.S. Cl. 260—333 2 Claims

Alkenoxyoxetanes are prepared by isomerizing an allyloxyoxetane compound in the presence of a catalyst, such as potassium t-butoxide, lithium hydroxide, etc. In turn, the alkenoxyoxetanes can be hypochlorinated to yield the corresponding hydroxyoxetanes. The hydroxyoxetanes on reaction with organic phosphites yield oxetane ring-containing phosphites useful as stabilizers for halogen-containing resins.

3,446,820

SUBSTITUTED BENZOXAZOCINES AND INTERMEDIATES

Murle W. Klohs, Tarzana, and Francis J. Petracek, Agoura, Calif., assignors to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware

No Drawing. Filed Apr. 3, 1967, Ser. No. 627,676
Int. Cl. C07d *87/54*
U.S. Cl. 260—333 4 Claims

This invention is directed to 5-(3-amino-n-propyl)-1-phenyl-1,3,4,6-tetrahydro-5H-benz[f]-2,5-oxazocines, to mono- and di-loweralkylamino equivalents thereof, and to 5-(2-cyanoethyl)-1-phenyl-1,3,4,6-tetrahydro-5H-benz[f]-2,5-oxazocine intermediates obtained in their synthesis. The final products have significant pharmacological activity as central nervous system depressants.

3,446,821

INTERMEDIATES USEFUL IN PREPARATION OF BUTENOLIDES AND PROCESS THEREFOR

Josef Fried, Chicago, Ill., and Eugene E. Galantay, Morristown, N.J., assignors, by mesne assignments, to E. R. Squibb & Sons Inc., New York, N.Y., a corporation of Delaware

No Drawing. Original application Sept. 17, 1964, Ser. No. 397,300, now Patent No. 3,326,937, dated June 20, 1967. Divided and this application Feb. 20, 1967, Ser. No. 623,173
Int. Cl. C07d *5/16;* A61k *27/00;* A01n *9/24*
U.S. Cl. 260—343.6 5 Claims

This invention relates to the preparation of triphenylmercaptomethyl-α-tetronic acid which may then be converted with an ammonium compound to the corresponding α-aminobutenolides. These latter compounds have utility as antibacterial agents used to combat infections e.g. caused by the organism *Staphylococcus aureus* and may also be used as disinfectants or sterilizing agents in conventional vehicles. This compound may serve as an intermediate in the preparation of heavy metal salts of butenolides.

3,446,822

METHOD FOR COLOR IMPROVING 5,6,7,8,9,9-HEXAHALO - 1,2,3,4,4a,5,8,8a - OCTAHYDRO-5,8-METHANO-2,3-NAPHTHALENE DICARBOXYLIC ANHYDRIDE BY TREATMENT WITH A LOWER MONOHYDRIC ALKYL ALCOHOL

Morris Dunkel, Paramus, N.J., and Masao Yafuso, New York, N.Y., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Oct. 1, 1965, Ser. No. 492,294
Int. Cl. C07d *5/32;* C07b *29/00*
U.S. Cl. 260—346.3 5 Claims

A method for lightening the color of 5,6,7,8,9,9-hexahalo - 1,2,3,4,4a,5,8,8a - octahydro-5,8-methano-2,3-naphthalene dicarboxylic acid anhydride by treating said anhydride with a monohydric alcohol of one to five carbons at a temperature of from about 15–50 degrees C. at which

temperature the anhydride is insoluble and then separating the color improved alcohol from the anhydride.

3,446,823

17α-ETHYNYL-$\Delta^{1,3,5(10)}$-ESTRATRIENE AND PROCESS FOR THE PREPARATION THEREOF

Roberto Sciaky and Franco Mancini, Milan, Italy, assignors to Società Farmaceutici Italia, Milan, Italy, a corporation of Italy

No Drawing. Filed Nov. 17, 1966, Ser. No. 595,019
Claims priority, application Italy, Nov. 29, 1965, 26,437/65; July 8, 1966, 15,887/66
Int. Cl. C07c *169/08*
U.S. Cl. 260—397.5 3 Claims

Described is 3-(2′-chloro-ethoxy)-17α-ethynyl-17β-hydroxy-$\Delta^{1,3,5(10)}$-estratriene which is prepared by treating 17α-ethynyl-$\Delta^{1,3,5(10)}$-estratriene-3,17β-diol with ethylenecarbonate, sulphonating the resulting 3-(2′-hydroxy-ethoxy)-17α-ethynyl-17β - hydroxy-$\Delta^{1,3,5(10)}$-estratriene with the chloride of a sulphonic acid, and reacting the resulting 3-2′ - ethyoxyl-17α-ethynyl-17β-hydroxy-$\Delta^{1,3,5(10)}$-estratriene sulphonate with lithium chloride. 3-(2′-chloro-ethoxy)-17α-ethynyl-17β-hydroxy-$\Delta^{1,3,5(10)}$estratriene is useful as an antiovulatory.

3,446,824

DIRECT PROCESS FOR THE PREPARATION OF ORGANOGERMANIUM HALIDES

Kurt Moedritzer, Webster Groves, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Dec. 10, 1965, Ser. No. 513,114
Int. Cl. C07f *7/00*
U.S. Cl. 260—429 14 Claims

The present invention relates to the preparation of organogermanium halides. The process of the invention comprises the contacting of elemental particulate germanium with a gaseous hydrocarbyl halide.

3,446,825

SUBSTITUTED pi-ALLYL PALLADIUM CHLORIDE COMPLEXES

Robert G. Schultz, St. Louis, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Apr. 18, 1966, Ser. No. 543,031
Int. Cl. C07f *15/00, 1/20*
U.S. Cl. 260—429 25 Claims

The present invention relates to pi-allyl complexes, particularly palladium chloride complexes derived from olefins in the presence of a metal acetate and cupric chloride. The compounds of the invention can be used as catalysts, oil additives, gasoline additives, and antioxidants.

3,446,826

PREPARATION OF ALKYLTIN CHLORIDES, BROMIDES, AND IODIDES

Harold Coates, Wombourn, and Peter Albert Theodore Hoye, Dunsley, Kinver, Stourbridge, England, assignors to Albright & Wilson (Mfg.) Limited, Oldbury, near Birmingham, Warwickshire, England, a British company

No Drawing. Filed Nov. 12, 1965, Ser. No. 507,578
Claims priority, application Great Britain, Dec. 2, 1964, 49,071/64
Int. Cl. C07f *7/22*
U.S. Cl. 260—429.7 19 Claims

The present invention provides a process for preparing alkyltin halides which comprises reacting an alkyl chloride, alkyl bromide or alkyl iodide with metallic tin in the initial presence of, as catalyst, a salt containing an inorganic cation and an anion selected from the group consisting of halostannite anions $(SnX_3)^-$ and halostannate anions $(R_nSnX_{(5-n)})=$ and $(R_nSnX_{5-n})^-$, wherein each X is a chlorine, bromine or iodine atom, each R is an alkyl group, and n is an integer 0–3, thereby forming alkyltin halide and receiving said alkyltin halide.

3,446,827

ORGANOTIN OR MERCURY (CARBOXY HYDROCARBYLENE AMIDES)

Herbert Schwartz, Chimes Terrace, Vineland, N.J. 08360, and Joseph B. Skaptason, 12700 Prospect Ave., Rte. 30, Kansas City, Mo. 64146

No Drawing. Filed Apr. 5, 1966, Ser. No. 540,200
Int. Cl. C07f *3/12, 7/22*
U.S. Cl. 260—429.7 15 Claims

Organometallic salts of the formula

I

wherein R is an organic radical, R′ and R″ are selected from the group consisting of aliphatic radicals of 1 to 18 carbon atoms, cycloaliphatic radicals of 3 to 8 carbon atoms, aryl radicals and araliphatic radicals, R‴ is selected from the group consisting of hydrogen, aliphatic radicals of 1 to 18 carbon atoms, cycloaliphatic radicals of 3 to 8 carbon atoms, aryl radicals and araliphatic radicals and R″ and R‴ taken together with the nitrogen atom may form a heterocyclic radical, M is a metal in its highest state of oxidation and n and m are integers from 1 to 3, and $m+n$ is not greater than 4.

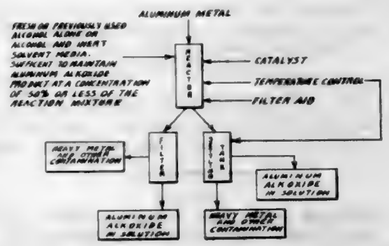
The organometallic salts of Formula I have a wide range of biocidal activity and are useful as bactericides, fungicides, nematocides, acaricides, insecticides and as pre- and post-emergence herbicides.

3,446,828

PROCESS FOR MAKING ALUMINUM ALKOXIDES AND SEPARATION OF IMPURITIES THEREFROM

August J. Buzas, Bethleham, and Remsen T. E. Schenck, Bangor, Pa., assignors to Keystone Chemurgic Corporation, Bethlehem, Pa., a corporation of Pennsylvania

Filed Feb. 9, 1965, Ser. No. 431,397
Int. Cl. C07f *5/06*
U.S. Cl. 260—448 3 Claims



A process is described for the separation of pure aluminum alkoxide from the impurities resulting from the reaction of metallic aluminum and the corresponding alcohol. The process includes the steps of maintaining the reaction mixture at a temperature slightly below the boiling point of the alcohol while allowing the impurities to settle from the reaction product and then decanting the alkoxide in alcohol solution. A further embodiment of the process includes the step of maintaining an ambient temperature about the reaction vessel slightly below the boiling point of the alcohol. A further embodiment includes the step of introducing sufficient excess alcohol to limit the alkoxide product of the reaction to about 50% of the total solution.

3,446,829

CONTACT MASS FOR PREPARING HALOGENOSILANES AND PROCESS THEREFOR

Hendrik Frits Zock, Vlaardingen, Netherlands, assignor to Lever Brothers Company, New York, N.Y., a corporation of Maine

Filed Jan. 24, 1966, Ser. No. 522,698
Claims priority, application Great Britain, Jan. 27, 1965, 3,718/65
Int. Cl. C07f *7/02*
U.S. Cl. 260—448.2 18 Claims

This specification is concerned with a contact mass containing silicon, a copper or silver catalyst and a cadmium promoter. This specification is also concerned with the use of this contact mass for the preparation of halogenosilanes.

3,446,830

PROCESS FOR THE PRODUCTION OF HYDROXYMETHYL-SUBSTITUTED ORGANOSILOXANES

Hans Niederprum, Monheim, Walter Simmler, Odenthal-Schlingbofen, and Elmar-Manfred Horn, Kurten, Bezirk, Cologne, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed June 29, 1966, Ser. No. 561,358
Claims priority, application Germany, July 3, 1965, F 46,519
Int. Cl. C07f *7/18*
U.S. Cl. 260—448.2 6 Claims

Process for preparing organosiloxanes which contain at least one structural unit having the formula:

$$HO-CH_2-Si(CH_3)_m-O_{\frac{3-m}{2}}$$

wherein m is 1 or 2 and as the remaining units, if any, structural units of the formula

$$R_nSiO_{\frac{4-n}{2}}$$

wherein n is 1, 2 or 3 and R is alkyl or aryl under conditions whereby substantially no side reactions take place and namely by reacting an acyloxymethylsilicon compound selected from the group consisting of silane derivatives

$$(CH_3)_mSiR''_{3-m}$$
$$CH_2-O-C(=O)-R'$$

wherein m is 1 or 2, R′ is hydrogen, methyl, propyl or butyl and R″ is OCH_3, OC_2H_5, OC_3H_7 or

$$O-C(=O)-R'$$

or an organosiloxane containing at least one structural unit of the formula:

$$(CH_3)_mSiO_{\frac{3-m}{2}}$$
$$CH_2-O-C(=O)-R'$$

the remaining units, if any, having the formula

$$R_nSiO_{\frac{4-n}{2}}$$

at a temperature of between 0 and 100° C. with an alkali metal borohydride and either boron trihalide or a silane derivative of the formula R_aSiCl_{4-a} in which a is 0, 1, 2 or 3 following which the product obtained is hydrolyzed with aqueous mineral acid or alkali metal hydroxide.

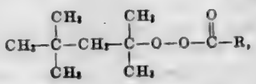
3,446,831

ESTERS OF 1,1,3,3-TETRAMETHYLBUTYL HYDROPEROXIDE

Orville Leonard Mageli and Douglas John Bolton, Buffalo, N.Y., assignors to Wallace & Tiernan Inc., East Orange, N.J., a corporation of Delaware

No Drawing. Filed Nov. 9, 1966, Ser. No. 592,988
Int. Cl. C07c *69/22, 73/10*
U.S. Cl. 260—453 6 Claims

Organic peroxyesters, initiators for the polymerization of ethylenically unsaturated monomers, having the general formula:



where

R is an alkyl radical, branched at the alpha carbon, having from 3 to 20 carbon atoms, are disclosed. These novel compounds are especially useful in curing unsaturated polyester resins, and in the polymerization of styrene and vinyl chloride.

3,446,832

ALKALI METAL SALTS OF N-ALKOXY SUBSTITUTED PHENOXY ALKYLENE AMIDES

Jordan P. Berliner and Sidney B. Richter, Chicago, Ill., assignors to Velsicol Chemical Corporation, Chicago, Ill., a corporation of Illinois

No Drawing. Continuation-in-part of application Ser. No. 388,915, Aug. 11, 1964. This application Nov. 7, 1966, Ser. No. 592,276
Int. Cl. C07c *119/20*; A01n *9/24*
U.S. Cl. 260—453 7 Claims

Alkali metal salts of N-alkoxy substituted phenoxy alkylene amides useful as herbicides and as intermediates in the production of other compounds, particularly herbicides.

3,446,833

CATALYTIC AMMOXIDATION OF OLEFINS TO NITRILES

Enrico Cavaterra, Natale Ferlazzo, and Guido Petrini, Milan, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy

No Drawing. Filed Dec. 19, 1966, Ser. No. 602,499
Claims priority, application Italy, Dec. 28, 1965, 28,834/65
Int. Cl. C07c *121/02, 121/32*
U.S. Cl. 260—465.3 10 Claims

A catalyst consisting essentially of cerium tellurite, and a process for the preparation of unsaturated nitriles by reacting an olefin, ammonia and oxygen in the presence of such catalyst.

3,446,834

CATALYTIC AMMOXIDATION OF OLEFINS TO NITRILES

Enrico Cavaterra and Natale Ferlazzo, Milan, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy, a corporation of Italy

No Drawing. Filed Dec. 19, 1966, Ser. No. 602,501
Claims priority, application Italy, Dec. 28, 1965, 28,833/65
Int. Cl. C07c *121/02, 121/32*
U.S. Cl. 260—465.3 10 Claims

A catalyst of an oxygenated tellurium compound and an oxygenated cerium compound, the tellurium:cerium ratio therein preferably ranging from about 9:1 to about 1:1, and a process for the preparation of unsaturated nitriles by reacting an olefin, ammonia and either oxygen or an oxygen-containing gas in the presence of such catalyst.

3,446,835

PREPARATION OF METHIONINE NITRILE AND METHIONINE

Jozef A. Thoma, Vaals, and Johannes W. Gielkens, Sittard, Netherlands, assignors to Stamicarbon N.V., Heerlen, Netherlands

No Drawing. Filed June 28, 1965, Ser. No. 467,757

Claims priority, application Netherlands, July 4, 1964, 6407632

Int. Cl. C07c *149/24, 121/02, 149/14*

U.S. Cl. 260—465.5 3 Claims

A process for the conversion of β-methylmercaptopropionaldehyde into γ-methylmercapto-α-aminobutyronitrile in one stage, using ammonia and a cyanide, is disclosed, wherein the aqueous reaction medium in which the conversion is carried out is maintained saturated with ammonia at all times during the reaction. The nitrile product may then be hydrolyzed to produce methionine.

3,446,836

DIMERIZATION OF ACRYLONITRILE TO 1,3-DICYANO-BUTENE-3

Arthur Lambert and Denis Pemberton, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Feb. 3, 1967, Ser. No. 613,768

Claims priority, application Great Britain, Feb. 18, 1966, 7,277/66

Int. Cl. B01j *9/00*; C07c *121/20, 103/14*

U.S. Cl. 260—465.8 7 Claims

Functional derivatives of α,β-unsaturated carboxylic acids, including nitrile, ester and amide derivatives, are converted to their dimers in the presence of catalysts which are tertiary amines having at least one nitrogen atom common to two or three rings, for example triethylene diamine, quinuclidine and pyrrocoline.

3,446,837

3 - (N - SUBSTITUTED - ACYLAMINO) - 2,4,6 - TRIIODOPHENYL FATTY ACID COMPOUNDS

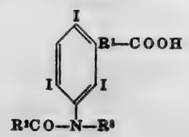
Vernon H. Wallingford, Ferguson, Mo., assignor to Mallinckrodt Chemical Works, St. Louis, Mo., a corporation of Missouri

No Drawing. Filed Oct. 17, 1963, Ser. No. 317,074

Int. Cl. C07c *101/44, 25/04*

U.S. Cl. 260—471 18 Claims

3-(N-substituted-acylamino)-2,4,6 - triiodophenyl fatty acid compounds of the general formula:



wherein R^1 is a lower divalent aliphatic radical containing not more than four carbon atoms selected from the group consisting of straight and branched chain paraffinic radicals and branched chain olefinic radicals, R^2 is a lower alkyl radical, and R^3 is selected from the group consisting of primary and secondary lower monovalent aliphatic radicals, lower alkyl esters thereof and salts thereof with pharmaceutically acceptable cations. Such acids and salts are useful as roentgenographic contrast agents in oral cholecystography and such lower alkyl esters are useful intermediates in the preparation of the acids.

3,446,838

NOVEL ACIDS AND ESTERS DERIVED FROM HALOGENATED PHENOLS

Laszlo Szobel, Grenoble, Maurice Trousier, Pierre-Benite, and Jacques Vuillemenot, La Mulatiere, France, assignors to Ugine Kuhlmann, Paris, France, a corporation of France

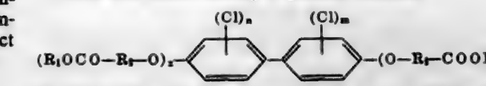
No Drawing. Continuation-in-part of application Ser. No. 256,532, Feb. 6, 1963. This application Sept. 20, 1965, Ser. No. 488,812

Claims priority, application France, Feb. 10, 1962, 887,628

Int. Cl. C07c *69/66*

U.S. Cl. 260—473 1 Claim

Acids and esters having a general formula



in which R_1 is either a hydrogen atom or an alkyl radical of 1 to 4 carbon atoms and R_2 is alkylene of from 1 to 3 carbon atoms, and where $(x+y)$ is an integer from 1 (wherein either x or y is zero) to 2, $(m+n)$ is the integer 8 or 9, and $(x+y+m+n)$ is equal to 10; said acids and esters being generally used in producing polyester resins, hardening agents for epoxy resins, etc.

3,446,839

PRODUCTION OF ALKYL HYDROXY-PIVALATES

Jurgen F. Falbe, Bonn, Germany, and Nicolaas Huppes, Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 18, 1966, Ser. No. 528,397

Claims priority, application Germany, Sept. 22, 1965, S 99,581

Int. Cl. C07c *69/66*

U.S. Cl. 260—484 6 Claims

Process of initially reacting an alkyl methacrylate, carbon monoxide, and hydrogen in the presence of a rhodium-containing catalyst and a tertiary phosphine to produce α-formylisobutyrates and then raising the temperature to produce alkyl hydroxypivalates, thereby hydroformylating and hydrogenating sequentially in one operation without a change of catalyst or gas.

3,446,840

PROCESS FOR THE CATALYTIC OXIDATION OF PROPYLENE

Tsuneyuki Kato, Yokohama, Atsushi Aoshima, Kawasaki-shi, Yasuhiro Kubota, Yokohama, and Kenji Matsumura, Kawasaki-shi, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan

No Drawing. Filed Feb. 24, 1966, Ser. No. 529,628

Int. Cl. C07c *57/04, 51/20*; B01j *11/82*

U.S. Cl. 260—533 10 Claims

A process for the catalytic oxidation of propylene which comprises contacting propylene at an elevated temperature and in the gas phase with oxygen or an oxygen-containing gas to produce acrolein and/or acrylic acid by using a novel catalyst having the following formula;

$$Bi_aFe_bP_cB_dMo_eO_f$$

wherein a, b, c, d, e, and f are the atomic ratios of the respective elements constituting the catalyst and a is 0.1 to 12, b is 0.1 to 12, c is 0.1 to 2, d is 0.1 to 4, e is 12 and f is 35 to 83.

3,446,841

ISOLATION OF 5-HYDROXY-7-CHLORTETRACYCLINE

Lester Allen Mitscher, Pearl River, and John Henry Edward James Martin, New City, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Apr. 22, 1966, Ser. No. 544,359

Int. Cl. C07c *103/19*

U.S. Cl. 260—559 5 Claims

This disclosure describes a process for purifying 7-chloro-5-hydroxytetracycline by means of partition chromatography wherein the partition column developed a pH gradient.

3,446,842

PRODUCTION OF N,N-DIMETHYLFORMAMIDE

Kenzie Nozaki, El Cerrito, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 4, 1966, Ser. No. 570,158

Int. Cl. C07c *103/02, 103/36*

U.S. Cl. 260—561 8 Claims

Dimethylformamide is produced by carbonylation of mixtures of ammonia and methyl amines in the presence of certain cobalt-containing catalysts.

3,446,843

β-DIALKYLAMINOALKYL ETHERS AND THIOETHERS

Carl Bordenca, Ponte Vedra Beach, and John M. Derfer, Jacksonville, Fla., assignors, by mesne assignments, to SCM Corporation, New York, N.Y., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 479,009, Aug. 11, 1965. This application Jan. 9, 1967, Ser. No. 607,876

Int. Cl. A01n *9/20*; C07c *87/40, 87/127*

U.S. Cl. 260—563 28 Claims

A class of compounds comprising β-dialkylaminoalkyl ethers and thio-ethers of terpenoid and nonterpenoid organic alcohols and mercaptans has been prepared. The compounds have been found to be effective insecticides and insect repellents. Additionally, a defined subclass of compounds has been found to be synergizers for conventional insecticides such as the pyrethrins and allethrin. Insecticidal and insect repellent compositions comprising the compounds are described. Processes which comprise contacting an insect environment with the compounds and compositions of this invention have been found to be effective in controlling common insect pests.

3,446,844

TRI(C_5–C_{10} ALKYL) m- and p-NITROBENZYL QUATERNARY AMMONIUM HALIDES

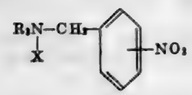
Lawrence E. Carosino, Woodside Hills, Del., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 3, 1966, Ser. No. 517,990

Int. Cl. C07c *87/68*

U.S. Cl. 260—567.6 4 Claims

Compounds of the formula



in which X is Cl or Br, the NO_2 is in the m- or p-position, and each R group is a normal alkyl group containing 8–10 carbons are useful with a non-ionic dispersing agent therefor a non-phytotoxic water dispersible mildewcide compositions.

3,446,845

α,α-DI-(FLUOROALKYL)BENZYLAMINES AND THEIR PREPARATION FROM AROMATIC COMPOUNDS AND FLUOROALKYLIDENEIMINES

David M. Gale, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 455,968, May 14, 1965. This application Dec. 30, 1965, Ser. No. 517,830

Int. Cl. C07c *87/28, 85/00, 149/32*

U.S. Cl. 260—570.8 7 Claims

α,α-Di(fluoroalkyl)benzylamines, e.g., 4,4'-oxybis[α,α-bis(trifluoromethyl)benzylamine], and their preparation from aromatic compounds and fluoroalkylideneimines, e.g., diphenyl ether and hexafluoroisoproylideneimine. The compounds are useful as precursors of polyamides.

3,446,846

AMINO 1,2,3,4,4a,9,10,10a - OCTAHYDRO - 2,4a-ETHANOPHENANTHRENES AND 2,3,4,4a,9,10-HEXAHYDRO-2,4a-ETHANOPHENANTHRENES

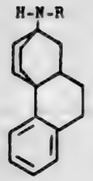
Joel G. Whitney, Claymont, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 1, 1966, Ser. No. 569,079

Int. Cl. C07c *15/30, 87/40*; A61k *27/00*

U.S. Cl. 260—578 5 Claims

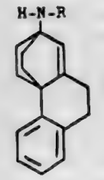
1. A compound selected from the group consisting of
(a) compounds of the formula



where

R is selected from the group consisting of hydrogen, methyl or ethyl,

(b) compounds of the formula



where

R is selected from the group consisting of hydrogen, methyl or ethyl, and

(c) salts of the compounds of formulae (a) and (b) above formed with a non-toxic anion.

3,446,847

POLY(DIFLUORAMINO)ALKANES

Jeremiah P. Freeman, Huntsville, Ala., assignor to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

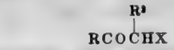
No Drawing. Filed Sept. 24, 1963, Ser. No. 311,613

Int. Cl. C07c *87/20, 87/22, 85/08*

U.S. Cl. 260—583 5 Claims

1. A method for the preparation of poly(difluoramino)

compounds which comprises reacting a member from the class consisting of



and

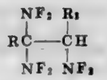
$$(XCH_2CO)_2(CH_2)_y$$

with a compound having the formula

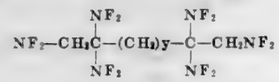
$$P(OR^1)_3$$

followed by reaction with tetrafluorohydrazine, and finally with difluoramine in the presence of sulfuric acid in which R is selected from the group consisting of hydrogen and alkyl of 1 to 4 carbon atoms, R^1 is alkyl of 1 to 4 carbon atoms, R^2 is selected from the group consisting of hydrogen and methyl, X is selected from the group consisting of chlorine and bromine, and Y is an integer of 1 to 10.

3. A composition of matter selected from the group consisting of those compounds having the formula



in which R is selected from the group consisting of hydrogen and alkyl of 1 to 4 carbon atoms, and R^2 is selected from the group consisting of hydrogen and methyl, and



in which y is an integer of 1 to 10.

3,446,848
MANUFACTURE OF AMINO POLYETHER POLYOLS
Roxburgh Richmond Aitken and Raymond Joseph Marklow, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed May 3, 1966, Ser. No. 547,163
Claims priority, application Great Britain, May 19, 1965, 21,222/65
Int. Cl. C07c *41/02, 85/00, 85/06*
U.S. Cl. 260—584 **5 Claims**

A process for the manufacturing of a polyether polyol by reacting an alkylene oxide with a mixture of (a) a hydroxyalkylamine that is liquid 100° C. and contains at least two active hydrogen atoms in the molecule and (b) one of (1) a polyhydric alcohol having a melting point in excess of 100° C., (2) an amine having at least two amino groups and at least three active hydrogen atoms in the molecule, the amino groups being the sole active hydrogen-containing groups and (3) mixtures of (1) and (2).

3,446,849
NAPHTHALENE AND PHENANTHRONE DERIVATIVES AND METHODS OF PREPARING THE SAME
Marinus Los, Trenton, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed June 4, 1964, Ser. No. 372,690
Int. Cl. C07c *49/54*
U.S. Cl. 260—586 **3 Claims**

This disclosure describes compounds of the class of trans - 1,2,4a,5,6,7,8,8a - octahydro - 4a - lower alkyl - 5-t-butoxy-2-oxo-1-naphthaldehydes and trans-1,2,4a,5,6,7,8,8a - octahydro - 4a - lower alkyl - 5 - benzyloxy - 2 - oxo-1-naphthaldehydes useful as intermediates in the synthesis of biologically active steroid moieties.

3,446,850
METHOD FOR PREPARING DIHYDROISOPHORONE
Demetrio P. Cotrupe, Rifle, Colo., and William E. Wellman, Edison, and Paul E. Burton, Westfield, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Dec. 14, 1966, Ser. No. 601,537
Int. Cl. C07c *35/18*
U.S. Cl. 260—586 **11 Claims**

Catalytic hydrogenation of feed comprising 5–15 mole percent isophorone, 5–15 mole percent 3,3,5-trimethylcyclohexanol, and 70–90 mole percent dihydroisophorone yields high selectivity to dihydroisophorone with low amounts of impurities. Temperature must be above 210° C. with molar ratio of hydrogen to isophorone preferably below 1.0.

3,446,851
PRODUCTION OF 2-HYDROXY-2,3-DIHYDROCITRAL
Kurt Schneider, Limburgerhof, Pfalz, and Heinrich Pasedach and Horst Pommer, Ludwigshafen am Rhine, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen am Rhine, Germany
No Drawing. Filed July 24, 1964, Ser. No. 385,084
Claims priority, application Germany, July 30, 1963, B 72,917
Int. Cl. C07c *45/04, 45/00*
U.S. Cl. 260—602 **3 Claims**

Production of 2-hydroxy-2,3-dihydrocitral by adding primary or secondary saturated alcohol to triple bond of 2,2,6-trimethyl-6-ethinyltetrahydropyrane and splitting of resultant vinyl ether in an acidic aqueous medium at 0–160° C.

3,446,852
MESOMERIC PHOSPHONIUM SALTS
Gail H. Birum, Kirkwood, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Mar. 30, 1966, Ser. No. 538,588
Int. Cl. C07f *9/28, 9/54*
U.S. Cl. 260—606.5 **19 Claims**

Mesomeric diphosphonium salts, $[(Aryl_3P)_2CSG]_aZ^v$ where G is alkyl or aryl and where the alkyl may be substituted by halogen and phenyl by halogen and/or nitro, Z is an anion with valence *v*, and *a* is equal to *v*; and the method of preparing the same, e.g., by reacting a phosphorane such as hexaphenylcarbodiphosphorane with an appropriate organosulfenyl halide to give compounds where Z is halogen and which can be reacted with other salts to convert Z to another anion. The products are pest control agents, textile auxiliaries, petroleum additives, flame-proofers and ion-exchangers.

3,446,853
PRODUCTION OF ETHERS
Archie Newton and Frank Brangwin, Norton-on-Tees, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed Aug. 5, 1966, Ser. No. 570,421
Claims priority, application Great Britain, Aug. 18, 1965, 35,366/65
Int. Cl. C07c *41/12*
U.S. Cl. 260—614 **10 Claims**

Methyl vinyl ether is separated from acetaldehyde by an extractive distillation in which an aliphatic alcohol is used as extractant. The alcohol is preferably methanol, the novel distillation being advantageously used in a continuous process for the production of methyl vinyl ether by pyrolysis of dimethyl acetal. Methanol required for the formation of dimethyl acetal by the reaction of methanol and acetaldehyde is added via the distillation step.

3,446,854
PROCESS FOR THE PRODUCTION OF PARAFORMALDEHYDE
William G. Hughes, Plainfield, and Samuel Weiss, River Edge, N.J., and John Lambiris, New York, N.Y., assignors to Tenneco Chemicals, Inc., a corporation of Delaware
No Drawing. Filed Feb. 1, 1967, Ser. No. 613,108
Int. Cl. C07c *47/10*
U.S. Cl. 260—615.5 **10 Claims**

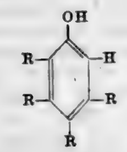
Paraformaldehyde of controlled molecular weight is prepared by flash-evaporating a deionized aqueous formaldehyde solution in a plurality of stages that are separated by and followed by polymerization periods. In a two-stage concentration, each of the evaporation steps is carried out in 2 to 120 seconds at 140° C. to 180° C. under reduced pressure. The 60 to 75 percent formaldehyde solution obtained from the first evaporation is polymerized at 60° C. to 90° C. for 30 to 120 minutes. The 82 to 88 percent formaldehyde solution obtained from the second evaporation is polymerized at 100° C. to 140° C. for 1.5 to 4 hours. After it has been cooled and solidified, the product may be dried to raise its paraformaldehyde content to 90 to 95 percent.

3,446,855
BISPHENOLS AND POLYCARBONATES THEREOF
Winston J. Jackson, Jr., and John R. Caldwell, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Original application Jan. 7, 1964, Ser. No. 336,133, now Patent No. 3,299,000, dated Jan. 17, 1967. Divided and this application Jan. 16, 1967, Ser. No. 623,162
Int. Cl. C07c *39/12*
U.S. Cl. 260—619 **5 Claims**

Novel 4,4' - (cyclohexylmethylene)bis(2,6 - dichlorophenols), as well as the alkyl, aryl, etc., derivatives thereof, are disclosed which can be used to prepare new polymers, especially polycarbonates, having many desirable properties, such as high second-order transition and heat-distortion temperatures.

3,446,856
METHYLATION OF PHENOLS
Stephen B. Hamilton, Jr., Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
No Drawing. Filed May 29, 1964, Ser. No. 371,189
Int. Cl. C07c *39/12, 39/02*
U.S. Cl. 260—620 **10 Claims**

1. The process of selectively methylating a phenol in the ortho position to the significant retardation of methylation in the meta and para positions, which comprises reacting, as the essential ingredients, methanol with a phenol having the general formula



where each R is a monovalent substituent selected from the group consisting of hydrogen, methyl, phenyl, and methyl-substituted phenyl, in the vapor phase in the presence of magnesium oxide as the catalyst, said reaction being carried out at a catalyst bed temperature in the range of 475–600° C.

3,446,857
PROCESS OF PREPARING FLUORODINITROETHANOL OR FLUORODINITROMETHANE FROM FLUOROTRINITROMETHANE
Horst G. Adolph, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy
No Drawing. Filed July 31, 1964, Ser. No. 387,556
Int. Cl. C07d *31/34, 33/10*
U.S. Cl. 260—633 **8 Claims**

1. The method of preparing fluorodinitromethane which comprises reacting fluorotrinitromethane with a reducing agent selected from the group consisting of hydrogen peroxide, potassium iodide, and sodium arsenite in an alkaline medium.

2. The method for preparing fluorodinitroethanol which comprises reacting fluorotrinitromethane with a reducing agent selected from the group consisting of hydrogen peroxide, potassium iodide, and sodium arsenite in the presence of a base and formaldehyde.

3,446,858
PROCESS FOR THE MANUFACTURE OF HEXAFLUOROPROPENE
Haruo Shingu and Makoto Hisazumi, Kyoto-shi, and Iwao Hisamoto, Nara-shi, Japan, assignors to Daikin Kogyo Company, Limited, Osaka-shi, Japan, a juridical person under the law of Japan
No Drawing. Filed Mar. 30, 1964, Ser. No. 355,961
Claims priority, application Japan, Mar. 30, 1963, 38/15,986
Int. Cl. CO7c *17/24, 17/00*
U.S. Cl. 260—653.3 **8 Claims**

Process for preparing hexafluoropropylene by pyrolyzing tetrafluoroethylene and/or octafluorocyclobutane in the presence of 50–95 mol percent of water vapor under adiabatic conditions at 700 to 900° C. and in which the pyrolysis temperatures are provided by premixing preheated reactants and superheated water vapor before introducing such materials into the pyrolysis reaction zone.

3,446,859
VAPOR PHASE CONDENSATION PROCESS
Edward D. Weil, Lewiston, and Hans L. Schlichting, Grand Island, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Filed June 11, 1962, Ser. No. 201,338
Int. Cl. C07c *21/18, 21/04*
U.S. Cl. 260—654 **5 Claims**

1. A process for the production of a chlorinated allyl halide of the formula

$$CZCl{=}CCl{-}CH_2X$$

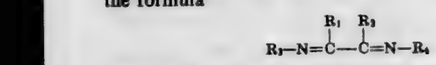
comprising contacting in the vapor phase in a reaction vessel packed with glass a chlorinated olefin of the formula

$$CZCl{=}CCl_2$$

wherein X is selected from the group consisting of fluorine, chlorine, and bromine and wherein Z is selected from the group consisting of chlorine and hydrogen, with a reactant selected from the group consisting of methyl chloride, methyl fluoride and methyl bromide, at a temperature from about 400 to 700 degrees centigrade, for a sufficient period of time from 1 to 60 seconds to effect a low level of conversion of the reactants to the desired chlorinated allyl halide, $CZCl{=}CCl{-}CH_2X$.

3,446,860
METHOD OF MAKING PHENYLLITHIUM
Oscar Francis Beumel, Jr., West Chester, Pa., assignor to Foote Mineral Company, Exton, Pa., a corporation of Pennsylvania
No Drawing. Filed June 29, 1967, Ser. No. 649,871
Int. Cl. C07f 1/02
U.S. Cl. 260—665 6 Claims
A solution of a monohalobenzene in ethyl ether is gradually added to a dispersion of lithium metal in benzene containing ethyl ether, using certain defined relationships between said monohalobenzene, ethyl ether, lithium and benzene, to provide phenyllithium in high yield and purity.

3,446,861
CYCLODIMERIZATION PROCESS
Henry R. Menapace, Stown, Neil A. Maly, Tallmadge, Gereld S. Benner, Akron, and Donald V. Hillegass, Kent, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
No Drawing. Filed June 20, 1968, Ser. No. 738,413
Int. Cl. C07c 3/60, 13/26, 11/16
U.S. Cl. 260—666 11 Claims
An improved process for the cyclodimerization of 1,3-butadiene hydrocarbons to form cyclic dimers of these 1,3-butadienes is disclosed. The catalyst system employed is a mixture of (1) an iron salt or complex, (2) a reducing agent which is an organometallic compound or a metal hydride wherein the metal is selected from Groups Ia, IIa, IIb and IIIa of the periodic system, and (3) a ligand of the formula



wherein R_1 and R_2 may be hydrogen, alkyl groups, or some other functional group such as halogen; and R_3 and R_4 are hydrocarbons containing double bond unsaturation in conjugation with the C=N unsaturation.

3,446,862
CYCLODIMERIZATION PROCESS
Henry R. Menapace, Stow, and Neil A. Maly, Tallmadge, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
No Drawing. Filed Oct. 2, 1967, Ser. No. 672,006
Int. Cl. C07c 3/00
U.S. Cl. 260—666 4 Claims
An improved process for the cyclodimerization of 1,3-diolefins is disclosed. The catalyst system employed is a mixture of (1) an iron salt or complex, (2) a ligand and (3) a reducing agent which is an organometallic compound or metal hydride, the metal portion of which is selected from Groups I, II and III of the Periodic System, and the reaction is conducted in an aromatic solvent system. The improvement comprises conducting the cyclodimerization reaction at temperatures of at least 85° C. and not greater than 130° C.

3,446,863
AROMATIC HYDROGENATION TO FORM CYCLOHEXANE WITH ADDED NITROGEN-CONTAINING COMPOUNDS
Frederick W. Steffgen, Laguna Beach, Calif., assignor to Atlantic Richfield Company, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed Feb. 16, 1967, Ser. No. 616,492
Int. Cl. C07c 5/10; C10g 35/08
U.S. Cl. 260—667 9 Claims
Process for hydrogenating aromatics with less isomerization to 5-membered carbon ring products. Hydrogenation is carried out in the presence of a nitrogen containing compound such as pyridine, ammonia and others. The hydrogenated product is substantially reduced in percentage of 5-membered ring components.

3,446,864
POLYALKYL BIPHENYLS AND PROCESS OF PREPARING SAME
Imre Puskas and Ellis K. Fields, Chicago, Ill., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana
No Drawing. Filed Mar. 28, 1967, Ser. No. 626,717
Int. Cl. C07c 15/08, 15/20
U.S. Cl. 260—668 17 Claims
The invention describes a process for preparing novel unsymmetrical polyalkylbiphenyls wherein mixtures of two properly selected alkyl homologs of benzene are treated with nitric acid at temperatures of about —20 to —50° C. The polyalkylbiphenyls are useful as antiknock materials, vapor phase heat transfer agents and intermediates in the synthesis of biphenyl polycarboxylic acids.

3,446,865
CATALYST AND CATALYTIC PROCESS
James F. Roth, St. Louis, and Andrew R. Schaefer, Greve Coeur, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 465,735, June 21, 1965. This application May 2, 1968, Ser. No. 726,245
Int. Cl. C07c 5/14, 5/18, 5/30
U.S. Cl. 260—669 14 Claims
This invention relates to an improved catalyst for the conversion of hydrocarbons. The invention may be applied to processes including dehydrogenation, dehydrocyclization, reforming, hydrocracking, isomerization and hydrogenation. The improved catalyst is characterized by freedom from poisoning, high physical strength, and long life and contains free radical properties which aid in carrying out the said catalytic reactions. The improved catalyst comprises from 0.1 to 30% by weight of carbon, referred to the composite catalyst, deposited by the condensation of unsaturated hydrocarbons, the said carbon being disposed upon a porous low acidity support having an acidity factor of no more than 2.0. The catalyst may also contain 0.1 to 5% by weight of a metal selected from the group consisting of alkali and alkaline earth metal compounds.

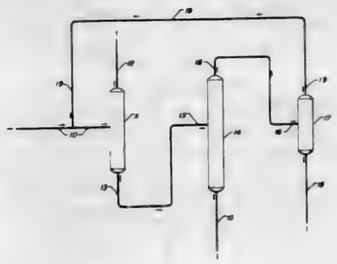
3,446,866
ALKYLATION PROCESS
Hugh Walter Stern, London, and John Robert Jones, Walton-on-Thames, England, assignors to The British Petroleum Company Limited, London, England, an English corporation
No Drawing. Filed May 29, 1967, Ser. No. 642,231
Claims priority, application Great Britain, June 3, 1966, 24,767/66
Int. Cl. C07c 3/56
U.S. Cl. 260—671 12 Claims
An alkylation process uses the reaction product of an aluminum halide and a cobalt halide as a homogeneous catalyst. The alkylation is performed at a temperature between 20° C. and 200° C. Usually an aromatic compound is alkylated by an olefin at the reflux temperature of the mixture. In an example 5 g. of aluminum chloride and 2 g. of cobaltous chloride were added to a litre of dry benzene and refluxed for 24 hours under nitrogen 200 g. of the resulting solution was decanted off and refluxed while 200 ml./min. ethylene was bubbled through at atmospheric pressure. The mixture was stirred vigorously throughout. After an hour no more ethylene was being absorbed and a small quantity of water was added to decompose the catalyst. 6% of the benzene was converted to a product containing 91.5% ethylbenzene, 7.8% triethylbenzene and 0.7% of higher polyalkylbenzenes. Air and moisture were carefully excluded from the catalyst during its preparation and use.

3,446,867
PURIFICATION OF DETERGENT ALKYLATES
Oliver C. Kerfoot and Thomas E. Howell, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 388,685, Aug. 10, 1964. This application Jan. 4, 1968, Ser. No. 695,584
Int. Cl. C11d 1/12; C07c 25/14; C07b 27/00
U.S. Cl. 260—671 1 Claim
A partially chlorinated detergent range normal paraffin or mixture thereof is condensed with benzene in the presence of aluminum chloride catalyst to provide a crude alkylation reaction mixture from whence a detergent alkylate fraction is obtained by distillation and then washed with concentrated sulfuric acid prior to the conversion thereof to water-soluble mono-sulfonic acid salt derivative via sulfur trioxide sulfonation.

3,446,868
DISPROPORTIONATION OF PROPANE
E. O. Box, Jr., Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Jan. 3, 1967, Ser. No. 606,560
Int. Cl. C07c 9/10, 3/62
U.S. Cl. 260—676 6 Claims
Propane is disproportionated into ethane and butanes by contact with an acidic cracking catalyst.

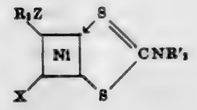
3,446,869
DEHYDROGENATION PROCESS AND CATALYST
George J. Nolan, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed July 14, 1966, Ser. No. 565,112
Int. Cl. C07c 11/22, 5/18
U.S. Cl. 260—680 10 Claims
Oxidative dehydrogenation of paraffinic and/or olefinic hydrocarbons with a catalyst consisting essentially of mixtures of at least 5 mol percent lead molybdate and at least 5 mol percent aluminum tungstate and/or cobalt tungstate.

3,446,870
SEPARATION OF PYROLYSIS GASES
Robert E. McHarg, Arlington Heights, Ill., assignor to Universal Oil Product Company, Des Plaines, Ill., a corporation of Delaware
Filed Dec. 27, 1966, Ser. No. 606,423
Int. Cl. C07c 7/04, 11/16; B01d 3/14
U.S. Cl. 260—681.5 6 Claims



A method for distilling the gaseous products from the thermal cracking of naphtha in a series of distillation columns whereby butadiene substantially free from C_3H_4 contaminants is recovered. The overhead product from the debutanizer column is subjected to further distillation at a pressure of 100 p.s.i.g. and a bottom temperature of 150° F. to produce an overhead product containing the C_3H_4 hydrocarbon contaminants and a bottoms product containing butadiene.

3,446,871
NICKEL COMPOUNDS
Perry L. Maxfield, Durango, Colo., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Dec. 30, 1966, Ser. No. 606,014
Int. Cl. C07f 15/04, 9/68, 9/90
U.S. Cl. 260—683.15 12 Claims
Complex nickel compounds of the formula



where R and R' are hydrocarbyl radicals, Z is one of phosphorus, arsenic, or antimony and X is halogen, prepared by reacting nickel halides, R_3Z ligand-forming compounds where R and Z are as defined, and either alkali metal dihydrocarbyldithiocarbamates or substituted or unsubstituted ammonium dihydrocarbyldithiocarbamates convert olefins to higher molecular weight derivatives thereof.

3,446,872
COMPOSITIONS FOR POLYCHLOROPRENE ADHESIVES
Takeshi Tanno, Ikutoshi Shibuya, and Masahiro Abo, Hitachi-shi, Japan, assignors to Hitachi Chemical, Ltd., Tokyo, Japan
Filed May 14, 1965, Ser. No. 455,738
Claims priority, application Japan, May 15, 1964, 39/27,202
Int. Cl. C08d 9/10; C09j 3/12
U.S. Cl. 260—845 9 Claims
The present disclosure is directed to a polychloroprene adhesive composition consisting essentially of polychloroprene rubber and a chelate polymer obtained by heat-condensing a chelate compound at a temperature of 100° C. to 150° C., said chelate compound being prepared by reacting a salt of a 2,6-dimethylol derivative of p-substituted phenol with a polyvalent metal salt solution. The adhesive composition of the present disclosure exhibits an improved cohesive strength at relatively high temperatures as well as normal temperatures.

3,446,873
PROCESS FOR MANUFACTURING DIENE GRAFT COPOLYMERS
Ichiro Saito, Kazuo Saito, and Takeshi Tanaka, Mishima-cho, Osaka, Japan, assignors to Kanegafuchi Chemical Industry Co., Ltd., Osaka, Japan, a corporation of Japan
No Drawing. Filed Apr. 28, 1965, Ser. No. 451,626
Claims priority, application Japan, July 28, 1964, 39/43,073
Int. Cl. C08f 15/40; C08d 3/02
U.S. Cl. 260—880 6 Claims
A process of manufacturing graft polymers comprising the steps of (A) coagulating synthetic diene rubber particles with a water soluble coagulant, and (B) polymerizing the rubber particles with a polymerizable ethylenically unsaturated monomer mixture while more than 90% of the rubber particles are less than 0.2 microns in diameter; the content of the monomer mixture being at least 0.1% water soluble, and the polymerizing being effected at a temperature ranging from 40° C. to 70° C., and for a period of time ranging from 2 hours to 10 hours, and while the rubber particles are coagulating and enlarging.

3,446,874

POLYMERIZABLE SOLVENT ADHESIVE COMPOSITION CONTAINING MIXED COBALT/ZINC CATALYST PROMOTER

Alan E. Varker, Philadelphia, Pa., assignor, by mesne assignments, to ESB Incorporated, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Mar. 4, 1966, Ser. No. 531,733
Int. Cl. C08f *1/74, 15/40*
U.S. Cl. 260—880 6 Claims

Compositions useful as adhesives for polystyrene- and ABS-type resins which consist of (1) a solute polymer selected from the group consisting of polystyrene, acrylonitrile-butadiene rubbers, acrylonitrile-butadiene-styrene resins, styrene-acrylonitrile resins, styrene-butadiene resins and polybutadiene dissolved in (2) a polymerizable solvent selected from chlorostyrene and mixtures of acrylonitrile with chlorostyrene, styrene or vinyl toluene and containing (3) an organic peroxide catalyst and (4) a catalyst promoter which is a mixture (ranging from 3:5 to 1:13) of cobalt and zinc carboxylic acid salts. The mixed catalyst promoter does not discolor the adhesive composition and provides a more rapid rate of curing than either the cobalt or the zinc salt used alone.

3,446,875

TRANSPARENT DENTURES

Paul Brückmann, Heino Logemann, and Carlhans Suling, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Jan. 13, 1964, Ser. No. 337,153
Claims priority, application Germany, Jan. 18, 1963, F 38,791
Int. Cl. A61c *13/22*; C08c *29/46*
U.S. Cl. 260—885 1 Claim

Transparent dental prosthesis prepared by the powder/liquid process wherein a mixture of finely divided bead methacrylate polymer is mixed with a liquid monomer which monomer comprises an acrylic or methacrylic acid ester containing at least one free hydroxyl group, preferably hydroxypropyl acrylate.

3,446,876

PHOSPHONITRILIC COMPOUNDS

David S. Breslow, Madelyn Gardens, Del., assignor to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed Apr. 28, 1966, Ser. No. 545,846
Int. Cl. C07d *105/02*; C07f *9/22*; C08b *27/68*
U.S. Cl. 260—927 3 Claims

Phenolic substituted phosphonitrilic compounds, and particularly the hexakis (3,5-di-tert-alkyl-4-hydroxyphenoxy)-cyclotriphosphazatrienes and the octakis (3,5-di-tert-alkyl-4-hydroxyphenoxy) cyclotetraphosphazatetraenes are described. The phosphonitrilic compounds, which can be produced by condensing the appropriate phosphonitrilic chloride with, for example, a sodium dialkyl-4-hydroxyphenoxide, are particularly useful as extraction resistant stabilizers for polyolefins.

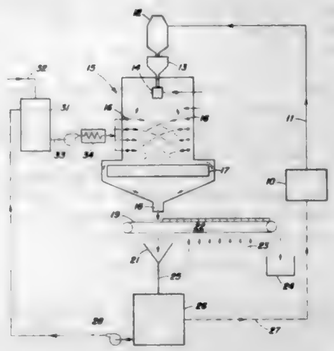
3,446,877

PROCESS FOR PRODUCING PRILLS

John J. Endler, Mountain Lakes, N.J., assignor to The Lummus Company, New York, N.Y., a corporation of Delaware

Filed Apr. 28, 1967, Ser. No. 634,666
Int. Cl. B22d *23/08*
U.S. Cl. 264—8 12 Claims

A process for producing urea prills wherein urea droplets are contacted with a liquid heat transfer medium to effect solidification thereof. Molten urea is introduced into a prilling chamber as a plurality of droplets and while falling through the chamber are contacted with a spray of an inert liquid heat transfer medium in which the urea both floats and is insoluble. The urea and heat transfer medium fall into a pan containing a circulating pool of the heat transfer medium and urea prills are



withdrawn from the pan floating on the heat transfer medium. The prills are separated from the heat transfer medium and the heat transfer medium recycled to the prilling chamber.

3,446,878

METHOD OF PRODUCING PENCIL LEAD

Yasushi Tsukahara, Tokyo, Japan, assignor to Dainihonbungu Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

No Drawing. Filed Mar. 30, 1965, Ser. No. 444,044
Int. Cl. C01b *31/00*
U.S. Cl. 264—29 3 Claims

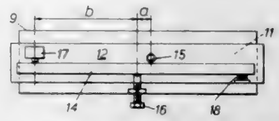
A method of producing hard pencil lead by first mixing together graphite, carbon black, a synthetic resin, plasticizer, and solvent, then extruding the mixture into fine straight sticks. The sticks are subsequently baked for eight hours at 300° C. and then for one hour at 1000° C. so as to completely carbonize the resin.

3,446,879

METHOD AND MEANS FOR PRESSURE-MOULDING OF ARTICLES BY CONTROLLING THE FLUID PRESSURE THROUGH UTILIZATION OF THE DEFORMATION OF THE PLATEN

Ronald Atkin, Lofthouse, Wakefield, England, assignor, by mesne assignments, to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey

Filed Feb. 15, 1966, Ser. No. 527,716
Claims priority, application Great Britain, Feb. 17, 1965, 6,796/65
Int. Cl. B29c *3/02*
U.S. Cl. 264—40 9 Claims



1. Method of controlling a pressure-molding operation consisting in compressing material between two faces by means of fluid pressure, positively restraining said faces from further relative movement, utilising the pressure and said restrainment to cause a slight temporary deformation in part of the pressing means, and using said deformation to automatically control the moulding pressure.

7. Pressure-moulding apparatus for carrying out the method according to claim 1, comprising a pair of platens

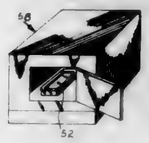
between which articles can be moulded, a fluid pressure system for moving one platen towards the other, spacing means for arresting said relative movement in a positive manner, means for controlling the system for it to exert sufficient pressure on one platen through the spacing means to cause slight deformation of said platen, operating means attached to said platen to be moved by slight deformation of the pressurised platen, and a pivoted lever bar positioned to be moved by said first operating means in a manner to magnify the actuating movement sufficiently to cause the operation of valve means in the pressure system to ease the applied fluid pressure.

3,446,880

METHOD OF MANUFACTURING A PROTECTIVE ATHLETIC PAD

James H. Enicks, 303 Ridgeview Drive, Greenville, Ohio 45331

Filed Dec. 31, 1964, Ser. No. 422,788
Int. Cl. B29d *27/06*
U.S. Cl. 264—45 3 Claims



5. APPLYING REINFORCING STRIPS WHERE NECESSARY AND APPLYING SKIN LAYER OVER PARTIALLY EXPANDED MEMBER.

6. HEATING TO COMPLETE BLOWING OF EXPANDED MEMBER AND FUSING SKIN THERETO.

1. The method of making a resilient pad member having a fluid impervious skin thereon and especially adapted for use as a protective athletic pad, said method comprising; spraying a thin first layer of plastisol on the surface of a concave mold cavity to form first skin, heating said mold and said first skin to gel the skin to a non-flowable condition without completely curing the skin; cooling the mold and the said skin, placing a measured quantity of a mixture of the same plastisol and a blowing agent in the mold cavity so as to be supported and confined by said first skin to form a second layer in said mold, again heating the mold and the layers therein to gel said second layer to a non-flowable condition without completely curing said second layer, positioning flexible reinforcing strips on said second layer while the second layer is still warm and spraying a thin third layer of the same plastisol without a blowing agent therein over said second layer and strips and with said second layer at its edge engaging the edge of said first layer thereby to form a second skin, and again heating the mold to complete the blowing of said second layer and completely to gel and cure said skins and to fuse said skins together and to said second layer to complete said pad.

3,446,881

INTER-WALL FOAMED THERMAL INSULATION

Ronald Robertson Poole, Berkhamsted, England, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Mar. 9, 1966, Ser. No. 532,958
Claims priority, application Great Britain, Apr. 1, 1965, 13,775/65
Int. Cl. B32b *1/02, 31/06*; B29d *27/00*
U.S. Cl. 264—45 4 Claims



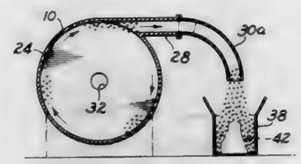
In the preferred form the inner liner member and the outer shell member of a refrigerator cabinet have applied to their juxtaposed spaced surfaces continuous substantially parallel flexible strips projecting inwardly about two-thirds the width of the space between said members and arranged alternately. The remaining space between the members is substantially filled with a polyurethane foam containing fluorinated hydrocarbon gas.

3,446,882

PROCESS OF FORMING A POLYSTYRENE STRUCTURE WITHIN A CONTAINER

Frank L. Landon, 855 Wick Lane, Glendora, Calif. 91740

Filed July 15, 1966, Ser. No. 565,548
Int. Cl. B29h; B29d
U.S. Cl. 264—45 10 Claims



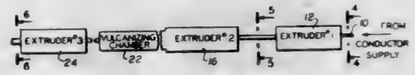
A rapid process for forming structures of expanded and fused polystyrene beads in a container or for cocooning an object therein, in which the beads are expanded by contact with a stream of hot air most of which is separated from the stream before the beads are delivered to the container. Sufficient heat is applied by the air to the beads so that the latent heat therein is sufficient to fuse the beads, thus eliminating the necessity of applying heat to the container to effect fusion of the expanded beads.

3,446,883

METHOD AND APPARATUS FOR PRODUCING CONDUCTORS SURROUNDED BY THREE OR MORE EXTRUDED LAYERS

Oscar G. Garner, Westfield, N.J., assignor to General Cable Corporation, New York, N.Y., a corporation of New Jersey

Filed Dec. 20, 1965, Ser. No. 514,933
The portion of the term of the patent subsequent to Jan. 1, 1983, has been disclaimed
Int. Cl. B29f *3/10*; B29h *9/08*
U.S. Cl. 264—174 8 Claims



This specification discloses a method and apparatus for applying three layers of plastic insulation to an electrical conductor in less time and within less distance than would otherwise be required. A single inner layer of semi-conducting plastic is extruded in a thin coating which cools rapidly to a safe die-contacting temperature because of high conductivity of semi-conducting plastics and the contact with the bare metal conductor as a heat sink. Both of the other layers are then extruded simultaneously, including an insulating layer having a thickness which is several times greater than that of the inner semi-conducting layer. These two outer layers cannot cool rapidly because of the thickness but since no additional plastic is to be applied over them, the conductor with its three

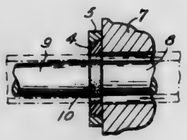
layers can pass directly into a vulcanizing chamber from the second extruder.

3,446,884

EXTRUSION PROCESS AND APPARATUS FOR PRODUCING A THERMOPLASTIC PIPE HAVING A GLOSSY SURFACE

Roger M. Miller, Toronto, Ontario, Bruno Mueller, Bramalea, Ontario, and Walter G. Sorochan, Port Credit, Ontario, Canada, assignors to Canadian Industries Limited, Montreal, Quebec, Canada, a corporation of Canada

Filed Mar. 8, 1967, Ser. No. 621,570
Claims priority, application Canada, Apr. 22, 1966, 958,680
Int. Cl. B29d *23/04*
U.S. Cl. 264—209 **6 Claims**



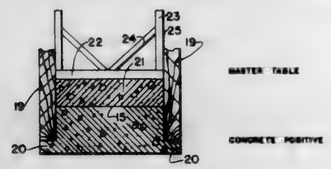
Thermoplastic material is extruded through an annular die provided with polytetrafluoroethylene rings at its exit end, whereby pipe having a glossy surface is obtained. The polytetrafluoroethylene rings permit the production of high quality pipe at high extrusion rate from thermoplastic materials which generally give a mat surface when extruded through a standard die.

3,446,885

METHOD OF FORMING CONCRETE SLABS, BEAMS AND THE LIKE

Paul Krauss, Winnipeg, Manitoba, Canada, assignor to Barkrauss Enterprises Ltd., Winnipeg, Manitoba, Canada

Filed Apr. 6, 1967, Ser. No. 628,909
Int. Cl. B29c *1/02*
U.S. Cl. 264—225 **3 Claims**



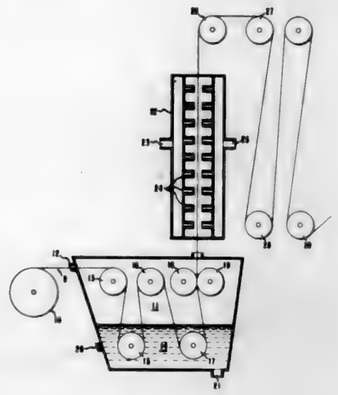
This invention refers to a method of pouring elongated concrete beams with an extremely accurate surface and consists of the method of making an accurate steel sub mould, pouring a concrete negative sub mould from the steel mould, then pouring a plurality of concrete positive sub moulds from the concrete negative sub moulds. The plurality of positive sub moulds are then bolted together to form an elongated highly accurate upper surface and a work table is poured on this surface. This work table can then be used as the base for the pouring of the concrete beams or alternatively, this can become a master table and a plurality of production work tables can be passed upon this master table.

3,446,886

PROCESS FOR TREATING LINEAR POLYESTERS TO MODIFY THE SURFACE APPEARANCE AND CHARACTERISTICS THEREOF

Michael Karickhoff, Circleville, Ohio, assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Dec. 4, 1963, Ser. No. 328,074
Int. Cl. B29d *7/22*
U.S. Cl. 264—234 **1 Claim**



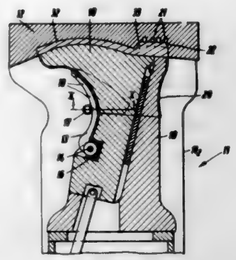
A process is provided for treating film structures of linear polymeric polyesters to modify the surface appearance and the surface characteristics thereof by contacting amorphous linear polyester film structures with an organic modifying agent having a dye receptivity-opacity development rating of at least 130 for a period of between five seconds and five minutes, followed by removing excess organic modifying agent and biaxially orienting said film structure, and thereafter heat-setting said film structure.

3,446,887

METHOD OF PRODUCING FOOTWEAR

Herbert Ludwig, Usen via Bremen, Germany; Friedrich Koch & Hans Loewe, joint executors of said Herbert Ludwig, deceased, assignors to Desma-Werke Gesellschaft mit beschrankter Haftung, Usen via Bremen, Germany, a firm

Filed Apr. 30, 1964, Ser. No. 363,965
Claims priority, application Germany, Apr. 30, 1963, D 41,458
Int. Cl. B29d *3/02;* **B29k** *5/12*
U.S. Cl. 264—244 **7 Claims**



This invention provides a method of producing footwear such as miner's boots and ski boots which have at least one tongue connected at its lower end with an upper of the footwear. The method includes the steps

of detachably mounting a pre-formed tongue of the footwear to an auxiliary tongue. The auxiliary tongue is subsequently attached to a last which is inserted into a mold for subsequent molding operations to be carried out.

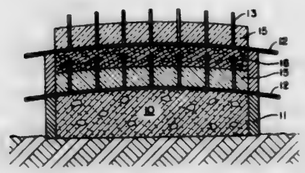
3,446,888

CRYOGENIC TANKS AND PROCESS OF MAKING THE SAME

Francis X. Crowley, Wellesley, Mass., assignor to Crowley Hession Engineers, Boston, Mass., a partnership

Filed June 19, 1967, Ser. No. 646,975
Int. Cl. B28b *1/16;* **B29d** *27/04;* **E04b** *1/16*
U.S. Cl. 264—256 **2 Claims**

A cryogenic tank comprising an inner ply of sheet metal having spikes projecting therefrom at intervals, concentric plies of insulating material and concrete impaled on said



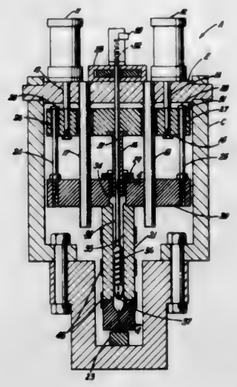
spikes, and prestressed wire binding the assembled plies, together with process of making the same.

3,446,889

METHOD OF MOLDING THERMOPLASTICS

Donald A. Draudt, 27180 Pompton Drive, and Herbert T. Draudt, 28520 Lynhaven, both of North Olmsted, Ohio 44070

Original application May 19, 1966, Ser. No. 551,386, now Patent No. 3,406,429, dated Oct. 22, 1968. Divided and this application July 15, 1968, Ser. No. 744,984
Int. Cl. B29f *1/02, 1/08*
U.S. Cl. 264—329 **5 Claims**



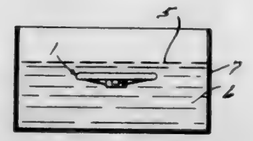
A method for molding articles from thermoplastic material wherein the moldable plastics material is plasticized and injected in a measured charge into a mold cavity. The plastic material is plasticized and worked by a screw portion of a floating spreader toward a discharge station while the spreader backs away from the more fully plasticized material, after which the unplasticized material behind the screw portion is forced forwardly carrying the spreader with it to inject the measured charge into a mold.

3,446,890

METHOD OF DEFLASHING AND POLISHING MOLDED PLASTIC ARTICLES

Donald B. Emery, Grosse Pointe Park, and James A. Miller, Southfield, Mich., assignors, by mesne assignments, to Sheller-Globe Corporation, a corporation of Ohio

Filed Sept. 29, 1965, Ser. No. 491,334
Int. Cl. B29c *25/00*
U.S. Cl. 264—341 **6 Claims**



1. A method of deflashing and/or polishing a molded plastic article, said plastic for the article being selected from the group consisting of cellulose acetate butyrate and cellulose acetate propionate, comprising the steps of:
   (a) immersing said ar icle in a liquid solvent bath of tricholorethylene and perchloroethylene at a volume ratio of trichloroethylene to perchloroethylene between about 5:1 and about 20:1, said liquid solvent bath being maintained at a temperature of about 70° F. to about 110° F.,
   (b) removing said article from the liquid solvent bath, and
   (c) drying said article.

3,446,891

ENCAPSULATED ACACIA SYRUP ADHESIVE OVERLAID N-ACETYL-p-AMINOPHENOL BEADLET CORES RETAINING THEREON DEXTROMETHORPHAN, CHLORPHENIRAMINE, AND PHENYLEPHRINE

Arnold Cavalli, Cedar Grove, and Louis Magid, Clifton, N.J., assignors to Hoffman-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed May 16, 1966, Ser. No. 550,171
Int. Cl. A61k *27/00;* **A61l** *3/00*
U.S. Cl. 424—34 **9 Claims**

1. A therapeutic composition comprising (A) hard shell gelatin capsules which are completely free of inert non-pareil seeds employed as core materials, but which can contain inert non-pareil seeds employed as fillers in a quantity sufficient to achieve complete capsule fill, and further containing (B) discrete beadlets, each such beadlet comprising (1) N-acetyl-p-aminophenol as a core material, (2) an adhesive composition overlaying said core material, (3) a medicament selected from the group consisting of dextromethorphan and a salt thereof with a medicinally acceptable acid dispersed upon the adhesive-treated core material and retained thereon by said adhesive composition, (4) an adhesive composition overlaying the medicament-coated core, and (5) tricalcium phosphate dispersed upon the adhesive-treated medicament-coated core and retained thereon by said adhesive composition, said adhesive composition (2) and (4) being a syrup comprising from about 10% to about 20% by weight of acacia, from about 45% to about 60% by weight of sugar and from about 30% to about 35% by weight of water, there being present in said capsules a sufficient number of beadlets to provide, per capsule,

from about 55 mg. to about 80 mg. of N-acetyl-p-aminophenol and a quantity of said ingredient (3) to furnish a quantity of active dextromethorphan base equivalent to that furnished by about 10 mg. to about 20 mg. of dextromethorphan hydrobromide.

3,446,892

IMMOBILIZING INSECTS BY SUDDEN REDUCTION OF BODY TEMPERATURE

Daniel M. Stout, St. Louis, Mo., assignor to Whitmire Research Laboratories, Inc., St. Louis, Mo., a corporation of Missouri

No Drawing. Filed Sept. 18, 1963, Ser. No. 309,853
Int. Cl. A01n *17/02;* **A61d** *7/04;* **A01k** *59/00*
U.S. Cl. 424—45 **4 Claims**

Aerosol means to immobilize flying insects, such as wasps, by wetting them with a projected stream of highly volatile liquid, whereby the insects' body temperature is suddenly reduced by the vaporization of the liquid.

3,446,893

SOLID DEODORIZING COMPOSITIONS

William E. Hanford, New York, N.Y., and Benjamin Newman, New Haven, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Continuation-in-part of application Ser. No. 469,339, July 2, 1965. This application Feb. 23, 1967, Ser. No. 617,809
Int. Cl. A61l *9/00;* **C11d** *7/54*
U.S. Cl. 424—76 **15 Claims**

Composition and method for deodorizing air spaces, for example, in water closets. The composition comprises (1) a solid source of available halogen, (2) a solid gas-generating source reactive with water to generate a gas and (3) a solid polyolefin.

3,446,894

STABILIZATION OF VITAMIN C TABLETS

Louis Magid, Clifton, N.J., assignor to Hoffman-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Sept. 15, 1966, Ser. No. 579,481
Int. Cl. A61k *15/12*
U.S. Cl. 424—176 **9 Claims**

1. A solid vitamin tablet granulation consisting of (1) vitamin C as the sole active component in an amount of at least 70 weight percent, (2) starch as the principal excipient and binder in an amount of at least 50 weight percent of the balance of the composition, and (3) sorbose, lactose, or a mixture thereof in an amount, of from at least about 0.2 weight percent to not more than about 5 weight percent, based upon the weight of vitamin C, sufficient to stabilize the composition against discoloration.

3,446,895

METHODS FOR TREATING MUSCULAR DYSTROPHY WITH A 1-METHYL-Δ^1-ANDROSTEN-17β-OL-3-ONE AND DIGITOXIN

Robert M. Dowben, Cambridge, Mass., assignor to Northwestern University, Evanston, Ill., a corporation of Illinois

Continuation-in-part of application Ser. No. 501,084, Oct. 22, 1965. This application Sept. 6, 1967, Ser. No. 678,468
Int. Cl. A61k *25/00*
U.S. Cl. 424—182 **5 Claims**

Method of treating muscular dystrophy in humans by administration of 1-methyl-Δ^1-androsten-17β-ol-3-one or esters thereof in combination with subdigitalizing dosages of digitoxin commencing six weeks after the administration of the steroid.

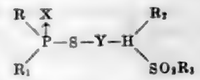
3,446,896

KILLING OF PESTS WITH ALKYL SULFONAMIDE PHOSPHATES AND PHOSPHONATES

Karoly Szabo, Orinda, Llewellyn W. Fancher, Lafayette, and David J. Broadbent, San Jose, Calif., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Original application Sept. 25, 1964, Ser. No. 399,369, now Patent No. 3,368,001, dated Feb. 6, 1968. Divided and this application Dec. 13, 1967, Ser. No. 714,379
Int. Cl. A01m *9/36*
U.S. Cl. 424—211 **6 Claims**

The killing of insects, mites and fungi with a compound of the formula



in which R and R_1 are lower alkoxy or lower alkyl groups; R_2 is hydrogen, lower alkyl or lower haloalkyl; R_3 is lower alkyl; (when R_2 is hydrogen) and R_3 is lower alkyl, pheny or halophenyl (when R_2 is lower alkyl or lower haloalkyl); X is oxygen or sulfur; and Y is divalent lower alkylene or lower alkylalkylene group.

3,446,897

COMPOSITIONS AND METHODS FOR THE CONTROL OF CARDIAC ARRHYTHMIA WITH O-SUBSTITUTED PYRROLIDINOLS AND S-SUBSTITUTED THIOPYRROLIDINOLS

Theodore F. Koppanyi, Washington, D.C., assignor to A. H. Robins Company, Incorporated, Richmond, Va., a corporation of Virginia

No Drawing. Continuation-in-part of application Ser. No. 472,299, July 15, 1965. This application Sept. 30, 1966, Ser. No. 583,414
Int. Cl. A61k *27/00*
U.S. Cl. 424—274 **9 Claims**

The control of cardiac arrhythmia with O-substituted pyrrolidinols and S-substituted thiopyrrolidinols and compositions therefor.

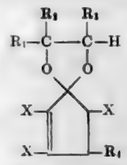
3,446,898

6,9 DIOXA-1-SPIRO[4.4] NONENE IN THE KILLING OF INSECTS

Wen-Hsuan Chang, Gibsonia, Pa., assignor to PPG Industries, Inc., Pittsburgh, Pa., a corporation of Pennsylvania

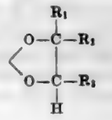
No Drawing. Continuation-in-part of application Ser. No. 629,374, Apr. 10, 1967. This application Aug. 17, 1967, Ser. No. 661,209
Int. Cl. A01n *9/28;* **C07d** *13/04*
U.S. Cl. 424—278 **3 Claims**

This application relates to the use of compounds corresponding to the following formula as insecticides:

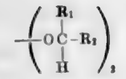


Formula B

In the above formula, X represents chlorine or bromine and R_1, R_2 and R_3 are each selected from the class consisting of hydrogen and alkyl, cycloalkyl, phenyl, alkoxyalkyl, phenyloxyalkyl and hydroxyalkyl radicals, usually having up to 20 carbon atoms and preferably 1 to 10 carbon atoms. R_4 is either the structure:



or the structure:



where R_1, R_2 and R_3 are as above.

In the foregoing Formula B, it is to be noted that the substituents designated as R_1, R_2 and R_3 occur more than once in each formula. In these instances, each R_1 group may refer to a different radical selected from the group set forth, and each R_2 and each R_3 may similarly be different. Such compounds are obtained, for example, when produced by a method in which successive reactions with an alcohol are employed and a different alcohol is used in each step. Compounds of this type are included within the scope of the various embodiments of the invention disclosed and claimed herein.

3,446,899

VITAMIN COMPOSITIONS PRODUCED BY DIRECT COMPRESSION

Arnold Cavalli, Belleville, and Louis Magid, Clifton, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 456,841, May 18, 1965, now abandoned. This application Jan. 25, 1968, Ser. No. 700,351
Int. Cl. A61k *15/00*
U.S. Cl. 424—280 **10 Claims**

A vitamin composition containing sorbose, either alone or in combination with one or more other carbohydrates, and a lubricant is described.

The disclosed composition is capable of being compressed directly, i.e. without first being granulated, into tablets.

3,446,900

METHOD OF EMBOSSING SOAP OR DETERGENT BARS

Melvin E. Kamen, North Bergen, N.J., assignor to Revlon, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 12, 1966, Ser. No. 571,969
Int. Cl. B29c *17/00*
U.S. Cl. 264—293 **6 Claims**

Method of embossing dry, non-plastic soap or detergent compositions by pre-heating surface portions and contacting with a heated embossing die. The bars may be wrapped with a thermally deformable wrapper prior to embossing, and either wrapped or unwrapped compositions may be printed simultaneously with embossing by interposing hot-transfer roll leaf between the composition and heated die.

3,446,901

ANTIDEPRESSANT COMPOSITIONS CONTAINING DIPHENYLPROPYLAMINE DERIVATIVES

Geraint Jones, Macclesfield, England, assignor to Ed. Geistlich Sohne AG fur Chemische Industrie, Wolhusen, Switzerland, a Swiss body corporate

No Drawing. Filed July 21, 1967, Ser. No. 654,953
Claims priority, application Great Britain, Aug. 25, 1966, 38,196/66
Int. Cl. A61k *27/00*
U.S. Cl. 424—330 **4 Claims**

Pharmaceutical compositions, for example tablets, containing a diphenylpropylamine derivative, for example N,N - dimethyl - 3,3 - diphenylpropylamine hydrochloride. Useful as antidepressants.

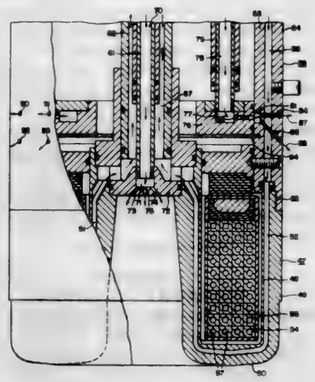
ELECTRICAL

3,446,902

ELECTRODE HAVING OXYGEN JETS TO ENHANCE PERFORMANCE AND ARC STARTING AND STABILIZING MEANS

Ronald R. Akers, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Jan. 8, 1968, Ser. No. 696,358
Int. Cl. H05b *7/08*
U.S. Cl. 13—18 **6 Claims**



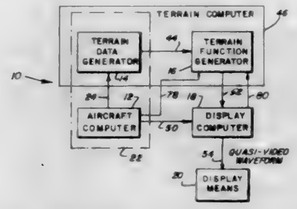
An electrode of the type having a fluid cooled annular tip with a field coil disposed therein for setting up a magnetic field to substantially continuously move the arc over the arcing surface of the tip has means for exhausting oxygen under pressure at a plurality of points disposed around the electrode to produce oxygen jets. The oxygen jets result in the electrode producing a hole in the scrap or melt of larger diameter than would otherwise be produced, since the oxidation of iron ore or scrap is essentially an exothermic reaction. The larger hole reduces the probability that material from the scrap above the electrode tip will fall down into the hole, producing a short circuit between the side of the electrode tip and the melt. Additionally, an oxygen jet through the central opening of the annular tip assists in the reduction and melting of the ore, and eliminates the formation of stubs.

3,446,903

RADAR LANDMASS SIMULATION

Boris Beizer, Bussum, Netherlands, assignor, by mesne assignments, to the United States of America

Filed Apr. 18, 1967, Ser. No. 632,161
Int. Cl. G09b *9/00*
U.S. Cl. 35—10.4 **8 Claims**

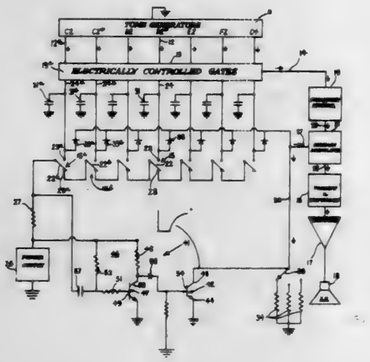


A digitally oriented radar landmass simulator comprising a general purpose digital computer in combination with special purpose analog function generators providing a system including an aircraft computer, a terrain data generator, a terrain function generator, a display computer, and display means.

3,446,904
KEY SYSTEM FOR ELECTRICAL MUSICAL INSTRUMENT

John R. Brand, Northridge, and Bradley J. Plunkett, Van Nuys, Calif., assignors to Warwick Electronics Inc., Chicago, Ill., a corporation of Delaware

Continuation-in-part of application Ser. No. 378,117, June 26, 1964. This application Jan. 4, 1968, Ser. No. 701,032
Int. Cl. G10h 3/00
U.S. Cl. 84—1.13 10 Claims

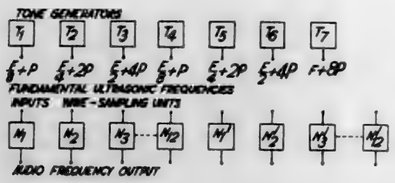


Sustain circuits are provided in an electronic organ to permit the tone to persist after the organ key has been released. The tone decays gradually as a sustain capacitor discharges. If another note is played while the sustain condition of a previously played note (or notes) is in operation, means are provided to substantially instantaneously cut off all of the previously played sustain tones, so that only the last note played is sounded through the organ. This is particularly desirable in the case of a monophonic instrument using a frequency divider, where the application of two tone signals of different frequency to the single input of the frequency divider would cause a garbled sound (called a burble), because the frequency divider would not know which of the two frequencies to respond to.

3,446,905
ELECTROPHONIC MUSICAL INSTRUMENT

William Elwyn Roberts, Arfon, Uley, Dursley, Gloucestershire, England

Filed Aug. 13, 1965, Ser. No. 479,576
Claims priority, application Great Britain, Aug. 25, 1964, 34,781/64
Int. Cl. C10h 1/06, 1/00
U.S. Cl. 84—1.22 3 Claims



1. In an electrophonic musical instrument, the combination comprising:

a plurality of sources of ultrasonic waveforms, having respective fundamental frequencies of $(F/8+P)$, $(F/4+2P)$, $(F/2+4P)$ and $(F+8P)$, where F is of the order of 200 kc./s. and P is the frequency of a note in the lowest octave to be produced by the instrument;

a first plurality of sampling means, one of said first plurality of sampling means having a sampling frequency of $(F/8)$ and the others of said sampling means having sampling frequencies differing from $F/8$ by the respective difference between said note and a respective different note in said octave;

a second plurality of sampling means, one of said second plurality of sampling means having a sampling frequency of $(F/8-7P)$ and the others of said second plurality of sampling means having sampling frequencies differing from $(F/8-7P)$ by the difference between 8P and the respective pitch of a respective note in the octave that includes the pitch 8P; and

means coupling said sources selectively at will to said sampling means thereby to produce desired audible notes.

3,446,906
RESILIENT CONDUCTIVE COATED FOAM MEMBER AND ELECTROMAGNETIC SHIELD EMPLOYING SAME

Dieter Zulauf, Portland, Oreg., assignor to Tektronix, Inc., Beaverton, Oreg., a corporation of Oregon

Filed May 17, 1967, Ser. No. 639,081
Int. Cl. H05k 9/00
U.S. Cl. 174—35 8 Claims

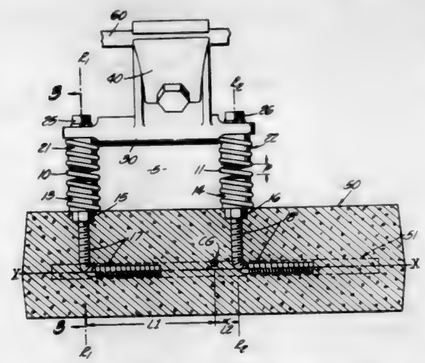
The subject matter of the present invention relates generally to a porous, resilient, electrically conductive member formed of a body of open-celled plastic foam having a coating of electrically conductive material provided throughout such foam body on the surface of the foam cells. This resilient, conductive foam member is employed as an electromagnetic shield to prevent electrical signal radiation from passing between two metal plates between which such conductive member is compressed. A number of different methods are employed to form the present resilient, conductive member including vacuum vapor deposition, spraying, dipping or electroplating. A polyurethane plastic foam having a plurality of interconnected open cells is employed to provide a foam body which is sufficiently porous to enable fluid to pass through such body so that all of the surfaces of the cells throughout the body are coated with nickel or other metal.

3,446,907
VIBRATION DAMPER

Raymond R. Bouche, 4902 Indianola Way, La Canada, Calif. 91011

Filed Apr. 10, 1967, Ser. No. 629,532
Int. Cl. H02g 7/00, 7/14
U.S. Cl. 174—42 14 Claims

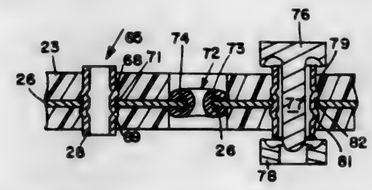
Multiple mode dampers for damping Aeolian vibrations of electrical cables are provided, which employ a single mass and two springs. The modes of vibration are made interdependent by utilizing springs having different moments of stiffness with respect to the center of gravity of the mass. The mass is made of concrete. These dampers serve to damp vibrations at many resonant frequencies by making the dynamic mass of the damper large compared with the dynamic mass of the cable at many resonant frequencies simultaneously over a large range of wind speed.



3,446,908
PRINTED CIRCUIT TERMINATIONS AND METHODS OF MAKING THE SAME

Sidney K. Tally, Nashua, and Thomas H. Stearns, Amherst, N.H., assignors to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware

Filed Nov. 1, 1966, Ser. No. 591,305
Int. Cl. H05k 1/00, 3/00
U.S Cl. 174—68.5 27 Claims

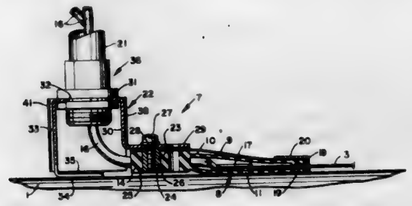


Terminations for printed circuit boards and methods of making same are herein disclosed and comprise various hollow tubes which are deformed by pressure or pressure and heat to cause bulges thereon to grip conductors of the printed circuit boards.

3,446,909
FLUID-TIGHT ELECTRICAL ENCLOSURE

Walter C. Kahn, Westport, Conn., assignor to Electro-Trace Corporation, Danbury, Conn., a corporation of New York

Filed May 29, 1967, Ser. No. 642,069
Int. Cl. H02g 3/00, 15/08
U.S. Cl. 174—71 14 Claims

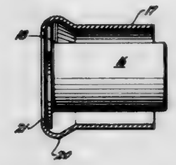


A fluid-tight enclosure for receiving and enclosing therein the end portion of a strip-shaped conductor, the enclosure comprising a bag with a slit, open end into which the conductor extends, and a clamp tightly closing the open end of the bag in curved configuration. The enclosure when used for making an electrical connection further includes a support portion, openings in the support portion leading to the interior of the bag for receiving a second conductor, and a bracket connected to the support portion for holding a tubular housing for the second conductor.

3,446,910
GROUNDING SHEATH CONNECTOR

Lawrence M. Curtiss, Mountainside, Edward J. Castellani, South Plainfield, and William G. Frey, Union, N.J., assignors to Thomas & Betts Corporation, Elizabeth, N.J., a corporation of New Jersey

Filed Mar. 22, 1967, Ser. No. 625,226
Int. Cl. H02g 15/02, 15/08
U.S. Cl. 174—75 3 Claims

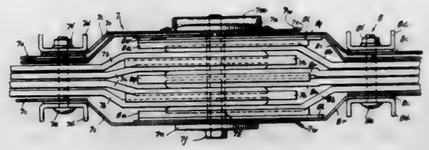


The invention is directed to a unitary grounding sheath connector to couple together the shield of a coaxial conductor to a ground lead without adversely affecting the shield or the electrical characteristics of the coaxial conductor. The grounding sheath connector is comprised of a pair of noninsulated, metallic, tubular sleeves, telescoped one within the other in captive, radially spaced concentric relation to one another wherein the inner sleeve is free for limited endwise movement, tilting movement or orbital movement with respect to the outer sleeve. The shield of the coaxial conductor is intruded between the sleeves and one or more ground wires is then placed between the shield and outer sleeve. The outer sleeve is then crimped to secure the shield and ground wire together.

3,446,911
BUS DUCT SECTION WITH GROUND BUS BAR

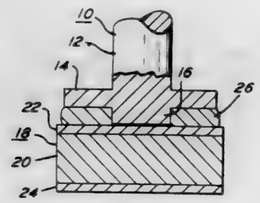
George N. Jorgensen, Lexington, Ky., assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan

Filed Apr. 11, 1967, Ser. No. 630,110
Int. Cl. H02g 5/04, 15/08; H01b 7/00
U.S. Cl. 174—88 5 Claims



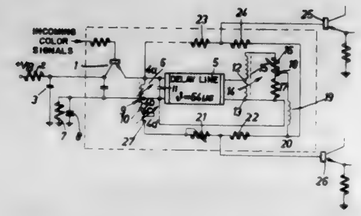
A section of feeder bus duct having a plurality of bus bars, including a separate bus bar for grounding purposes, and an inside joint cover electrically connected to the grounding bus bar adjacent one end thereof and disposed between the grounding bus bar and that of a second bus duct section when the two bus duct sections are serially connected.

3,446,912
TERMINAL FOR ELECTRICAL COMPONENT
Donald S. Diehl, Southampton, Pa., and Robert Wagner, Willingboro, N.J., assignor to TRW Inc., a corporation of Ohio
Filed Aug. 16, 1967, Ser. No. 661,094
Int. Cl. H02g 15/08
U.S. Cl. 174—94 4 Claims



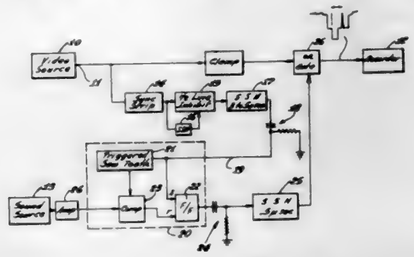
A terminal for a disk type electrical component which can be soldered to the component without causing any excess flow of the solder during the soldering operation which could adversely affect the electrical characteristics of the component. The terminal comprises a metal stem having a thin, flat, circular head on one end, and a cylindrical projection extending from the bottom surface of the head. The projection is smaller than the head and is of a thickness no greater than the thickness of the head. The terminal is secured to an electrical component by a layer of solder extending between the head and a metal film on the component.

3,446,913
TRANSIT TIME DEMODULATOR FOR PHASE QUADRATURE MODULATED COLOR SIGNALS
Werner Scholz, Hannover-Linden, Germany, assignor to Telefunken Patentverwertungsgesellschaft m.b.H., Ulm, Danube, Germany
Filed June 27, 1966, Ser. No. 560,637
Claims priority, application Germany, June 26, 1965, T 28,886
Int. Cl. H04n 5/48
U.S. Cl. 178—5.4 7 Claims



1. In a transit time demodulator for phase quadrature modulated color television signals, the combination which comprises:
(a) means forming a delay line, said delay line having input terminals across which there is an input capacitance; and
(b) means for producing two color carrier signals which are of the opposite phase, said means including a push-pull transformer, the latter having two windings one of which is connected across said input terminals of said delay line and is a means for neutralizing said input capacitance of said delay line.

3,446,914
AUDIO AND VIDEO RECORDING WITH PHASE MODULATED AUDIO PULSE ON HORIZONTAL BACK PORCH
Frederick J. Hodge, Camarillo, Calif., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Oct. 12, 1965, Ser. No. 495,262
Int. Cl. H04n 5/76, 7/00
U.S. Cl. 178—6.6 8 Claims



A system for recording and reproducing sound together with video signals by placing pulses on the back porch of the horizontal sync signals having phase modulation relative to the leading edge of each such sync signal and continuing the modulation through the vertical sync period.

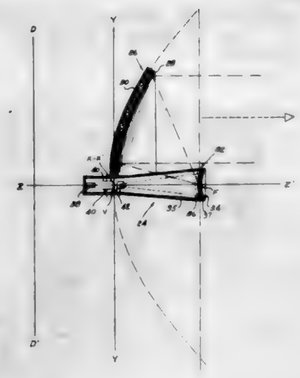
3,446,915
CATHODE RAY TUBE BEAM BLANKING CIRCUIT
Raymond C. Voige, Park Ridge, Ill., assignor to Motorola, Inc. Franklin Park, Ill., a corporation of Illinois
Filed Aug. 5, 1966, Ser. No. 570,492
Int. Cl. H04n 3/16
U.S. Cl. 178—7.5 10 Claims

Blanking of the cathode ray tube of a television receiver is accomplished during horizontal and vertical retrace intervals by connecting a transistor switch in the conductive path of the video amplifier tube. The transistor is normally conductive so that it has no effect on the operation of the video amplifier; but during either horizontal or vertical retrace, gating pulses are applied to the base of the transistor to drive it to cutoff. This causes a high positive blanking pulse to be obtained from the anode of the video amplifier tube to cut off the cathode ray tube for the retrace interval.

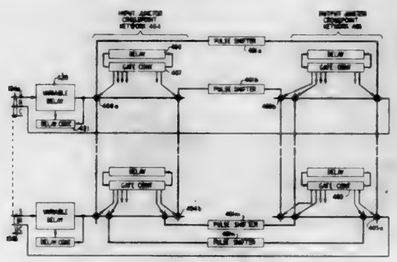
3,446,916
COLLIMATED VIEWING SYSTEM
Irving R. Abel, Norwalk, and Thomas D. Kegelman, Ridgefield, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed July 29, 1964, Ser. No. 385,880
Int. Cl. H01j 29/10
U.S. Cl. 178—7.85 9 Claims

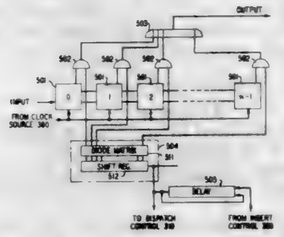
An image combiner utilizing a portion of the aircraft window, the inner surface of said portion being coated with a partially reflecting film and being paraboloidal in

shape. A cahtode ray tube having an aspherically shaped screen is positioned with the screen in the focal plane of said surface whereby information presented on the screen is presented to a viewer by way of the image combiner, while at the same time making it possible to view events outside.



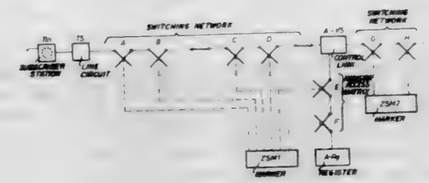
3,446,917
TIME DIVISION SWITCHING SYSTEM
Hiroshi Inose and Tadao Saito, Tokyo, Japan, assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed June 7, 1965, Ser. No. 461,791
Claims priority, application Japan, Dec. 29, 1964, 39/74,259
Int. Cl. H04j 5/00
U.S. Cl. 179—15 3 Claims





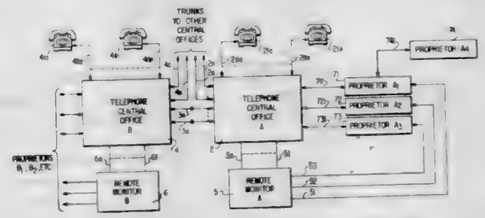
This application is directed to a time division communication system in which a switching network comprising junctor crosspoints and pulse shifting devices transposes information transmitted through the network, each pulse shifter being connected between a pair of crosspoint switches.

3,446,918
MARKER FOR MULTI-STAGE CROSSPOINT NETWORK
Alfons Bessler, Kornwestheim, and Walter Hackenberg, Hirschlanden, Germany, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of New York
Filed June 23, 1965, Ser. No. 466,198
Claims priority, application Germany, June 30, 1964, St 22,325
Int. Cl. H04m 9/06; H04q 3/24
U.S. Cl. 179—18 8 Claims



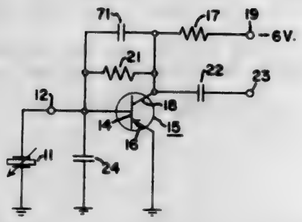
A switching network comprising a plurality of cascaded stages is controlled via a guide-wire net by a common marker. Each stage has an individual starting circuit, these circuits being connected into a chain providing a predetermined, timed sequence. A common checking circuit stores a memory of the busy conditions. The starting circuits cause the marker to select and operate a crosspoint in each stage according to the busy conditions stored in the memory.

3,446,919
TELEPHONE ANSWERING SYSTEM PROVIDING MULTIPLE ANSWERING POINTS WITH CENTRALIZED OR DECENTRALIZED OPERATION
William J. Curtin, 25 W. Main St., Madison, Wis. 53703
Filed Sept. 3, 1965, Ser. No. 485,012
Int. Cl. H04m 3/60
U.S. Cl. 179—27 11 Claims



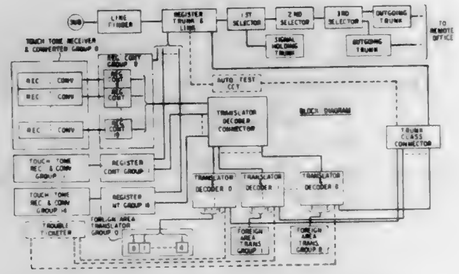
There is disclosed herein an answering service system adapted for operation by a plurality of remotely located associated answering service proprietors. The system permits both decentralized operation under normal conditions with centralized operation for periods of low activity. Thus, each proprietor, e.g., in a separate portion of the city, may operate independently for serving an individual group of answering service customers or, alternatively, an individual proprietor may service the entire clientele of all proprietors during holiday or night hours.

3,446,920
TRANSISTOR AMPLIFIER CIRCUIT FOR PIEZO-ELECTRIC PHONOGRAPH CARTRIDGE
Siegfried J. Zuerker, Utica, N.Y., assignor to General Electric Company, a corporation of New York
Filed Oct. 21, 1964, Ser. No. 405,364
Int. Cl. G11b *3/00*
U.S. Cl. 179—100.4 **1 Claim**



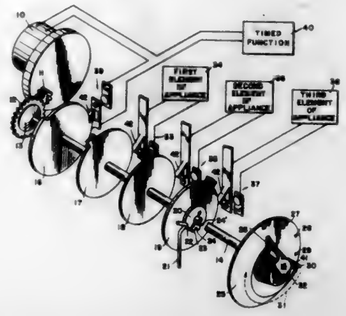
A transistor amplifier circuit for a piezo-electric phonograph cartridge, the circuit including first and second capacitors respectively connected between the base and emitter electrodes and base and collector electrodes of the transistor to substantially match the impedance of the cartridge to the transistor while reducing the noise at the output thereof.

3,446,921
SWITCHING SYSTEM TESTING
Frank G. Denend, Middletown, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 3, 1966, Ser. No. 531,577
Int. Cl. H04m *3/30, 3/32*
U.S. Cl. 179—175.23 **13 Claims**



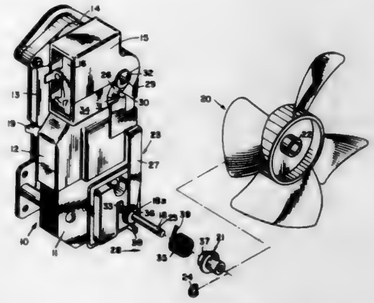
1. A testing circuit for testing register-senders in a switching system wherein a register-sender is arranged when seized to register address data transmitted thereto and is automatically effective incident to address data registration (1) to derive a set of switching data from at least a portion of said address data, (2) to register said derived set of switching data, and (3) upon registration of a complete set of switching data to perform switching control functions in accordance with said registered switching data, said testing circuit comprising:
(A) means settable to establish test address data and a correct set of switching data pertinent thereto;
(B) means for seizing a register-sender for test purposes and for transmitting thereto said test address data;
(C) and, means controlled by said seizing means and by said settable means for preventing said register-sender from performing said switching control functions unless said registered complete set of switching data corresponds to said correct set thereof.

3,446,922
COMBINED TIMER AND ROTARY SELECTOR SWITCH
Harold W. Vogt, Jr., Indianapolis, Ind., assignor to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware
Filed Mar. 30, 1966, Ser. No. 538,684
Int. Cl. H01h *7/08, 43/10*
U.S. Cl. 200—38 **14 Claims**



Rotary means and cam means are mounted on a rotating shaft driven by a motor. Means are provided for holding the rotary members in a predetermined position independent of the motor.

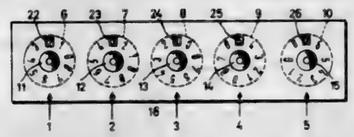
3,446,923
SEQUENCE CONTROL MEANS
Elmo W. Voland and Joseph E. Wiser, Indianapolis, Ind., assignors to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware
Filed Mar. 2, 1967, Ser. No. 620,139
Int. Cl. H01h *7/12, 43/10*
U.S. Cl. 200—38 **7 Claims**



A reaction member responsive to a cam engages a clutch connected to a motor drive shaft such that two separate elements operating off the shaft can be independently operated while the shaft continually rotates.

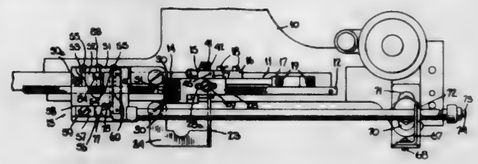
3,446,924
DEVICE FOR CONTROLLING THE WASH CYCLE OF A WASHING MACHINE
Natale Giambertoni, Milan, Italy, assignor to Holzer-Patent AG, Zug, Switzerland, a corporation of Switzerland
Continuation-in-part of application Ser. No. 581,546, Sept. 23, 1966. This application July 9, 1968, Ser. No. 743,389
Int. Cl. H01h *7/08, 43/10*
U.S. Cl. 200—38 **6 Claims**

A device for controlling the wash cycle of a washing machine. A plurality of primary selector switches are provided for variably setting the time of operation of sequentially performed operations of an automatic washing machine. A secondary selector switch is provided for



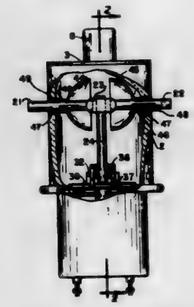
setting a plurality of preselected combinations of parameters such as water temperature, water level, etc. of the machine operations.

3,446,925
SIGNALING ATTACHMENT FOR A LINE-CASTING MACHINE
David J. Sinnott, Ringwood, N.J., assignor to Powers & Eaton Industries, Inc., South Hackensack, N.J., a corporation of New Jersey
Filed June 2, 1966, Ser. No. 554,704
Int. Cl. B41b *27/36*
U.S. Cl. 200—52 **17 Claims**



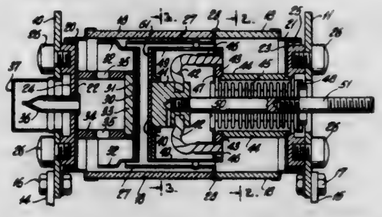
A signaling assembly for a line-casting machine having an assembler slide and an assembler slide scale comprises a switch assembly mounted on the assembler slide scale and a magnetic actuating assembly mounted on the assembler slide. The switch assembly has means slideable on the scale and supporting a justification switch on one side and a tight line switch on the other side. The magnetic actuating assembly has support means attached to the assembler slide to position the justification switch actuating member on one side of the scale and ahead of the tight line actuating member to produce justification and tight line signals to automatically indicate when the justification zone is reached and a tight line condition occurs.

3,446,926
VACUUM RELAY HAVING A PIVOTALLY MOUNTED ARMATURE
Julian Camacho, San Jose, Calif., assignor to Jennings Radio Manufacturing Corporation
Filed Nov. 22, 1965, Ser. No. 509,099
Int. Cl. H01h *33/66*
U.S. Cl. 200—144 **2 Claims**



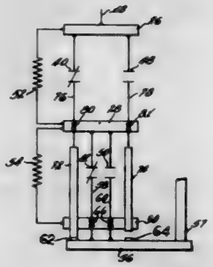
The disclosure relates to a vacuum relay comprising an envelope and an electromagnetic actuating assembly supported on the envelope. An armature is pivotally mounted within the envelope and a mobile contact mounted on the armature and movable therewith to make or break a circuit through a pair of fixed contacts. A resilient bracket is interposed between the envelope and the armature to resiliently retain the armature in operative position within the envelope. The armature contains a knife-edge about which the armature may pivot. Shield means are associated with each fixed contact to provide the deposition of vaporized contact material on the portion of the envelope through which each conductive lead extends.

3,446,927
DISK CONTACTS AND FLAT ANNULAR SHIELD ARRANGEMENT IN GAS FILLED SWITCH
Charles L. Shackelford, Cedar Grove, N.J., assignor, by mesne assignments, to Wagner Electric Corporation, South Bend, Ind., a corporation of Delaware
Filed Jan. 10, 1966, Ser. No. 519,589
Int. Cl. H01h *9/30, 33/14*
U.S. Cl. 200—144 **4 Claims**



A gas filled switch is provided for breaking large alternating currents slowly, so as to eliminate most of the transient voltage pulses that are otherwise generally formed by the switch elements during switching. Two flat disks form the current breaking electrodes, and the spacing of the electrodes and other shield elements combined with the normal gas pressure create a condition which cannot support sustained electrical conduction. When the current is broken, an arc is formed which is extinguished slowly.

3,446,928
INTERRUPTING DEVICE HAVING U-SHAPED PARALLEL CURRENT PATHS
William E. Harper, Walpole, and Joseph M. Ramrath, Mattapan, Mass., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Oct. 20, 1965, Ser. No. 498,960
Int. Cl. H01h *9/38, 33/12*
U.S. Cl. 200—146 **3 Claims**



There is disclosed an oil circuit breaker having a pair of spaced apart line terminals extending into the top of a tank containing oil. When the circuit breaker is in closed condition, two U-shaped parallel current paths are established between the line terminals. The exterior U-shaped current path comprises one or more pairs of separable main contacts. The interior (and

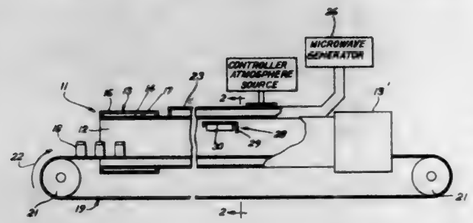
exterior U-shaped current path comprises one or more pairs of separable auxiliary contacts. The circuit breaker is arranged so that the contacts in the interior circuit open first and close last as regards the contacts in the exterior circuit. The disposition, length and inductance of the two U-shaped current paths is such that more current tends to flow in the interior circuit because of magnetic effects caused by current flow through each U-shaped path. The separable contacts in both U-shaped current paths are housed in suitable arc interrupting devices which are supported by upper, intermediate and lower heat dissipating platforms. Impedance devices, such as resistors, associated with the contacts are also supported by the platforms.

3,446,929

MICROWAVE APPARATUS

Franklin J. Smith, Diablo, Calif., assignor to Cryodry Corporation, San Ramon, Calif., a corporation of California

Filed Oct. 10, 1966, Ser. No. 585,564
Int. Cl. H05b *9/06*
U.S. Cl. 219—10.55 **13 Claims**



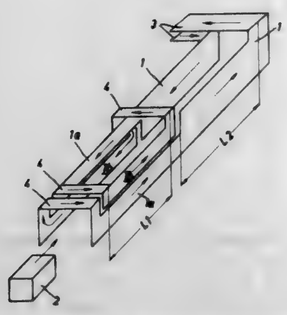
A microwave processing chamber coupled to a microwave energy source with a plurality of electrical openings along one wall and a baffle in said chamber before at least one of said openings and substantially parallel to said wall but spaced from said opening to stabilize the mode patterns in said chamber.

3,446,930

CROSS-FIELD INDUCTOR FOR HEATING ELECTRICALLY CONDUCTING WORKPIECES

Gerhard Seulen, Remscheid, Herbert Geisel, Remscheid-Luttringhausen, and Ernst Stangl, Remscheid-Reinshagen, Germany, assignors to AEG-Elotherm GmbH, Remscheid-Hasten, Germany

Filed Dec. 20, 1966, Ser. No. 603,368
Claims priority, application Germany, Dec. 22, 1965, A 51,152; Nov. 8, 1966, A 54,029
Int. Cl. H05b *5/02*
U.S. Cl. 219—10.69 **12 Claims**



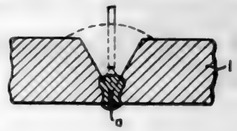
Inductor means for heating electrically conductive workpieces in a magnetic field generated thereby, divided into two inductors or inductor zones, both adapted to produce cross fields, one being comprised of multiple bars cross-connected so that the current will successively cross from a bar on one side and pass in the reverse direction along a bar on the other side of the gap formed between the bars on the two sides for the passage of the workpieces.

3,446,931

METHOD FOR FIXING A BACKWAVE DEPOSITED METAL ONTO THE BEVELING ROOT

Tsuneo Nakai, Setsuji Minehisa, Yoshio Fuchino, and Hisao Tsuchihira, Osaka-shi, Japan, assignors to Hitachi Zosen Kabushiki Kaisha, Osaka-shi, Japan

Filed July 2, 1964, Ser. No. 379,912
Claims priority, application Japan, Sept. 14, 1963, 38/49,685; Dec. 14, 1963, 38/67,468
Int. Cl. B23k *9/18, 25/00, 35/22*
U.S. Cl. 219—73 **1 Claim**



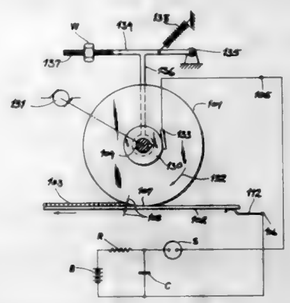
A submerged arc welding process is performed only from the front surfaces of base metal workpieces without the use of a backing member and whereby completely welded metal is deposited on and fixed to the rear surface of the base metal. A V-shaped groove is provided at the adjoining edges of the workpieces and the groove is filled with a flux consisting of 35–40% fluorite, 10–30% silicon iron, 2–7% aluminum oxide, 3–8% sodium bicarbonate, 0–5% cryolite and 3–8% sodium silicate. As the weld is carried out the flux forms a slag of sufficient viscosity to form a backwave deposited bead.

3,446,932

METHOD OF AND APPARATUS FOR THE SPARK DISCHARGE DEPOSITION OF METALS ONTO CONDUCTIVE SURFACES

Nikola R. Belopitov, Sofia, Bulgaria, assignor to Nautchno-Izsledovatelski i Proektno-Konstruktorski Institut Po Elektrotechnitscheska Promishlenost, Sofia, Bulgaria

Filed Oct. 8, 1965, Ser. No. 494,069
Claims priority, application Bulgaria, Oct. 8, 1964, I–824
Int. Cl. B23k *9/04*
U.S. Cl. 219—76 **20 Claims**



Method of and apparatus for the coating of a substrate with conductive material wherein a pendulously supported coating electrode disk carried by an oscillation-damped arm bears against substrate resiliently supported at two spaced-apart locations (e.g. a continuous

tensioned band or endless conveyor carrying a number of bodies). A discharge is generated between the disk, which may have a continuous or discontinuous surface, and the substrate while the disk is rotated in contact with the substrate to produce solely by this means a vibration of flutter of the substrate. The discharge also serves to carry portions of the electrode disk material onto the substrate.

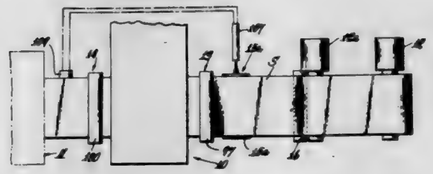
The arm may be provided with an oscillation damper and is held against the substrate under the control of an adjustable weight. The electric pulses are applied in series with a spark gap connected across a capacitor.

3,446,933

APPARATUS FOR WELDING STRIP MATERIAL

Irving R. Taylor and Arthur L. Williams, Warren, Ohio, assignors, by mesne assignments, to Wean Industries, Inc., Warren, Ohio, a corporation of Ohio

Original application May 8, 1962, Ser. No. 193,156, now Patent No. 3,256,419, dated June 14, 1966. Divided and this application Jan. 19, 1966, Ser. No. 534,560
Int. Cl. B23k *11/06*
U.S. Cl. 219—82 **13 Claims**



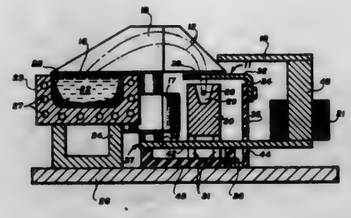
Method and apparatus for resistance seam welding of overlapped strip ends which have been severed, clamped and aligned for the passage of roller electrodes thereover. Means are provided for sensing misalignment with means responsive to the sensing means to correctly align the strip ends. Strip marking means are also provided for identification purposes.

3,446,934

ELECTRON BEAM HEATING APPARATUS

Charles W. Hanks, Orinda, Calif., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York

Filed Jan. 30, 1968, Ser. No. 701,727
Int. Cl. B23k *9/00;* **H05b** *1/00*
U.S. Cl. 219—121 **8 Claims**



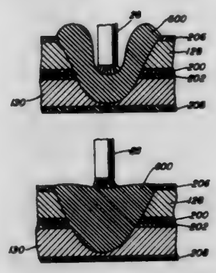
Apparatus is described for heating a target surface by means of an electron beam. A pair of main pole pieces establish a transverse magnetic field in the path of the electron beam. In addition, a third pole piece is positioned to establish a further transverse magnetic field in the path of the electron beam, the third field extending between the third pole piece and one of the main pole pieces.

3,446,935

NONCONSUMABLE ELECTRODE ARC SPOT WELDING OVERCOMING A HEAT BLOCK OR LOSS

Stanley A. Agnew, New Providence, and Walter N. Canulette, Berkeley Heights, N.J., assignors to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York

Continuation-in-part of application Ser. No. 366,299, May 11, 1964. This application Aug. 17, 1964, Ser. No. 390,076
Int. Cl. B23k *9/12, 11/10*
U.S. Cl. 219—127 **6 Claims**



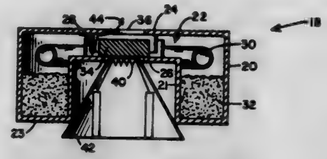
The method of making spot welds between workpieces and more particularly workpieces which have refractory coatings. While using the nonconsumable electric arc welding process the arc action is used to melt the metal in the top workpiece and push it aside by narrowing the arc gap and/or by increasing the arc current so that the arc may be directed on the refractory interface between the workpieces to break it away thereby permitting the molten metal of the two workpieces to mix together. After the interface is broken and the metals mix the arc action is reduced by widening the arc gap and/or by reducing the arc current to permit the metal pushed aside to flow back to fill the arc-created crater.

3,446,936

EVAPORANT SOURCE

Marlin M. Hanson, Minneapolis, William A. Harvey, St. Paul, and Paul E. Oberg, Minneapolis, Minn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Jan. 3, 1966, Ser. No. 518,129
Int. Cl. F22b *1/28*
U.S. Cl. 219—271 **1 Claim**



An evaporant source causes materials to be completely vaporized eliminating any unvaporized particles which could otherwise be carried in the vapor stream.

3,446,937

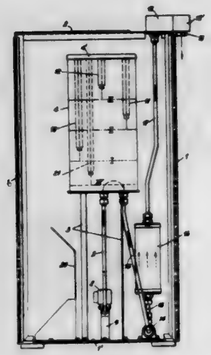
WATER HEATER FOR COFFEE MACHINES

Max Hugentobler, 43 Schwandenwiesen, 8052 Zurich, Switzerland

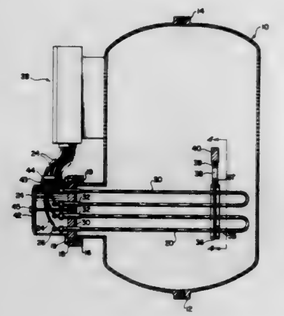
Filed Oct. 23, 1965, Ser. No. 503,545
Int. Cl. F24h *1/20*
U.S. Cl. 219—297 **6 Claims**

This provides a water heater having a cold tank in which the level of the water is automatically controlled through the use of electrode switches. The cold water

flows to a lower position in heater units having smaller capacities and controlled to heat the water which naturally rises into a collecting chamber from which it is taken for producing coffee.



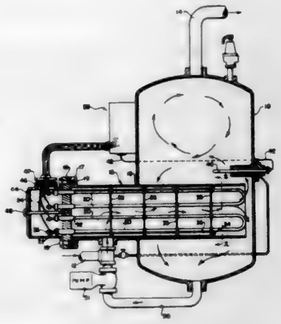
3,446,938
HINGEDLY MOUNTED ELECTRIC WATER HEATER
Lemuel J. Morgan, Stroudsburg, Pa., assignor to The Patterson-Kelley Co., Inc., East Stroudsburg, Pa.
Filed Sept. 8, 1966, Ser. No. 577,921
Int. Cl. H05b *3/02*
U.S. Cl. 219—316 **3 Claims**



An electrical resistance immersion-type heater device swingably mounted in a liquid container to accommodate thermal expansion. The heater device is supported at one end by a removable header sheet, said header sheet being mounted over an opening in the container. The heater device is supported at the opposite end by a hanger device, said hanger device being pivotally mounted upon a support member which traverses the interior of the container.

3,446,939
ELECTRIC IMMERSION WATER HEATER
Lemuel J. Morgan, Stroudsburg, and Leonard F. Lowe, East Stroudsburg, Pa., assignors to The Patterson Kelley Co., Inc., East Stroudsburg, Pa.
Filed Sept. 8, 1966, Ser. No. 577,922
Int. Cl. H05b *3/78*
U.S. Cl. 219—316 **7 Claims**

A liquid heater comprising a structure defining a horizontally elongated liquid passgeway connected in fluid communication at its opposite ends to separate feed liquid inlet and heated liquid outlet devices. A heating element including a header sheet is detachably mounted on and closes one end of the passageway and a plurality of electrical resistance heating blades are mounted upon and extending through the header sheet into the passageway. A plurality of vertically standing baffle plates rearranged in a relatively spaced relationship lengthwise of the passageway and serve to direct liquid circulating through the passageway to travel in a horizontal zig-zag path in heat exchange relation with the heating blades.



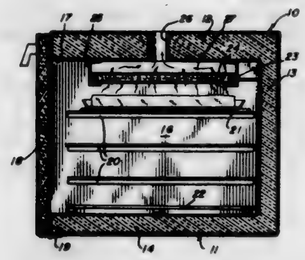
3,446,940
HINGEDLY MOUNTED ELECTRIC WATER HEATER
Lemuel J. Morgan, Stroudsburg, Pa., assignor to The Patterson-Kelley Co., Inc., East Stroudsburg, Pa.
Filed Sept. 8, 1966, Ser. No. 577,984
Int. Cl. H05b *1/00, 3/02, 3/80*
U.S. Cl. 219—318 **1 Claim**

In a liquid container, an immersion-type heater device is swingably mounted to accommodate length variation of said heater device. The device includes a pivotally mounted support, a plurality of removable heater rods and a header sheet. The header sheet is provided with ferrule devices and threadably mounted packing glands enclosing deformable packing seals to fluid-seal said removable heater rods relative to said ferrule devices.

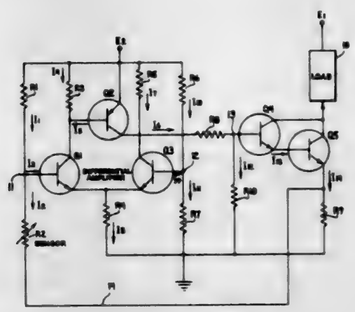
3,446,941
OVEN HEATING MEANS
Harold L. Frick, Marion, Ohio, assignor to Whirlpool Corporation, a corporation of Delaware
Filed Sept. 14, 1966, Ser. No. 579,271
Int. Cl. F27d *11/02*
U.S. Cl. 219—409 **12 Claims**

An oven provided with a heating element having a porous mass juxtaposed thereto whereby the element heats the mass to a preselected temperature for heating the oven

chamber and concurrently causes combustion of combustible products such as smoke and grease in the oven chamber air prior to discharge of the air through said mass to the ambient atmosphere.



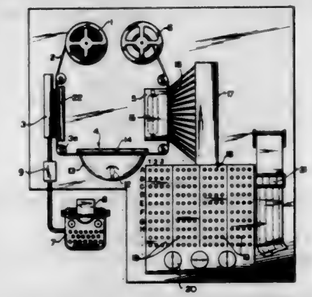
3,446,942
WINDOW DE-ICING CONTROLLER CIRCUIT
Robert M. Letsinger, Greenfield, and James K. Parmerlee, Indianapolis, Ind., assignors to the United States of America as represented by the Secretary of the Navy
Filed Jan. 10, 1967, Ser. No. 608,457
Int. Cl. H05b *1/02*
U.S. Cl. 219—501 **2 Claims**



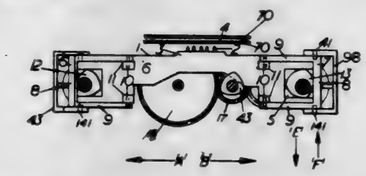
A transistor switching circuit having a thermistor sensor in an environment, such as an aircraft window shield or missile window or dome to sense temperatures where icing would begin, to switch "on" a load window heater circuit to prevent fogging and icing without the use of mechanical switching relays.

3,446,943
INFORMATION STORING APPARATUS
Karl Hoyer, Leinfelden, Wurttemberg, and Alfred Ortlieb, Stuttgart-Vaihingen, Germany, assignors to Robert Bosch G.m.b.H., Stuttgart, Germany
Filed June 1, 1965, Ser. No. 460,257
Claims priority, application Germany, June 4, 1964, B 77,085
Int. Cl. G06k *1/12, 3/00;* **G01d** *15/06*
U.S. Cl. 235—61.9 **4 Claims**

A record carrier having a burnable layer is transported under burner electrodes representing characters. Manually operated members representing the same characters operate control switches connected with the burner electrodes so that the same burn areas into the layer in different patterns for representing selected characters. Readout elements arranged in the pattern of the burner electrodes sense the pattern of the burnt areas and produce control signal for actuating printing or copying means to print the respective characters.

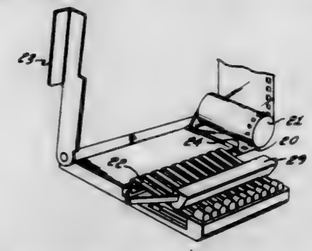


3,446,944
APPARATUS FOR READING INFORMATION FROM INFORMATION BEARING MEDIA
Arthur John Compton Soper, Croydon, Surrey, England, assignor to Creed and Company Limited, Croydon, Surrey, England, a British company
Filed Feb. 4, 1964, Ser. No. 342,433
Claims priority, application Great Britain, Feb. 14, 1963, 6,034/63
Int. Cl. G06k *7/06, 7/01*
U.S. Cl. 235—61.11 **11 Claims**



Apparatus for feeding a perforated medium in either of two directions, and for reading code combinations of perforations therein between the feeding steps. The feeding and reading means are coupled to a common driving means, and indicating means is included for indicating that a feeding operation has been effected and in which direction the feeding step has taken place.

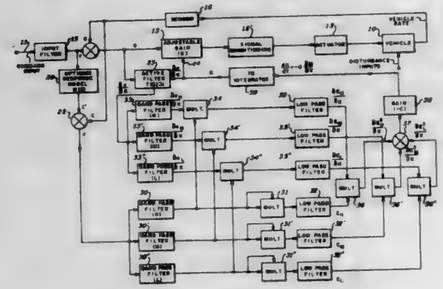
3,446,945
CODED PHOTOGRAPHIC RECORD CARD FOR USE IN DATA STORAGE DEVICES AND METHOD OF MAKING SAME
Russell S. Robinson, 124 Via Yella, Newport Beach, Calif. 92660
Filed Apr. 29, 1964, Ser. No. 363,494
Int. Cl. G06k *1/06, 19/06;* **B42f** *19/00*
U.S. Cl. 235—61.12 **9 Claims**



A coded photographic record card for use with data storage and retrieval devices is made by cropping a length of film from a conventional strip of the same in-

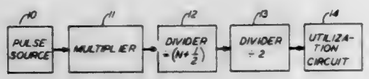
cluding sprocket openings located along one or both edges of the strip. One or both longitudinal marginal edge portions of such length of film material are thereafter removed by severing the webs located between the sprocket openings along lines located either near the inboard or near the outboard ends of each web so as to produce either the presence or absence of a coding tab at each web location depending on the location of the line along which each web is severed.

3,446,946
POWER-MOMENT SELF-ADAPTIVE CONTROL SYSTEM
Richard E. Andeen, Phoenix, Ariz., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed Dec. 1, 1964, Ser. No. 415,125
Int. Cl. G06f *15/18*; G05b *13/02*; B64c *13/50*
U.S. Cl. 235—150.1 **7 Claims**



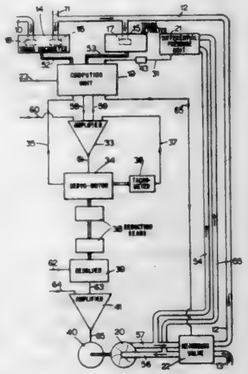
A self-adaptive control, for aircraft flight control systems for example, which combines the principles of an optimum model reference type of control and an "energy-balance" type of control to provide an improved system having advantages not obtainable by either alone. Basically, the self-adaptive control adjusts the over-all system gain so as to match the response of the actual system to that of an optimum response model while at the same time considering and maximizing the stability of the over-all system (minimum moment).

3,446,947
PULSE TRAIN REPETITION RATE DIVIDER THAT DIVIDES BY A FRACTIONAL NUMBER
Robert L. Overstreet, Jr., Burlington, N.C., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Nov. 30, 1965, Ser. No. 510,522
Int. Cl. G06g *7/16*; H03k *23/24*
U.S. Cl. 235—150.3 **4 Claims**



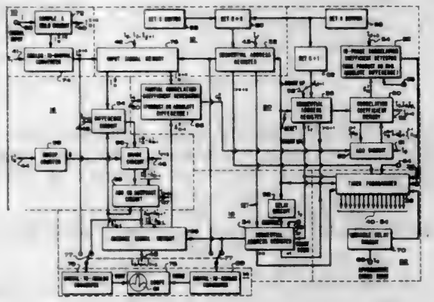
The disclosed arrangements divide a pulse train repetition rate by a fractional number that does not include one-half. The reptition rate is sequentially multiplied and divided with either operation being performed first. Multiplication is by a whole number while division is performed in two stages comprising division by a fractional number that includes the fraction one-half and then division by two.

3,446,948
AIRCRAFT INSTRUMENT CORRECTION
Henry J. Duck, Sutton, Surrey, England, assignor to Mechanism Limited, Croydon, Surrey, England, a British company
Filed Aug. 31, 1964, Ser. No. 393,217
Claims priority, application Great Britain, Aug. 29, 1963, 34,229/63
Int. Cl. B64d *43/00*
U.S. Cl. 235—151.3 **6 Claims**



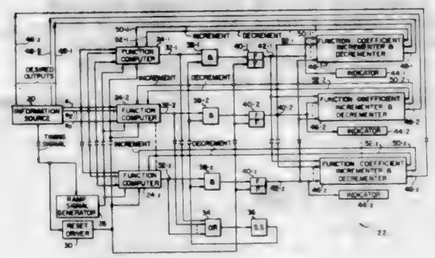
A device for producing, for aircraft instruments, corrected static pressure from uncorrected static pressure. The air in the static pressure system is compressed or decompressed by a variable speed fan. A computing circuit calculates the required correction pressure from Mach number and altitude signals which are produced by a transmitting Machmeter and a transmitting altimeter. The transmitting Machmeter and altimeter are fed with uncorrected static pressure and pitot pressure and uncorrected static pressure alone respectively. The required correction pressure is compared with the actual correction pressure across the fan and the difference is used to control the speed of the fan motor.

3,446,949
SIGNAL-TO-NOISE RATIO ENHANCEMENT METHODS AND MEANS
Charles R. Trimble, Palo Alto, Calif., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Oct. 28, 1966, Ser. No. 590,273
Int. Cl. G06f *7/00*
U.S. Cl. 235—152 **14 Claims**



A signal processing system for recovering repetitive signals from noise. A sweep is made wherein selected digitized amplitude samples are taken over a larger input interval than the selected input interval. As the first sweep is being stored, the operator determines with the aid of output display means, the set of amplitude samples that completely represent the selected input interval; this set is averaged and stored. Correlation means is provided for correlating each subsequent sweep with the averaged set so as to determine the set of each subsequent sweep that is most in phase with the average set. The signal averaging means processes each in-phase set to up-date the average set stored. As each new average is stored, it is displayed by the output display means to provide an on-line indication of the selected input interval with an enhanced signal-to-noise ratio.

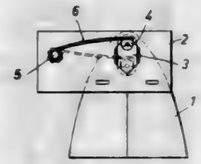
3,446,950
ADAPTIVE CATEGORIZER
John H. King, Jr., and Cyril J. Tunis, Endwell, and Mitchell P. Marcus, Binghamton, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 31, 1963, Ser. No. 334,765
Int. Cl. G06g *7/28*; G06f *7/02*; G11b *13/04*
U.S. Cl. 235—197 **17 Claims**



1. In an adaptive system for generating different output signals in response to different predetermined conditions of a plurality of input signals, the combination of a plurality of function computers each corresponding to a different output signal, means for applying the same input signals to each of the function computers, each of the function computers including weighting means for weighting the input signals and adding means for adding the weighted input signals to generate a sum signal, detecting means for detecting the function computer generating the largest sum signal and those function computers generating sum signals within a predetermined range from the largest sum signal, control means for designating which of the function computers should generate the largest sum signal corresponding to a particular set of conditions of said input signals, and modifying means for adjusting the weighting means forming a part of the function computers detected by the detecting means and designated by the control means to change the weighting of the input signals.

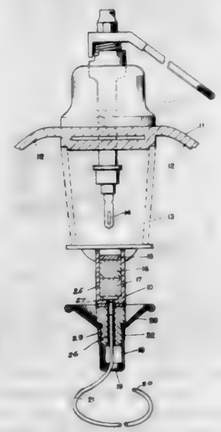
3,446,951
ARRANGEMENT FOR VARYING THE FOCUS OF A FLASH LAMP IN PHOTOGRAPHIC ELECTRONIC FLASH UNITS
Walter Schmidt, Berlin, Germany, assignor to Loewe Opta GmbH, Berlin, Germany, a company of Germany
Filed Dec. 20, 1965, Ser. No. 515,805
Claims priority, application Germany, Dec. 22, 1964, L 38,655
Int. Cl. G03b *15/035*
U.S. Cl. 240—1.3 **6 Claims**

An electronic flash unit for photographic purposes has two opposite side pieces. A reflector is held between the side pieces. A two-ended flash lamp extends across the reflector and one end extends through a hexagonal aperture in each of the side pieces. A leaf spring is attached to each end of the flash lamp, and the opposite ends of



the leaf springs are attached to an adjusting mechanism such that the leaf springs may be rotated to selectively and resiliently hold the flash lamp in either end of the hexagonal apertures to vary the focus.

3,446,952
SURGICAL LIGHT AND OPTICAL FIBER BUNDLE COMBINATION
Donald F. Sitter and Robert P. Herzog, Erie, Pa., assignors to American Sterilizer Company, Erie, Pa., a corporation of Pennsylvania
Filed Feb. 24, 1966, Ser. No. 529,819
Int. Cl. F21v *33/00*; F21s *15/00*
U.S. Cl. 240—1.4 **4 Claims**

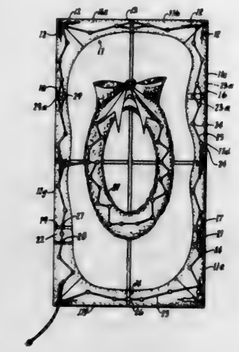


A surgical light illuminating apparatus employing a source of light, a handle, a lens and an optical fiber bundle. The handle for adjusting the position of the apparatus is mounted adjacent to the light source. The optical fiber bundle, having one end adjacent to the light source, extends through the handle. The light emitting end of the optical fiber bundle is disposed remote from the handle. A lens is mounted in the handle between the light source and the optical fiber handle for directing light into the end of the optical fiber bundle.

3,446,953
ELECTRICAL WINDOW DECORATION
Thomas Mylonas, 2409 28th St., Astoria, N.Y. 11102
Filed Feb. 11, 1966, Ser. No. 526,763
Int. Cl. F21p *1/02*
U.S. Cl. 240—10 **3 Claims**

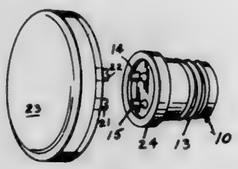
A window decoration comprised of transparent plastic sheets divided into sections shaped to fit around the inner

perimeter of a window. Each section comprises a printed wiring circuit having a plurality of sockets thereon to



accommodate light bulbs. Snap fasteners electrically and mechanically connect the separate sections.

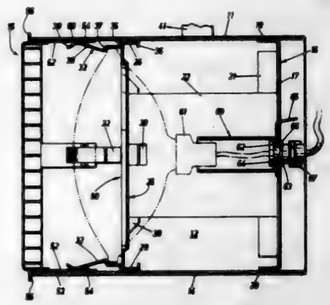
3,446,954
ELECTRICAL CONVERSION PLUG
Joseph Spiteri, Erie, Pa., assignor to Lake Shore Markers, Inc., Erie, Pa., a corporation of Pennsylvania
Filed Mar. 13, 1967, Ser. No. 622,801
Int. Cl. F21l *15/06*
U.S. Cl. 240—11.2 5 Claims



An elecrtic plug and lamp useable in lighted signs. The plug has a cylindrically shaped body made of electrical insulating material surrounded by a shell of conducting material having threads on the outside. It also has an electrode fixed to the body and two frustoconically shaped male terminals connected to the shell and electrode. The lamp is round with a flat side and a convex side and has two female terminals in the form of metal tubes of sufficient size to snugly receive the male terminals.

3,446,955
LAMP HOUSING
Frederick Arthur Bailey, Port Credit, and William H. Montgomery, Willowdale, Ontario, Canada, assignors to Rotaflex of Canada Limited, Toronto, Ontario, Canada
Filed Apr. 29, 1966, Ser. No. 546,391
Int. Cl. F21v *9/10*
U.S. Cl. 240—46.59 1 Claim

A display lamp comprising a main body having an optical element with peripherally mounted spaced apart tongue elements secured to one end and a lamp supported within the main body. Spring clips are provided for holding the lamp and the optical element in the main body. The spring clips cooperate at their forward ends with an individual one of the tongue elements on the optical element to hold the tongue, and are bent intermediate their length to receive a peripheral portion of the lamp. An arm projects through the rear of the main body and cooperates with the spring clips for rotating the lamp about an axis.



3,446,956
LOCKING MEANS FOR LAMP HOLDER
James S. Lagana, Clinton, Md., assignor of twelve percent to George R. Douglas, Jr., Washington, D.C.
Filed Apr. 19, 1966, Ser. No. 543,628
Int. Cl. F21v *21/00*
U.S. Cl. 240—52 3 Claims

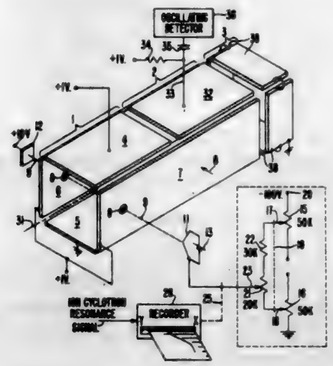


A lamp holder consists of an open-ended cylindrical housing in which an electrical socket having threads for receiving a bulb is mounted. An aperture extends radially through the wall of the housing. A resilient insulating bushing is secured in the aperture and a threaded member extends through and is threadedly secured in the insulating bushing.

3,446,957
ION CYCLOTRON RESONANCE SPECTROMETER EMPLOYING MEANS FOR RECORDING IONIZATION POTENTIALS
David E. Gielow, Los Altos, and Peter M. Llewellyn, Menlo Park, Calif., assignors to Varian Associates, Palo Alto, Calif., a corporation of California
Filed May 2, 1967, Ser. No. 635,513
Int. Cl. B01d *59/44*
U.S. Cl. 250—41.9 3 Claims

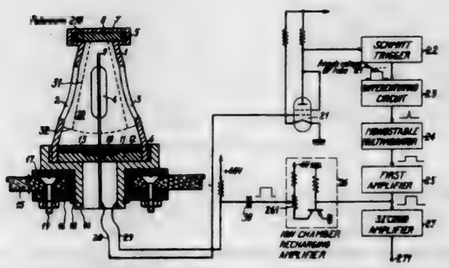
An ion cyclotron resonance spectrometer is disclosed having means for recording the ionization potential for various species of ions. The spectrometer includes an ion source region in which a beam of electrons is projected through an electrode structure for ionizing gas therein and for producing a beam of ions. The electron beam voltage

is variable and is swept over a predetermined range of beam voltages to ionize certain gaseous substances in the source over a range of beam potentials (ionizing potentials). The ion beam is projected into an analyzer region which applies a radio frequency electric field with a component orthogonal to a D.C. magnetic field for exciting and detecting cyclotron resonance of a predetermined species of ion. The cyclotron resonance signal is proportional to the number of the predetermined species of ion



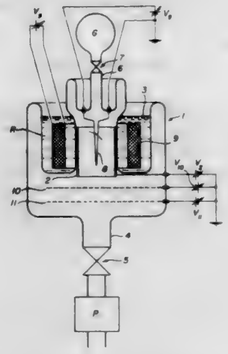
in the analyzer region. The resonance signal intensity is recorded as a function of the ionizing electron beam potential. An extrapolation of the recorded trace to the base line yields the ionization (appearance) potential which is useful for identifying certain ions and gases. In a preferred embodiment, the recorder X-axis drive mechanically drives a potentiometer for sweeping the ionizing beam voltage and the resonance signal is recorded on the Y-axis input of the recorder.

3,446,958
IONIZATION TYPE GAUGE USABLE OVER A WIDE RANGE OF PRESSURES
Francis G. Cambou and Francis L. Cotin, Toulouse, France, assignors to Centre National de la Recherche Scientifique, Paris, France, a French body corporate
Continuation-in-part of aplication Ser. No. 454,318, May 10, 1965. This application June 3, 1968, Ser. No. 734,132
Claims priority, application France, May 8, 1964, 973,760
Int. Cl. G01n *23/12, 21/26;* H01j *37/08*
U.S. Cl. 250—43.5 2 Claims



In a pressure measuring ionization gauge included as a capacitor in a pulse generator to vary the pulse recurrence frequency thereof, said gauge comprising an ionization chamber having the shape of a hallow frustum of revolution bounded by a tapered metallic wall, having an aperture angle between 20° and 45°, a small open base and a large closed base, the wall of which is provided with slots permitting the peneration of air into said chamber, a radio-active particle source placed in the plane of the small base of the chamber, an ion-collector electrode placed along the axis of revolution of the chamber spaced apart from the particle source and in capacitive relationship with the chamber wall and means for applymg an electric field between said ion-collector electrode and the chamber wall whereby said electric field is substantially transverse to the particle trajectories and becomes weaker with increasing distance from said source which improves the linearity of the gauge.

3,446,959
METHOD OF AND APPARATUS FOR PRODUCING PARTICLES IN A METASTABLE STATE
Franklin Albert Baker, Carouge, Geneva, Switzerland, assignor to Battelle Memorial Institute, International Division, Geneva, Switzerland, an American body corporate
Filed Mar. 22, 1966, Ser. No. 536,441
Claims priority, application Switzerland, Mar. 23, 1965, 4,049/65
Int. Cl. G01n *23/12*
U.S. Cl. 250—49 20 Claims

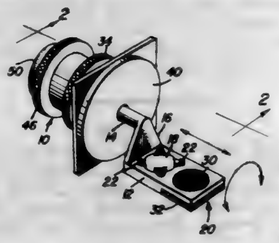


A method for producing fluid particles in a metastable state by forming through adsorption on a surface a layer of fluid and bombarding the layer with soft electrons directed to strike the layer at an angle of incidence to excite the particles thereof and release a majority of the particles in metastable state.

3,446,960
DEVICE FOR MEASURING ELECTRON-BEAM INTENSITIES AND FOR SUBJECTING MATERIALS TO ELECTRON IRRADIATION IN AN ELECTRON MICROSCOPE
Thomas P. Sciacca, Laurel, and Alfred G. Eubanks, Kensington, Md., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Aug. 30, 1965, Ser. No. 483,891
Int. Cl. H01j *37/26*
U.S. Cl. 250—49.5 16 Claims

This invention relates to apparatus, employed in conjunction with an electron microscope, for positioning and/or retaining optical detectors, electrical detectors, or materials (samples) in the microscope which intercept the electron beam. A readily removable probe assembly is adapted to have a first portion which extends into the specimen chamber of the electron microscope and a second portion which remains external to the specimen chamber for supporting a pair of controls. Positioned upon a platform member of the first portion is a specimen holder and a detector. Both an electrical and an optical detector

are utilized. The specimen holder includes electrical retaining grounding clips. The detector includes a collector plate positioned immediately below a negatively biased grid for yielding an electrical indication of the electron flux. A fluorescent screen produces a visual indication of the beam location. The rotation of a wheel on the second portion of the probe assembly will cause axial movement of the platform member. Similarly, rotation of a



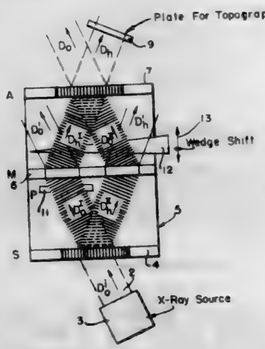
second wheel will permit rotational movement of the platform member. Accordingly, the manpulation of the pair of wheels will permit the detector to be positioned to intercept the electron beam. After the detector is centered in the beam and the microscope adjusted to yield the desired intensity, the wheels are rotated so that the specimen in the specimen holder replaces the detector in the electron beam.

3,446,961

X-RAY INTERFEROMETER USING THREE SPACED PARALLEL CRYSTALS

Ulrich Karl Bonse, Munster, Germany, and Michael Hart, Bristol, England, assignors to Research Corporation, New York, N.Y., a nonprofit corporation of New York

Filed Feb. 1, 1966, Ser. No. 524,088
Int. Cl. G01n *23/20*
U.S. Cl. 250—51.5 **5 Claims**



An X-ray interferometer element formed of a single crystal. Three upstanding and parallel walls are joined to a base, the walls performing the functions of a beam splitter, transmission mirrors, and analyzer.

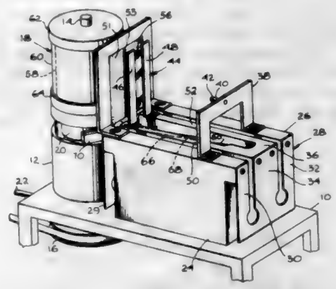
3,446,962

APPARATUS FOR RECORDING THE ABSORPTION OF GAMMA RAYS EMANATED FROM A SOURCE

Egbert Kankeleit, Darmstadt, Germany, assignor to California Institute Research Foundation, Pasadena, Calif., a corporation of California

Filed Sept. 30, 1966, Ser. No. 583,354
Int. Cl. G01t *1/34*
U.S. Cl. 250—83 **7 Claims**

A Mossbauer spectrometer is provided wherein a gamma ray source emits gamma rays at a target which is continuously moved relative to the source with a changing velocity. Film holding means are provided which is moved in synchronism with the moving target to repeatedly bring particular portions of film directly in position for exposure only when the relative velocity of the source and the target is of a particular value.

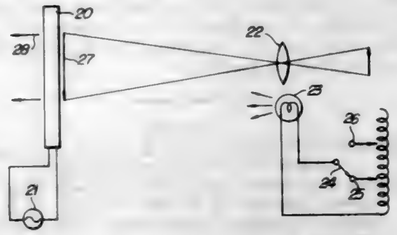


3,446,963

INFRARED IMAGE CONVERTING DEVICE WITH IMPROVED RESPONSE TIME

Tadao Kohashi, Yokohama, Tadao Nakamura, Kawasaki-shi, and Kunio Nakamura, Tokyo, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan

Filed Aug. 11, 1967, Ser. No. 660,104
Claims priority, application Japan, Aug. 15, 1966, 41/54,081; Oct. 27, 1966, 41/71,297, 41/71,309, 41/71,311
Int. Cl. G01t *1/00*
U.S. Cl. 250—83.3 **9 Claims**



This specification discloses a solid-state infrared image converting device utilizing infrared photoconduction quenching phenomenon, said device being adapted to rapidly eliminate the residual effect after the removal of infrared rays so that it can be used in the rapid changing of infrared images and the displaying of moving infrared images. Also, description is made of examples of a method of eliminating the residual effect produced in an converted image through irradiation of a visible light having a relatively high intensity and those of a device wherein a visible light having a relatively high intensity is irradiated for the purpose of eliminating the residual effect, and a residual photoconductivity persisting after interruption of said visible light is used as a bias photocurrent, so that a separate bias light source is eliminated.

3,446,964

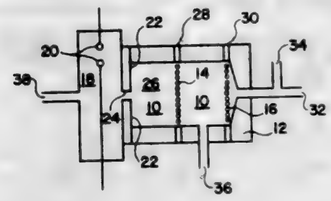
METHOD OF SUPPRESSING PHOTOIONIZATION OF A GAS SAMPLE IN AN ELECTRON CAPTURE DETECTOR

James C. Sternberg, Fullerton, Calif., assignor to Beckman Instruments, Inc., a corporation of California

Filed Feb. 24, 1966, Ser. No. 529,861
Int. Cl. G01t *1/18*
U.S. Cl. 250—83.6 **12 Claims**

A method of operating an electron capture detector having a detection chamber including a polarizing electrode and a collector electrode and including a discharge

chamber containing a source of excitation which also emits an ultraviolet light. The method includes the step of adding a photoabsorbing gas into the detection cham-



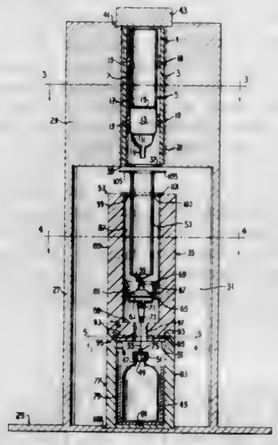
ber for absorbing energy of the ultraviolet energy below the ionization potential of the sample gas to be detected thereby suppressing the ionization of the sample gas by the ultraviolet energy.

3,446,965

GENERATION AND CONTAINERIZATION OF RADIOISOTOPES

George Ogier, Webster Groves, and Donald J. Shumate, Glendale, Mo., assignors to Mallinckrodt Chemical Works, St. Louis, Mo., a corporation of Missouri.

Filed Aug. 10, 1966, Ser. No. 571,466
Int. Cl. G21k *1/00*
U.S. Cl. 250—106 **15 Claims**



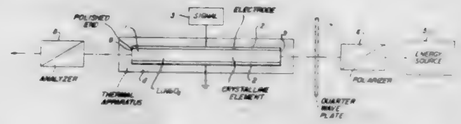
Apparatus and method for generating a sterile daughter radioisotope solution from a generator charged with a parent radioisotope and containerizing the daughter radioisotope in an evacuated container. The apparatus includes a shield having an upper chamber for receiving the generator and a lower compartment for receiving an evacuated container and a containerization unit. The shield is provided with a door for insertion and removal of the container and containerization unit. The containerization unit contains a transfer vessel for receiving the eluate containing the dissolved radioisotope, the vessel having a tubular needle extending therefrom adapted to be pierced through a stopper in the evacuated container for suction of the eluate from the vessel into the evacuated container. The vessel is supported in the lower compartment above the container, the vessel and container being adapted for relative vertical movement to cause the needle to pierce the stopper for suction of the eluate from the vessel into the container.

3,446,966

OPTICAL $LiNbO_3$ MODULATOR

George E. Peterson, Plainfield, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed July 28, 1965, Ser. No. 475,513
Int. Cl. H04b *9/00*; **H01s** *3/00*
U.S. Cl. 250—199 **9 Claims**



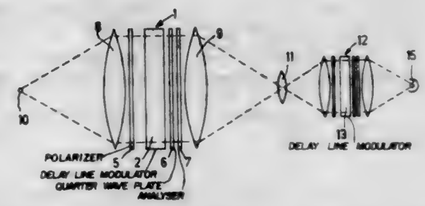
Useful electro-optic modulators with active lithium meta niobate crystals are possible at elevated temperatures.

3,446,967

APPARATUS FOR REVERSING THE SEQUENCE OF PULSES IN A PULSE GROUP

John Siegfried Palfreeman, Brockham Betchworth, England, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 6, 1965, Ser. No. 493,402
Claims priority, application Great Britain, Oct. 6, 1964, 40,713/64
Int. Cl. H04b *9/00*
U.S. Cl. 250—199 **4 Claims**



A device for reversing the sequence of pulses in a pulse group in which a group of compression waves corresponding to the pulse group and moving through the medium of a delay line modulator is imaged into a second modulator and optically reduced in order to move through the second modulator at a rate lower than the propagation velocity thereof. When the entire image is imaged in the second modulator a single compression wave generated behind the image in the second modulator and moving in the same direction as, and at a greater velocity than the image in the second modulator, passes through the image. The resultant light pattern corresponding to an inverted form of the original signal is then photoelectrically reconverted into an electrical signal.

3,446,968

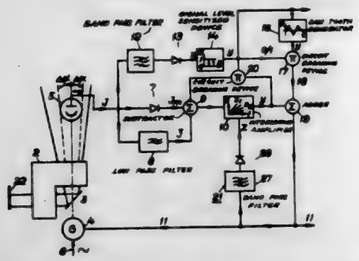
DEVICE FOR OPTICAL DETERMINATION OF THE POSITION OF RADIATING OR REFLECTING BODY

Vilmos Török, Vasteras, Sweden, assignor to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden

Filed Mar. 24, 1966, Ser. No. 537,074
Claims priority, application Sweden, Mar. 27, 1965, 3,995/65
Int. Cl. G01j *1/20*
U.S. Cl. 250—201 **5 Claims**

An arrangement for the optical determination of the position of a radiating or reflecting body has a mirror for reflecting from a photocell light emitted or reflected

from the body. The mirror is oscillated to scan a part of the body. The output voltage from the photocell has a D.C. component and an A.C. component. There is an arrangement for obtaining an algebraic mean value I_m equal to half the sum of maximum and minimum values



of the A.C. component and an arrangement for obtaining a mean time value equal to

$$\frac{I}{T}\int_0^T Idt$$

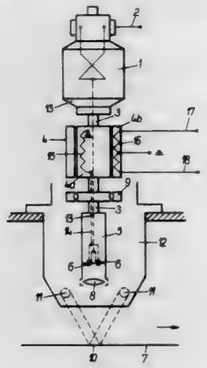
where T is a pre-determined time and I is the momentary value of the A.C. signals. These signals are combined and the combined signals are used to change the direction of the mirror.

3,446,969

PHOTOELECTRIC TRACING CONTROL MECHANISM EMPLOYING AN ELECTRICAL FUNCTION TRANSMITTER

Gerhardt Lange, Frankfurt am Main, Germany, assignor to Messer Griesheim GmbH, Frankfurt am Main, Germany, a corporation of Germany

Filed July 22, 1966, Ser. No. 567,292
Claims priority, application Germany, July 22, 1965, M 66,071
Int. Cl. G05b *11/26;* **H01j** *39/12*
U.S. Cl. 250—202 **7 Claims**



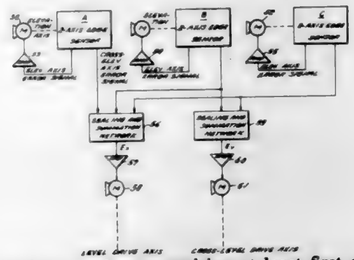
A photoelectric tracing control for afterfinishing machines such as separating and plasmic cutting machines utilizes photoelectric resistors as signal changers and utilizes an electric function transmitter for the control of the coordinate drive. The electric function transmitter consists of a rotor with a winding and of a stator with a plurality of windings. The rotor is charged with an alternating current. The photoelectric resistors are mechanically connected to the rotor by a constantly rotating shaft and are electrically connected to the rotor winding. The alternating current is automatically producible for the charging of the rotor winding by the rotating photoelectric resistors.

3,446,970

RADIATION SENSITIVE HIGH ACCURACY HORIZON SEEKER

Saul Moskowitz, Flushing, and Harry Wade Burkhart, Jr., New Paltz, N.Y., assignors to Kollsman Instrument Corporation, Elmhurst, N.Y., a corporation of New York

Filed May 15, 1963, Ser. No. 280,648
Int. Cl. G06f *15/50;* **F42b** *15/02;* **G01j** *1/20*
U.S. Cl. 250—203 **9 Claims**



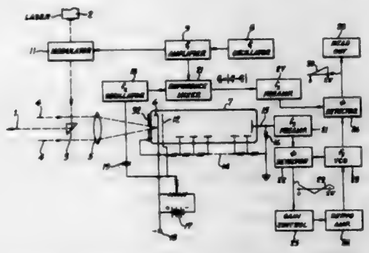
7. A horizon tracker comprising at least first and second two-axis edge-sensors mounted on a common platform; each of said first and second two-axis edge-sensors having first and second respective horizon scanners disposed at a small angle with respect to one another for observing a small horizon segment; said first and second two-axis edge-sensors having a common elevation plane; said first and second two-axis edge-sensors being disposed at an angle to one another to observe different portions of a horizon; adjustable mounting means connecting each of said first and second two-axis edge-sensors to said common platform; each of said edge-sensors generating output signals related to the position of a horizon with respect to each of said edge-sensors; and servo means connected to said adjustable mounting means and to said output signals; each of said first and second two-axis edge-sensors being adjustable in their said elevation plane responsive to their respective total output signal from their respective scanners and being adjustable in their cross-elevation plane responsive to the difference in output signals from their respective scanners, and a third two-axis edge-sensor mounted on said common platform and having an elevation plane common to the elevation plane of said first and second two-axis edge-sensors; said third two-axis edge-sensor adding one degree of redundancy to said horizon tracker.

3,446,971

OPTICAL RANGING SYSTEM USING A BEAT FREQUENCY RESPONSIVE PHOTOMULTIPLIER

Kenneth A. Ruddock, Palo Alto, Calif., assignor to Spectra-Physics, Inc., Mountain View, Calif., a corporation of California

Filed May 31, 1966, Ser. No. 553,918
Int. Cl. H01j *39/12, 39/16*
U.S. Cl. 250—207 **12 Claims**



An optical ranging system in which the source radiation is modulated at a first frequency and intercepted by a

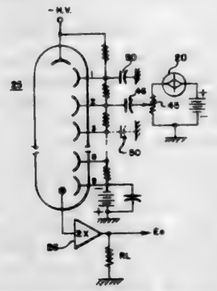
photomultiplier tube after travelling over the distance to be measured. A fixed oscillator signal at a second frequency is applied to a grid positioned adjacent the photocathode of the multiplier tube, thereby generating a photocurrent signal at a beat frequency, substantially lower than the first frequency, at which the photomultiplier is reliably responsive. The beat frequency signal is phased detected to provide a continuous indication of the distance to be measured. The beat frequency phase detection system includes a local oscillator which is phase locked to the beat frequency signal through a linear phase detector and a servo amplifier in order to reproduce the beat frequency signal with enhanced signal-to-noise ratio. The gain of the servo amplifier can be varied in order to vary the response time without distorting the wave shape of the ramp function read-out signal which is obtained by nonlinear detection of the local oscillator output.

3,446,972

AUTOMATIC GAIN CONTROL FOR PHOTOMULTIPLIER TUBES EMPLOYING A MONITORING PHOTOCELL

George P. Bentley, Amherst, and Joseph S. Lord, Walpole, Mass., assignors to Kollmorgen Corporation, Garden City, N.Y., a corporation of New York

Filed July 18, 1966, Ser. No. 566,065
Int. Cl. H01j *39/12;* **G01d** *5/34*
U.S. Cl. 250—207 **8 Claims**



1. In a photometer having a pulsed light source for alternately illuminating standard and unknown sample materials and at least one main photosensor for detecting the pulses of light directed thereto from said standard and unknown sample materials, means for reducing the photometer output noise error resulting from variations in output amplitude of the light pulses produced by said source, said means comprising:

pulse light monitoring means for producing a control signal proportional in amplitude to the light output from said light source, said means including a monitoring photosensor with optical means for imaging a portion of the light produced by said pulsed light source on said monitoring photosensor,

and gain modulation means responsive to said control signal for varying the amplitude of the output signal from said main photosensor inversely as a function of the amplitude of said control signal.

3,446,973

SHIFT REGISTER DIRECTLY SETTABLE BY OPTICAL MEANS

Joseph F. Springer, Jr., Philadelphia, Pa., assignor to Philco-Ford Corporation, Philadelphia, Pa., a corporation of Delaware

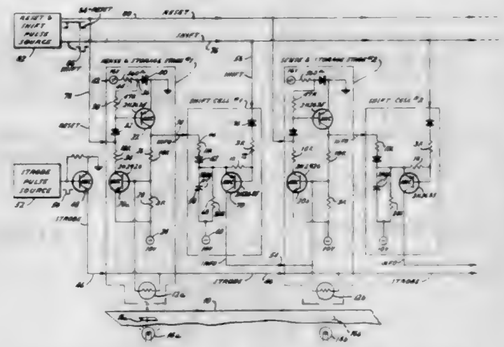
Filed July 14, 1966, Ser. No. 565,316
Int. Cl. H01j *39/12*
U.S. Cl. 250—208 **10 Claims**

1. A shift register, comprising:

(a) two bistable stages, each having (1) an input terminal to which application of a predetermined signal will cause said stage to switch to a second stable state when said stage is in a first of its stable states, and (2) an output terminal for supplying a different voltage for each of said stable states,

(b) means for selectively supplying said predetermined signal to said stages,

(c) a shift cell connected between the output terminal of a first of said bistable stages and the input terminal of a second of said bistable stages and including (1) a storage capacitor having a first electrode connected to a fixed potential point and a second



electrode coupled, via a diode, to the output terminal of said first bistable stage and (2) gating means connected between said second electrode and the input terminal of said second bistable stage for connecting said second electrode to said input terminal of said second bistable stage in response to a shift input signal thereto, and

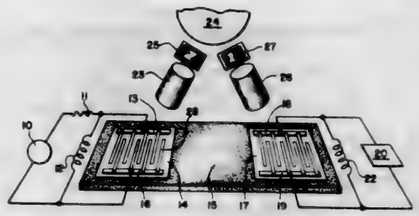
(d) means for resetting said bistable stages in their said first stable states and supplying a shift input signal to said shift cell so as to transfer information from said storage capacitor to said second bistable stage.

3,446,974

SOLID STATE ACOUSTIC SIGNAL TRANSLATING DEVICE WITH LIGHT ACTIVATED ELECTRODE INTERCONNECTIONS

Ruth F. Selwatz, Oak Park, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware

Filed Nov. 7, 1966, Ser. No. 592,564
Int. Cl. H01j *39/12*
U.S. Cl. 250—211 **10 Claims**



A solid state acoustic signal translating device such as a surface wave acoustic filter is described, in which the input and output transducers each comprise a large number of surface electrodes extending transversely with respect to the direction of surface wave propagation. A pair of principal electrodes extending longitudinally in the direction of surface wave propagation are spaced from the opposite ends respectively of the transversely extending electrodes, and a photoconductive film contacts each of the principal electrodes and the transversely extending electrodes. An optical system is provided for illuminating selected portions of the photoconductive film to establish

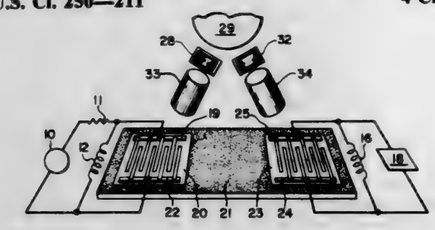
electrical connections between the principal electrodes and selected ones of the transversely extending electrodes to constitute a transducer electrode pattern whose frequency response is dependent on the particular ones of the transversely extending electrodes which are activated by the electrical connections. Means including an adjustable element in the optical system are provided for altering the locations of the illuminated portions of the photoconductive film to change the frequency response or tune the signal translating device.

3,446,975

ACOUSTO-ELECTRIC FILTER UTILIZING SURFACE WAVE PROPAGATION IN WHICH THE CENTER FREQUENCY IS DETERMINED BY A CONDUCTIVITY PATTERN RESULTING FROM AN OPTICAL IMAGE

Robert Adler, Northfield, and Adrian J. De Vries, Elmhurst, Ill., assignors to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware

Filed Nov. 7, 1966, Ser. No. 592,565
Int. Cl. H01j *39/12*
U.S. Cl. 250—211 **4 Claims**



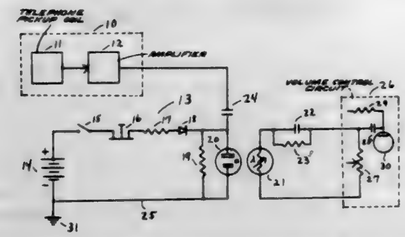
A tunable solid state acoustic filter comprises a substrate of a piezoelectric material which is also photoconductive or which has a photoconductive film on a major surface. A pair of fixed conductive electrodes on the major surface extend longitudinally with respect to the direction of surface wave propagation. An optical system is provided for selectively illuminating longitudinally spaced transverse strip portions of the major surface to establish a conductive transducer electrode pattern whose frequency response is dependent upon the spacings between the illuminated transverse strip portions. An adjustable element, such as a zoom lens or a series of interchangeable transparencies, is provided in the optical system for altering the spacings between the illuminated transverse strip portions to change the frequency response of the filter.

3,446,976

TELEPHONE OPERATED OPTOELECTRONIC VOLUME CONTROL

Clifford O. Shaw, 680 S. Prospect, Orange, Calif. 92667

Filed Feb. 23, 1966, Ser. No. 529,515
Int. Cl. G02f *1/28*
U.S. Cl. 250—217 **3 Claims**



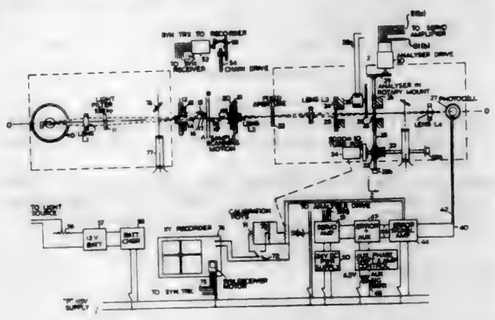
A remote volume control apparatus operated by the varying magnetic field produced by the ringing of a telephone to decrease the volume of an audio amplifier during a telephone conversation. The remote volume control apparatus can be manually reset to restore the volume of the audio amplifier to the original level after the telephone conversation has terminated.

3,446,977

STRESS INSPECTION APPARATUS FOR TRANSPARENT SHEET MATERIAL

Sydney Bateson, Oshawa, Ontario, Canada, assignor to PPG Industries, Inc., Pittsburgh, Pa., a corporation of Pennsylvania

Filed Dec. 27, 1965, Ser. No. 516,405
Int. Cl. G01n *21/30*
U.S. Cl. 250—219 **6 Claims**



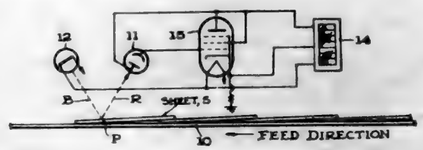
Apparatus for detecting and recording stresses and their distribution in a sheet of transparent material. The instrument consists basically of a Senarmont compensator in which the analyzer element is automatically rotated to the balanced position by means of a servo system. In order that the analyzer may rotate in a direction determined by the change of retardation, due to a change from compressive to tensile stress or vice versa, the system provides for a reversal of phase in the signal applied to the servomotor thereby to effect a change in the direction in which the analyzer is driven. This phase reversal is provided by superimposing an auxiliary signal of equal frequency but opposite phase on a fluctuating error signal derived from a light sensitive device which receives light passing through the analyzer. Since the servomotor is capable of responding to a phase shift the direction of rotation of the analyzer is thereby determined by whether the error signal increases or decreases in amplitude relative to the amplitude of the auxiliary signal.

3,446,978

DETECTION OF ANOMALOUS CONDITIONS IN THE HANDLING OF SHEET MATERIAL COMPRISING SEQUENTIALLY PRINTING AND COUNTING A PREDETERMINED NUMBER OF LINES ON EACH SHEET

William B. Leavens, Jr., West Orange, N.J. (% Wilkata Codes, Inc., 300 Hoyt St., Kearney, N.J. 07032)

Filed July 27, 1966, Ser. No. 568,226
Int. Cl. G01n *21/30;* **H01j** *39/12;* **B41f** *5/16*
U.S. Cl. 250—219 **11 Claims**



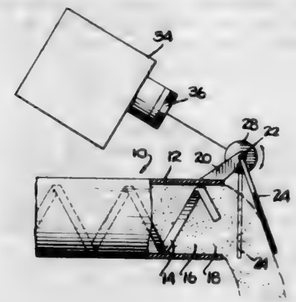
1. The method of marking and inspecting sheets which comprises placing a predetermined number of spaced lines on the sheet with each pass of the sheet through a printing press, electronically inspecting by reflected light said spaced lines on a subsequent pass of the sheet, transmitting signals representative of the electronic inspection to a counting device, and resetting the counting device for a subsequent sheet after the completion of the inspection of each respective sheet.

3,446,979

FLOW INDICATOR FOR DIVIDED SOLID MATERIAL PROVIDED WITH INDICIA RESPONSIVE PHOTOELECTRIC MEANS

Ronald J. Ricciardi, 193 MacArthur Ave., Garfield, N.J. 07026

Filed July 20, 1965, Ser. No. 473,392
Int. Cl. G01d *5/34;* **H01j** *39/12;* **G08b** *21/00*
U.S. Cl. 250—231 **4 Claims**



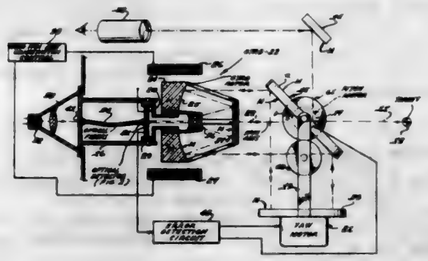
A flow indicator for divided solid material including a container having an outlet, and a paddle mounted in the outlet in the path of the flowing material. The paddle has indicia thereon which moves responsive to the flow of material, and a photoelectric cell is focused on this indicia. A control circuit is connected to the photoelectric cell, and hence transmits a signal responsive to the flow of material.

3,446,980

STABILIZED SIGHT SYSTEM EMPLOYING AUTOCOLLIMATION OF GYRO-STABILIZED LIGHT BEAM TO CORRECT YAW AND PITCH ORIENTATION OF COUPLED SIGHT LINE AND SERVO SYSTEM MIRRORS

Rudolf H. Meier, Tustin, Calif., assignor to Philco-Ford Corporation, Philadelphia, Pa., a corporation of Delaware

Filed Sept. 22, 1965, Ser. No. 489,146
Int. Cl. G01d *5/34;* **H01j** *39/12*
U.S. Cl. 250—231 **2 Claims**



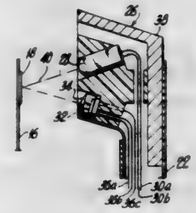
Stabilized sight system employing a stabilized light beam which is reflected from an autocollimating mirror and returned to a photosensitive detector. When the orientation of the system changes, the beam is displaced from the center of the detector, producing an error signal which directs servos to rotate a second mirror to return the beam to the center of the detector. The opposite side of the second mirror is in the path of the line of sight so that the line of sight will be simultaneously retained to its original position.

3,446,981

PHOTOELECTRIC SYSTEM FOR DETECTING METER POINTER POSITION

Abram Ackerman, New Hyde Park, and Kurt H. Schneider, Maspeth, N.Y., assignors to A & M Instrument, Inc., Great Neck, N.Y., a corporation of New York

Filed Mar. 21, 1966, Ser. No. 535,934
Int. Cl. G01d *5/34*
U.S. Cl. 250—231 **1 Claim**



A device is described for detacting a selected position of the pointer of an electric meter wherein a pointer is mounted rotatably about an axis at a first pivot, and an indicator which is mounted at a pivot coaxial with the pointer pivot is provided, having at one end thereof a hood which encloses a source of light and a light-sensitive silicon-controlled rectifier. A reflecting surface is provide on the pointer which optically interconnects the light source to the light-sensitive rectifier when the pointer reaches an angular position corresponding to the angular position of the indicator. The rectifier is incorporated in a circuit which provides, across a resistive load, a voltage representative of the conduction of the silicon-controlled rectifier in response to reflected light from the reflection surface on the pointer and incident on the light-sensitive surface of the rectifier. Several circuits are disclosed.

3,446,982

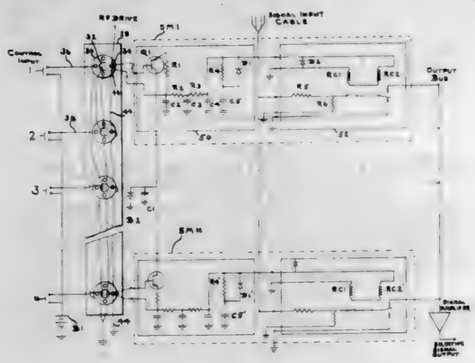
SIGNAL SWITCHING CIRCUIT

Edward Camp Dowling, Harrisburg, Raymond Melvin Carlisle, Linglestown, and James Alexander Fraunfelder, North Wales, Pa., assignors to AMP Incorporated, Harrisburg, Pa.

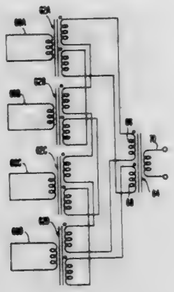
Filed Mar. 24, 1966, Ser. No. 537,090
Int. Cl. H02j *1/10*
U.S. Cl. 307—29 **10 Claims**

A signal switching circuit is disclosed which features a series of switches selectively operable to connect a given input signal to an output lead responsive to the operation of a control element connected to drive each switch. The various control elements are connected so that the selective operation of a given control element automatically and instantly clears all other control elements to instantly terminate drive to any previously selected switch. An energy storage circuit is provided for each switch which maintains the switch in closure after its associated control element has been cleared, so as to provide a controlled overlap of signal sources connected to the output lead. The connection between a control element and a switch includes an impedance which steers initial driving current to the switch coils and prevents the storage

circuit from detracting from the rate of switch closure. Memory cores are used for the control elements to provide high switching speeds and switching program retention in the event of power failure.



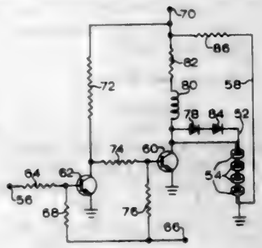
3,446,983
COUPLING DEVICE
Frederic C. Doughty, Tredyffrin Township, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Feb. 14, 1964, Ser. No. 344,877
Int. Cl. H01f *27/24, 27/28*
U.S. Cl. 307—83 **7 Claims**



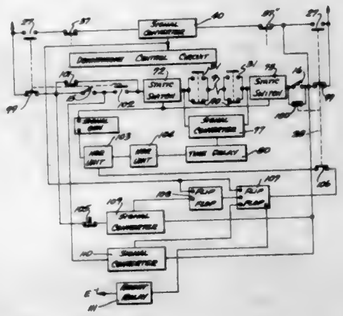
A system for coupling a plurality of individual electrical or electronic units to a single utility device, the plurality of units being connected in parallel while at the same time electronically connecting the same plurality of units in series with an input or output circuit the system having a plurality of transformers each having its primary winding electrically connected to a different output conducting means and each transformer have two secondary windings each winding electrically connected in series with a secondary winding of other transformers and the output circuit.

3,446,984
CURRENT DRIVER
Narendra M. Shukla, Detroit, Mich., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed July 16, 1965, Ser. No. 472,425
Int. Cl. H03k *17/30*
U.S. Cl. 307—88 **7 Claims**

A current driver circuit for providing a high energy current pulse to the set windings of a plurality of ferromagnetic cores. The high energy current pulse is due to the discharge of the large inductance of an inductor through the smaller inductance of the set windings. A low power transistor interrupts the flow of charging current through the inductor and gating means, having a predetermined voltage threshold, electrically connects the set windings of the ferromagnetic cores to the inductor thereby providing the discharge path for said inductor. The transistor additionally controls a separate low-current path through the reset windings of the ferromagnetic cores maintaining the cores in a reset condition during the charging time of the inductor.



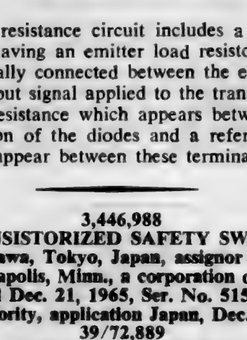
3,446,985
ELECTRICAL CONTROL CIRCUIT FOR CYCLICALLY OPERATING APPARATUS
Benjamin H. Carlisle, South Euclid, Kenneth L. Daggs, Euclid, and John D. Sauter, Lyndhurst, Ohio, assignors to The Clark Controller Company, Cleveland, Ohio, a corporation of Ohio
Filed Oct. 31, 1966, Ser. No. 590,637
Int. Cl. H02b *1/24*
U.S. Cl. 307—113 **30 Claims**



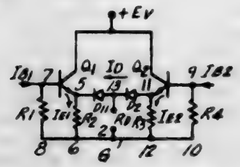
This disclosure relates to a press control having a solid state anti-repeat control incorporating push button switches and press actuated limit switches. The control circuit includes a split loop with a pair of secondaries connected to push button switches in the two sides of the loop. Diode bridges each having a silicon controlled rectifier are connected to the press winding and between the push button switches and the secondaries. An off-return memory unit in combination with "Nor" circuits provides a trigger to the controlled rectifiers during the downstroke. The memory unit is reset by the press actuate switches.

3,446,986
FLOW INDICATOR AND CONTROL SYSTEM
John B. Cox, Midland, Tex., assignor to Mobil Oil Corporation, a corporation of New York
Continuation-in-part of abandoned application Ser. No. 410,975, Nov. 13, 1964. This application Nov. 28, 1966, Ser. No. 604,104
Int. Cl. H02b *1/24;* **G01f** *1/00*
U.S. Cl. 307—118 **18 Claims**

This specification discloses a positive displacement type fluid flow indicator which comprises a chamber having inlet and outlet openings, a piston slidably disposed within the chamber, and means for producing a signal when the piston is displaced upwardly in the chamber in response to fluid flow through the indicator. The piston includes passageway means therein providing for fluid flow between the working and passive sides of the piston whereby accumulation of deposits within the chamber is alleviated. Also disclosed is a control system which generates a control function such as an alarm signal in response to the frequency of signals from a flow indicator falling outside of a specified range.



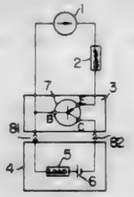
3,446,987
VARIABLE RESISTANCE CIRCUIT
Haruo Ito, Loveland, Colo., assignor to Yokogawa-Hewlett-Packard, Ltd., Tokyo, Japan, a corporation of Japan
Filed Nov. 4, 1966, Ser. No. 592,029
Claims priority, application Japan, Nov. 15, 1965, 40/70,066
Int. Cl. H03k *17/74*
U.S. Cl. 307—200 **2 Claims**



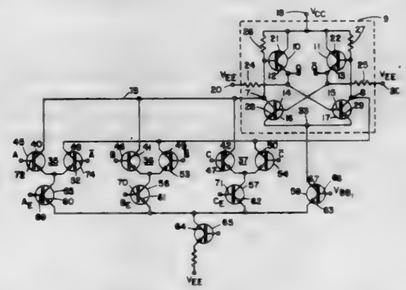
A variable resistance circuit includes a pair of transistors, each having an emitter load resistor, and a pair of diodes serially connected between the emitters of the transistors. Input signal applied to the transistor controls the variable resistance which appears between the common connection of the diodes and a reference terminal but does not appear between these terminals.

3,446,988
TRANSISTORIZED SAFETY SWITCH
Shinichiro Ogawa, Tokyo, Japan, assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Dec. 21, 1965, Ser. No. 515,367
Claims priority, application Japan, Dec. 25, 1964, 39/72,889
Int. Cl. H02h *7/20*
U.S. Cl. 307—202 **2 Claims**

Electrical continuity between the load terminals of a series measuring and/or control circuit is maintained at all times by permanently connecting the emitter-base path of a transistor between these terminals, and by detachably connecting the load and a bias voltage source in series across the collector-base path of the transistor. The base-emitter path of a second transistor may be included in series with the load, with the collector of this transistor connected to the emitter of the first transistor.



3,446,989
MULTIPLE LEVEL LOGIC CIRCUITRY
Frihoff Grant Allen, Fort Leonard Wood, Mo., and Walter C. Seelbach, Scottsdale, Ariz., assignors to Motorola, Inc., Chicago, Ill., a corporation of Illinois
Filed Aug. 15, 1966, Ser. No. 572,587
Int. Cl. H03k *19/08*
U.S. Cl. 307—208 **7 Claims**

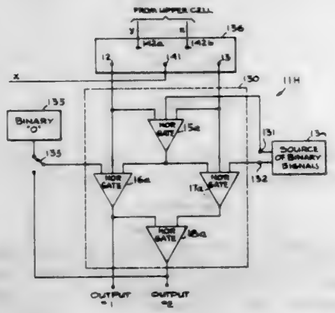


Disclosed are multiple level logic circuits, each including a bistable element having first and second conductive states. The bistable element is adaptive to receive logic signals at first and second input terminals thereof and these logic signals control the conductive state of the bistable element. A plurality of transistor pairs or sets are connected to the first and second input terminals respectively of the bistable element, and the transistor pairs or sets are connected to one or more different levels of enabling and clocking transistors. These enabling or clocking transistors must be biased conductive before the succeeding or next higher level of transistor sets can be biased to conduction. One or more reference transistors is differentially coupled to the enabling and/or clocking transistors, and the enabling and clocking transistors are differentially switched against one or more reference transistors to control the conductive state of the bistable element in accordance with the specific connection of and logic signal input to the above-named transistors. The connection of the above-named transistors to each other and to the bistable element may be widely varied to thus impart substantial logic flexibility to the circuits.

3,446,990
CONTROLLABLE LOGIC CIRCUITS EMPLOYING FUNCTIONALLY IDENTICAL GATES
Jacob Goldberg, Palo Alto, Calif., assignor to Stanford Research Institute, Menlo Park, Calif., a corporation of California
Filed Dec. 10, 1965, Ser. No. 513,005
Int. Cl. H03k *19/34*
U.S. Cl. 307—215 **10 Claims**

Cells for use in a cellular logic array are disclosed. One cell includes four two-input NOR gates, intercon-

nected to provide a binary output which is a function of two inputs to the cell and the controlled connection between two of the gates. In another cell, four NOR gates are interconnected to response to enabling and disabling signals to provide any one of up to seven different out-

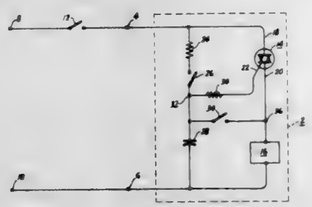


puts, which are a function of at least one input signal and the disabling and enabling signals supplied thereto. The input and output terminals of each cell are arranged in two parallel coplanar lines to form a patch panel.

3,446,991
ALTERNATING CURRENT SWITCH

Edward K. Howell, Skaneateles, N.Y., assignor to General Electric Company, a corporation of New York

Filed Mar. 23, 1966, Ser. No. 536,886
Int. Cl. H03k *17/74*
U.S. Cl. 307—252 **28 Claims**



1. A control means for energizing a load from an A.C. supply comprising:

(a) a semiconductive bidirectional device having two main current carrying terminals and at least one additional gate treminal, said device normally exhibiting a high impedance characteristic between said two main terminals and exhibiting a low impedance characteristic between said two main terminals in response to application of a control signal having at least a predetermined amplitude to said gate terminal, a first of said main terminals and a first terminal of the load connected to a first junction point, a second of said main terminals and a second terminal of the load connected to the A.C. supply,

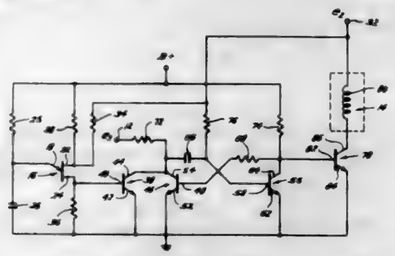
(b) a control circuit comprising an energy storage means having at least two terminals and a variable impedance means having at least two terminals, a first terminal of said energy storage means and a first terminal of said variable impedance means connected to a second junction point, a second terminal of said energy storage means connected to said second terminal of said load, and a second terminal of said variable impedance means being connected to said second main terminal, and

(c) a gate circuit connecting said second junction point to said gate terminal, whereby when the impedance of said variable impedance means is reduced below a predetermined level, the voltage appearing across said energy storage means, which is applied to said gate through said gate circuit exceeds the predetermined amplitude so as to cause said device to exhibit a low impedance characteristic, said energy storage means being effective in response to a subsequent increase of the impedance of said variable impedance means above said predetermined level to thereafter supply gate signals in excess of said predetermined amplitude derived from the voltage developed across the load to said gate terminal through said gate circuit, whereby said device thereafter exhibits a low impedance characteristic so that the load is energized by the A.C. supply through said device.

3,446,992
BUS VOLTAGE COMPENSATION CIRCUIT FOR CONTROLLING DIRECT CURRENT MOTOR

James E. Webb, Administrator of the National Aeronautics and Space Administration with respect to an invention of Walter A. Barniskis and John W. Fink, both of Minneapolis, Minn.

Filed Dec. 27, 1966, Ser. No. 605,102
Int. Cl. H03k *1/16, 5/159*
U.S. Cl. 307—265 **3 Claims**



A control circuit for automatically compensating for fluctuations in voltage supply to a D.C. motor for which the on-time is made to vary with an input signal. The control circuit comprises a relaxation oscillator formed of a unijunction transistor, the output pulses of which are fed through an isolation transistor to a monostable multivibrator which controls a switching transistor in series with the motor winding and motor voltage source. The oscillator output pulses control the frequency of periods during which current flows through the motor winding and a source of input signals also fed to the monostable multivibrator varies the period during which current flows through the winding. To compensate for variations in the motor winding voltage, a feedback circuit is coupled from the motor voltage source to the unijunction transistor and the motor voltage source is connected to the multivibrator at the input signal terminal. If the motor voltage source varies, the frequency and duration of the operational period of the motor winding is varied to maintain a constant motor current-time characteristic.

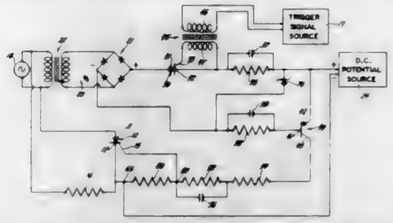
3,446,993
CIRCUIT FOR PRODUCING FAST-RISE TIME PULSES

Donald E. Graham, Trotwood, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Sept. 20, 1966, Ser. No. 580,708
Int. Cl. H03k *5/12*
U.S. Cl. 307—268 **7 Claims**

A circuit for producing fast rise power silicon controlled rectifier gating pulses. The emitter-collector electrodes of a type PNP transistor and three resistors are connected in series across a direct current potential source.

The anode-cathode electrodes of a pilot silicon controlled rectifier and the emitter-base electrodes of the type PNP transistor are connected in series across a separate source of pulsating direct current potential. Upon the triggering of the pilot silicon controlled rectifier conductive by a trigger signal transformer coupled across the gate-cathode

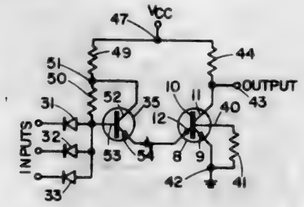


electrodes thereof to complete the emitter-base circuit for the type PNP transistor, this device conducts through the emitter-collector electrodes thereof and the potential drop appearing across one of the series resistors is applied as a gating pulse across the gate-cathode electrodes of the power silicon controlled rectifier.

3,446,994
HIGH THRESHOLD DIODE TRANSISTOR LOGIC CIRCUITRY

Ronald L. Treadway, Scottsdale, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed Sept. 8, 1966, Ser. No. 577,870
Int. Cl. H03k *19/08*
U.S. Cl. 307—299 **11 Claims**



A high threshold, diode-transistor logic circuit including a multi-emitter output semiconductor device such as a multi-emitter transistor. The output device is driven by an input semiconductor device and input gate circuitry which is adapted to receive binary logic signals at a level sufficiently high to reverse breakdown one base emitter junction of the output device. A resistive bias circuit is connected between the input semiconductor device and a voltage supply terminal for biasing the input semiconductor device nonconducting in the absence of logic signals above a predetermined magnitude concurrently applied to the input gate circuitry.

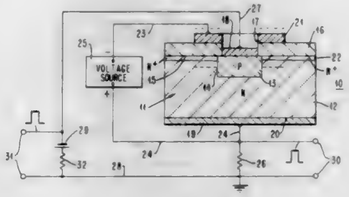
In another embodiment of the invention, the multi-emitter logic circuitry is connected in a J–K flip-flop in a symmetrical circuit configuration comprising two identical cross coupled logic gates of the type described.

3,446,995
SEMICONDUCTOR CIRCUITS, DEVICES AND METHODS OF IMPROVING ELECTRICAL CHARACTERISTICS OF LATTER

Paul P. Castrucci, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed May 27, 1964, Ser. No. 370,468
Int. Cl. H03k *3/26, 19/08, 23/08*
U.S. Cl. 307—304 **3 Claims**

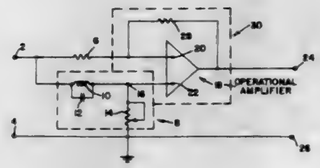
A semiconductor device having a PN junction extending inwardly from a surface thereof. A layer of insulating material covers said surface, and this layer carries an area-type electrode which is disposed above said junction. Biasing means, including a load impedance, are connected across said junction via ohmic contacts to the P and N regions forming said junction; these biasing means provide a reverse-bias voltage across said junction greater than the pseudo breakdown voltage. Second biasing means pole the area-type electrode negatively, with respect to one of said regions, to control negative charge carrier accumulation at the surface. Control means reduce the negative biasing to render the device conductive.



3,446,996
DELAY EQUALIZER CIRCUIT WHEREIN THE OUTPUT SIGNAL PHASE IS DEPENDENT UPON THE INPUT SIGNAL FREQUENCY

Jerome E. Toffler, Anaheim, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Apr. 21, 1966, Ser. No. 545,795
Int. Cl. H03k *5/20*
U.S. Cl. 307—233 **3 Claims**



In the disclosed delay equalizer circuit, input signals are applied via a resistive path to an inverting input terminal of an operational amplifier and are applied via a frequency sensitive path including a band-stop filter to a noninverting input terminal of the operational amplifier. The operational amplifier output voltage has substantially the same amplitude as the circuit input voltage but varies in phase relative to the input voltage as a function of frequency depending upon the relative voltages passed through the resistive and the frequency sensitive paths.

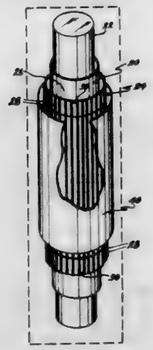
3,446,997
TRIODE THERMIONIC ENERGY CONVERTER

Alex Vary, North Olmsted, Ohio, assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

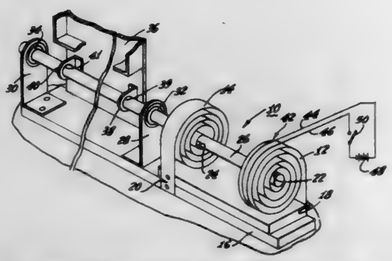
Filed Oct. 22, 1965, Ser. No. 502,746
Int. Cl. H02n *3/00, 7/00*
U.S. Cl. 310—4 **5 Claims**

A vacuum thermionic converter having an electron emitting electrode disposed adjacent to a collector electrode having openings which allow electrons to pass therethrough and impinge on a biasor electrode which is directly connected to the emitter electrode causing a short circuit condition wherein the converter operating point is located on the high current portion of the converter's output characteristic curve. The collector bleeds off some

of the electron flow and diverts it to a variable load impedance connected between the collector electrode and the emitter electrode thereby energizing the load impedance. The electrodes may be flat or cylindrical and may be disposed in parallel or coaxial relationship with respect to one another.



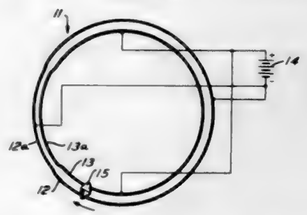
3,446,998
BIMETALLIC POWER CONTROLLED ACTUATOR
James E. Webb, Administrator of the National Aeronautics and Space Administration with respect to an invention of Franklin L. Murphy, Los Angeles, Calif.
Filed Feb. 17, 1967, Ser. No. 617,779
Int. Cl. H02n 7/00; F03g 7/06
U.S. Cl. 310—4 **2 Claims**



An electro-mechanical actuator apparatus having oppositely wound, convoluted, juxtaposed, opposing spring members. One of the opposing spring members is a bimetallic spring member having an electrical resistance heating element attached to its outer surface. Upon being electrically energized, the resistance heating element transfers its heat to the bimetallic actuator spring causing the spring to elongate, and thus exert a force which is opposite to, and greater than, the force exerted by the opposing spring member. A structural member retained by the actuator apparatus is thereby moved in this manner from a first to a second predetermined position, and in a predetermined manner, in accordance with control signals transmitted from a remote control station.

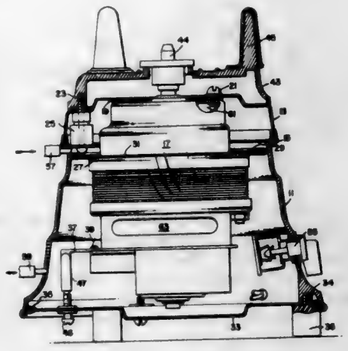
3,446,999
MAGNETIC ROLLING DEVICE
Athelstan F. Spilhaus, Mound, Minn., assignor to Experimentory Corp., Minneapolis, Minn., a corporation of Minnesota
Filed Mar. 1, 1966, Ser. No. 530,991
Int. Cl. H02k 41/06
U.S. Cl. 310—13 **7 Claims**

A rolling device has one wheel with a conductive surface which continuously contacts an electrically energized magnetizable rail. A second wheel has a segmented conductive surface which contacts a second electrically energized rail. A plurality of electromagnets are connected



between the two wheels which are successively energized as the device rolls along so that they are successively attracted toward the rails thereby continuing the movement of the device.

3,447,000
EXPLOSION-PROOF BLENDER MOTOR AND HOUSING
William F. Dugan, Stamford, and Roy L. Swanke, Newington, Conn., assignors to Dynamics Corporation of America, New York, N.Y., a corporation of New York
Filed Apr. 24, 1967, Ser. No. 633,218
Int. Cl. H02k 7/14
U.S. Cl. 310—50 **9 Claims**

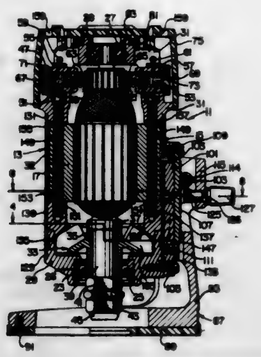


An electrical blender having a motor sealed therein in an airtight condition with means for circulating air under pressure through the housing and past the motor. A switch is provided which is responsive to the pressure within the housing so as to stop the motor if the air supply fails.

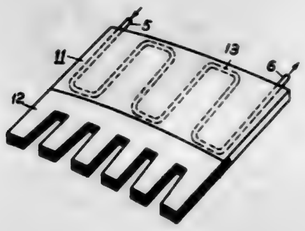
3,447,001
VERTICALLY ADJUSTABLE PORTABLE HAND-TOOL WITH ELECTRIC MOTOR AND HOUSING ASSEMBLY
Hynek J. Zelik, Baltimore, Md., assignor to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland
Filed May 22, 1967, Ser. No. 640,029
Int. Cl. H02k 7/14
U.S. Cl. 310—50 **15 Claims**

A portable router comprising an electric motor with a rotatable output shaft coaxially connected to a tool bit through a collet secured to the shaft. The motor is encased within a housing and is cooled by a fan which rotates

with the motor shaft. A flat base is secured to the housing to support the router upon a workpiece surface and the base and housing are adjustable longitudinally of the motor shaft to selectively position the tool bit for the desired depth of cut. A detachable cap covers the end of the housing remote from the tool bit and base and traps a power line cord and a control switch lever in place on the housing.



3,447,002
ROTATING ELECTRICAL MACHINE WITH LIQUID-COOLED LAMINATED STATOR CORE
Carl Rönnevig, Vasteras, Sweden, assignor to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a Swedish corporation
Filed Feb. 28, 1966, Ser. No. 530,688
Claims priority, application Sweden, Mar. 17, 1965, 3,437/65
Int. Cl. H02k 9/20
U.S. Cl. 310—54 **7 Claims**

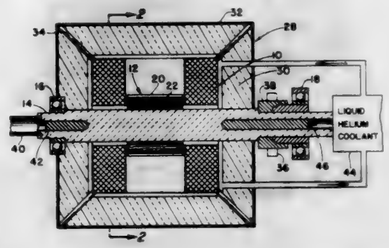


A stator core is provided with a plurality of annular grooves, in which are located heat-conducting bodies arranged tangentially one after the other in each groove, with cooling tubes embedded in the cooling bodies

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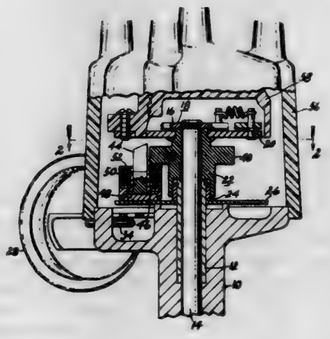
3,447,003
GENERATOR FOR A SPACE POWER SYSTEM
Dale W. Cooper, Fairview Park, and Perry W. Kuhns, Parkview, Ohio, assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Mar. 2, 1967, Ser. No. 621,098
Int. Cl. H02k 9/19
U.S. Cl. 310—54 **10 Claims**

A space power generating system having a rotor in the form of a slotted armature of electrically insulating material. Each slot is filled with small diameter copper wires. Rotation of the armature moves these wires



through the field of a fixed superconducting magnet which forms the stator.

3,447,004
BREAKERLESS IGNITION CONTROL DISTRIBUTOR
John H. Falge, Anderson, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 11, 1966, Ser. No. 533,577
Int. Cl. H02k 11/00
U.S. Cl. 310—70 **3 Claims**

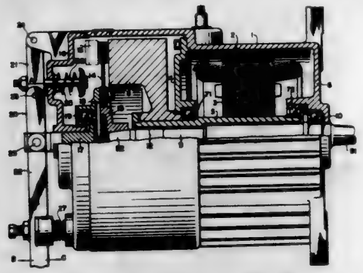


This invention relates to a voltage pulse generator for providing a timing voltage to control the operation of a semiconductor ignition system for an internal combustion engine. The voltage pulse generator includes a permanent magnet connected with a magnetic circuit that is coupled to an output coil. The timing voltage is induced in the output coil in synchronism with rotation of a rotor that is driven by an engine driven shaft. The rotor has a generally saw-tooth configuration providing a variable air-gap in the magnetic circuit which provides flux changes in the magnetic circuit that cause opposite polarity voltage pulses to be induced in the output coil of unequal amplitude.

3,447,005
MOTOR CLUTCH BRAKE DEVICE
Masahiro Yokoyama, Nagoya, Japan, assignor to Mitsubishi Denki Kabushiki Kaisha, Tokyo, Japan
Filed July 14, 1966, Ser. No. 565,243
Claims priority, application Japan, July 30, 1965, 40/46,271
Int. Cl. H02k 7/10, 7/02, 7/112
U.S. Cl. 310—78 **4 Claims**

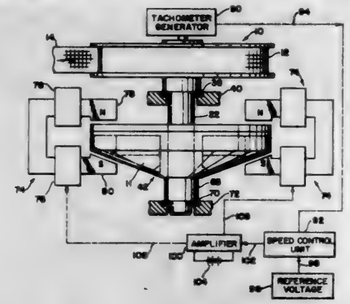
A motor clutch brake device having clutch means oper-

ated by an axially operated rod always applying a fixed



control pressure kept at a fixed pressure value by operating levers connected in a toggle configuration.

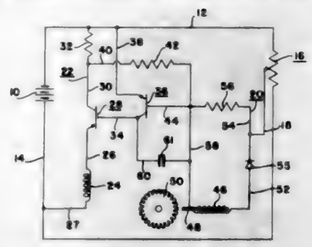
3,447,006
ELECTRODYNAMIC BRAKE OF MAGNETIC FLUID TYPE
Robert Lee Bair, Ashland, N.J., assignor to E. W. Bliss Co., Canton, Ohio, a corporation of Ohio
Filed Sept. 28, 1967, Ser. No. 671,498
Int. Cl. H02k *49/00;* **H02p** *15/00*
U.S. Cl. 310—93 **10 Claims**



A brake of the electrodynamic type which is especially suitable for use in aircraft arresting systems since it provides a brake having a very low moment of inertia upon start of rotation but capable of providing a large controlled braking torque after a short period of rotation. The disclosed brake includes a metallic annular-shaped rotor forming a closed chamber. The rotor is mounted for rotation with a central shaft which extends axially through the rotor and is connected to the member to be braked. The chamber contains mercury and is arranged so that the mercury collects adjacent the rotor axis when the rotor is at rest; however, when the rotor is rotated the mercury flows radially outwardly under the influence of centrifugal force to the outer periphery of the rotor. Program-controlled electromagnets spaced adjacent the outer periphery of the rotor provide a variable magnetic field through which the rotor and mercury pass during rotation to generate eddy currents which provide an electromagnetic braking torque.

3,447,007
TRANSISTORIZED ELECTRICAL CONTROL CIRCUIT
Homer W. Deaton, Centerville, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 2, 1965, Ser. No. 511,099
Int. Cl. H02p *5/16*
U.S. Cl. 310—95 **8 Claims**

In preferred form, a current controlling, transistorized, electrical control circuit including a tachometer generator producing a pulsating control signal that is connected to the base of a control transistor. A D.C. reference voltage also is connected to the base of the control transistor. The generated voltage and D.C. voltage control conductivity of the control transistor and a coupled power transistor for varying current through an energized load. A voltage divider is connected between the base of the con-



trol transistor and the collector of the power transistor for improving responsiveness of the coupled transistors. A capacitor is connected across the collector and base of the control transistor to eliminate voltage peaks in the tachometer generated signal without delaying the responsiveness of the coupled transistor pair in response to changes in the generated tachometer voltage.

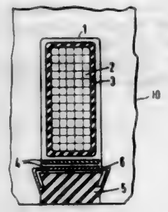
3,447,008
HIGH STARTING TORQUE INDUCTOR MOTOR
Edward G. Regner, Winsted, and Robert S. Lundin, Thomaston, Conn., assignors to General Time Corporation, Stamford, Conn., a corporation of Delaware
Filed Aug. 25, 1967, Ser. No. 663,397
Int. Cl. H02k *19/04, 21/04*
U.S. Cl. 310—164 **17 Claims**



A single phase stator inductor motor having a shaded pole for each pair of main poles. The main poles of one polarity are shifted somewhat from the conventional 180 electrical degree position, and shaded poles are inserted in the resulting wider gaps between adjacent main poles. The degree of shading, pole spacing, and pole dimensions are correlated to give a starting torque approaching the running torque, with positive starting.

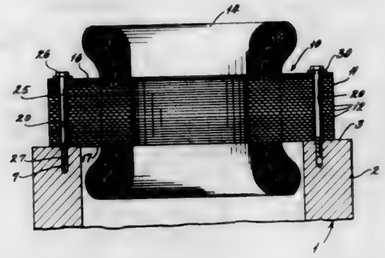
3,447,009
MAGNETIZABLE SLOT CLOSURE FOR ELECTRICAL MACHINES
Heinz Keuth, Alfred Heyer, and Emil Gegner, Nuremberg, Germany, assignors to Siemens Aktiengesellschaft, a corporation of Germany
Filed Mar. 15, 1965, Ser. No. 439,728
Claims priority, application Germany, Mar. 13, 1964, S 89,996
Int. Cl. H02k *3/48*
U.S. Cl. 310—214 **7 Claims**

Electric machine structure having slots and winding conductors substantially occupying the slots with the exception of slot space remaining adjacent the slot openings includes a magnetizable slot closure consisting substantially of a plastic mixture of hardenable synthetic resin with iron powder, the closure being formed and hardened in the remaining slot space and filling the space so that



it is integral with the electric machine structure. Method of producing the foregoing slot closure includes filling a spackling compound, formed substantially of the hardenable synthetic resin with iron powder, and then hardening the compound within the slot space.

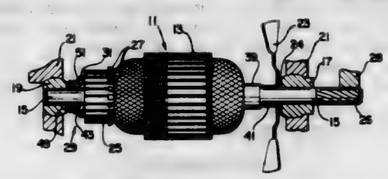
3,447,010
HERMETIC MOTOR STATOR WITH INSULATED MOUNTING BOLTS
Robert M. Vreeland, St. Louis County, Mo., assignor to Emerson Electric Co., St. Louis, Mo., a corporation of Missouri
Filed June 8, 1966, Ser. No. 556,140
Int. Cl. H02k *1/18*
U.S. Cl. 310—217 **1 Claim**



In an electric hermetic motor assembly in which a wound stator with a core of stacked laminations is bolted in face-to-face relation to an electrically conductive base by means of a plurality of electrically conductive bolts extending entirely through the stack of laminations and into the base, integrious insulating means are provide between the bolts and at least one of the stator core and base for electrically insulating the bolts therefrom.

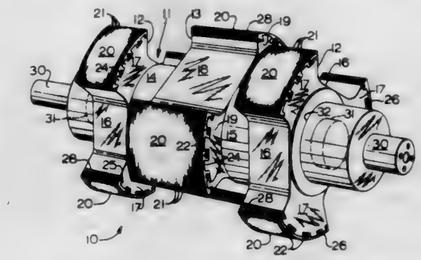
3,447,011
ARMATURE CONSTRUCTION FOR DOUBLE-INSULATED TOOL
Carl J. Amrein, Baltimore, and Charles V. Carman, Fallston, Md., assignors to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland
Filed Oct. 31, 1966, Ser. No. 590,626
Int. Cl. H02k *3/30*
U.S. Cl. 310—235 **18 Claims**

A universal electric motor armature including armature windings and a commutator supported upon but insulated from an armature shaft. Bearings support the shaft



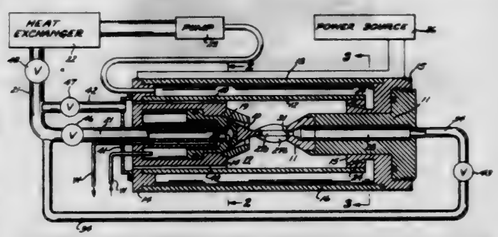
at its ends and insulating means separates the commutator and the adjacent bearings.

3,447,012
ROTOR CONSTRUCTION
Paul J. Staebler, Peoria, James L. Crawford, Chillicothe, Charles N. Fangman, Peoria, and Robert R. McCutchen, East Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Apr. 10, 1968, Ser. No. 720,281
Int. Cl. H02k *1/22, 1/28*
U.S. Cl. 310—262 **2 Claims**



In a high speed alternator, an improved rotor construction having lower eddy current losses than other solid core rotor construction includes a plurality of thin laminated pole caps interlocked on the tips of the poles or lobes milled in the rotor. Supporting this rotor on nonmagnetic stub shafts further improve the design, as does the addition of circular plates contiguous to the poles or lobes to reduce air drag losses; i.e., windage losses.

3,447,013
RADIATION SOURCE AND METHOD
Delbert G. Van Ornum, Newport Beach, and Ronald E. Sheets, Westminster, Calif., assignors to Giannini Scientific Corporation, Amityville, N.Y., a corporation of Delaware
Filed June 20, 1966, Ser. No. 558,904
Int. Cl. H01j *61/52*
U.S. Cl. 313—12 **26 Claims**



A gas-vortex stabilized radiation source and method in which a major amount of gas is drained from the peripheral regions of the arc chamber in order to maintain the window relatively cool, only a minor amount of the

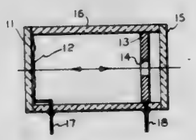
gas draining through the central or axial region of the chamber. In accordance with another major aspect of the method and apparatus, the operation is readily changed between that causing a relatively constricted discharge (producing radiation high in the ultraviolet), and that causing a relatively unconstricted discharge (producing radiation relatively high in the infrared), by manipulating a valve means adapted to change the drainage of gas from the discharge chamber.

3,447,014

INTERFEROMETER COMPRISING PHOTOCATHODE OF FRACTIONAL LIGHT WAVELENGTH THICKNESS IN ENVELOPE HAVING OPTICALLY FLAT WINDOWS

Robert J. Jordan, Lexington Park, Md., assignor of one-third to Robert B. Davis, Hollywood, Md., and one-third to Ronald N. Phillips, Leonardtown, Md.

Filed June 27, 1966, Ser. No. 560,703
Int. Cl. H01j *39/16*
U.S. Cl. 313—94 **5 Claims**



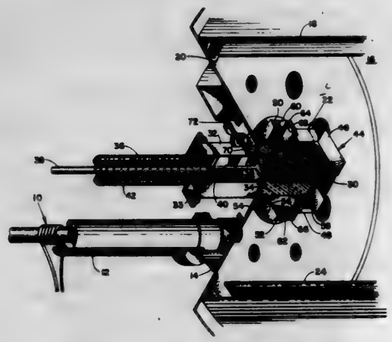
An optical interferometer for relating external coherent light beams comprised of an evacuated envelope having opposed transparent windows, a semitransparent cathode, and an anode; and converting a two dimensional light interference pattern of said beams on said cathode into electrical signals.

3,447,015

ION THRUSTOR CATHODE

Paul D. Reader, Rockville, Md., and Harold R. Kaufman, Berea, and William R. Kerslake, Middleburg Heights, Ohio, assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Feb. 24, 1967, Ser. No. 619,521
Int. Cl. H01j *17/26, 61/28, 5/16*
U.S. Cl. 313—231 **12 Claims**



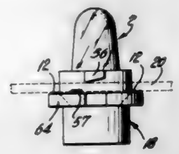
A cathode for an electron bombardment ion thrustor in which a block of barium carbonate contacts a heated tungsten screen. The barium carbonate is reduced when heated to activate the electron emitting surface thereby lowering the temperature at which electrons are emitted. A spring-loaded piston presses the blocks against the screen so that the activator coating is replenished as the electron emitting surface is eroded by ions.

3,447,016

REAR LOADING PANEL LAMPS AND A METHOD OF BASING THE SAME

Alan K. Rycroft, Edison, N.J., assignor, by mesne assignments, to Wagner Electric Corporation, South Bend, Ind., a corporation of Delaware

Filed Nov. 2, 1966, Ser. No. 591,467
Int. Cl. H01j *5/62*
U.S. Cl. 313—317 **3 Claims**



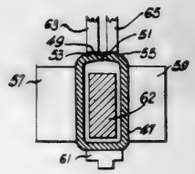
A permanently-based rear-loading panel lamp is formed to enclose all lead wires, exposing only the electrical contact which press against the circuit contact points on the circuit board in which the lamp is mounted. The portion of the lamp enclosed by the base is abutted over its entire surface by the molded base to form a rigid lamp assembly.

3,447,017

CATHODE SLEEVE STRUCTURE AND FABRICATION PROCESS

Donald Russel Kerstetter, Emporium, Pa., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed Dec. 8, 1966, Ser. No. 600,146
Int. Cl. H01j *19/10, 19/14*
U.S. Cl. 313—356 **4 Claims**



A cathode sleeve structure for electron discharge devices wherein the edges of strip material along the longitudinal axis thereof are butted and secured to one another by a weld.

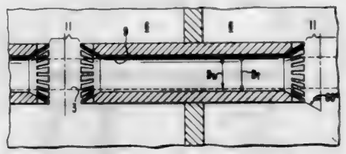
3,447,018

HIGH POWER MULTICAVITY AMPLIFIER HAVING ENLARGED DRIFT TUBE GAP DEFINING PORTIONS TO INHIBIT ELECTRONIC FEEDBACK

Robert C. Schmidt, Woodside, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California

Filed Sept. 16, 1966, Ser. No. 580,118
Int. Cl. H01j *25/10, 25/14*
U.S. Cl. 315—5.29 **3 Claims**

A multicavity klystron amplifier tube is disclosed. The tube includes a plurality of cavity resonators successively arranged along the beam path for electromagnetic interaction with the beam. The cavities are tuned to a fundamental mode of resonance having a frequency below 700 mHz. A plurality of axially aligned drift tubes interconnect successive interaction gaps of the re-entrant cavity resonators. The drift tube tunnels have a characteristic diameter of less than 1.5 radians at the output signal frequency and the gap-defining end portions of the drift tube tunnels are outwardly flared and dimensioned to provide a beam filling factor less than 0.5, whereas the beam filling factor for the preponderance of the remaining portion of the drift tube tunnels is greater than 0.6. In this manner, the beam coupling coefficient is reduced in the interaction gap to prevent reflection of electrons by the strong R.F. fields in the gap, thus avoiding positive electronic feedback while still maintaining normal gain and efficiency for the tube.

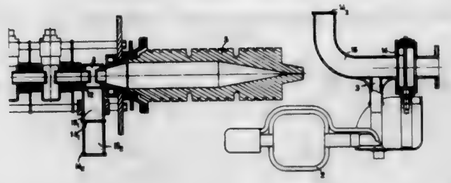


3,447,019

HIGH-FREQUENCY TUBE APPARATUS WITH OUTPUT DIRECT-COUPLED-RESONATOR FILTER

Claude E. Romiguière, Montrouge, France, assignor to Societe Thomson-Varian, Paris, France, a company of France

Filed Jan. 24, 1966, Ser. No. 522,565
Claims priority, application France, Jan. 25, 1965, 3,115
Int. Cl. H01j *25/20*
U.S. Cl. 315—5.43 **2 Claims**



An output coupling network for a microwave electron tube, comprising a plurality of coupled resonators in cascade connection, the first of which is coupled to the output catcher cavity of said tube and the last of which is coupled to an external load, characterized by such a choice of the couplings between the adjacent resonators and of the loaded-Q's of the first and last resonator that said network has a Chebyshev, i.e., equal ripple amplitude vs. frequency transfer characteristic curve, whereby improved coupling conditions in a wider frequency band are obtained.

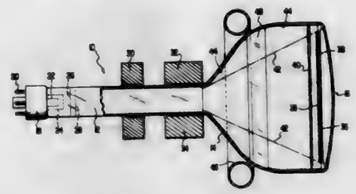
3,447,020

DARK TRACE STORAGE TUBE

Peter Seats, Boonton, N.J., assignor to Thomas Electronics, Inc., Passaic, N.J., a corporation of New Jersey

Filed Apr. 27, 1965, Ser. No. 451,149
Int. Cl. H01j *31/26, 29/12*
U.S. Cl. 315—10 **10 Claims**

The present invention relates to a dark trace storage cathode ray tube and novel screen combination utilizing radiant energy reflecting means for erasure of the screen without reducing the useful life or uniformity of operation of the tube. This dark trace storage tube and novel screen is superior to other prior art tube assemblies and is provided with a novel screen incorporating a simplified black body technique. The scotophoric layer of this invention is not subject to deterioration nor flaking, has long erasure life and in addition the tube asembly is provided with novel means for reflecting heat or radiant energy to impinge upon the screen so as to erase the opacity centers from the screen.

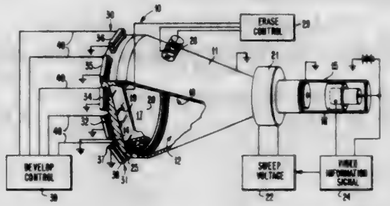


3,447,021

ELECTROSTATIC STORAGE DISPLAY DEVICE

Jan Marcin Engel, San Jose, Calif., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Jan. 13, 1967, Ser. No. 609,152
Int. Cl. H01j *31/26*
U.S. Cl. 315—10 **13 Claims**



An electrostatic storage display device of the type having a dielectric target on which the data image is written by use of an electron beam for selectively distributing an electrostatic charge thereon, with toner particles which adhere to the charged target areas subsequently being cascaded across the target by use of the combination of magnetizable particles mixed in the toner and a magnet utilized to lift the particles and toner across the target to develop the data image.

3,447,022

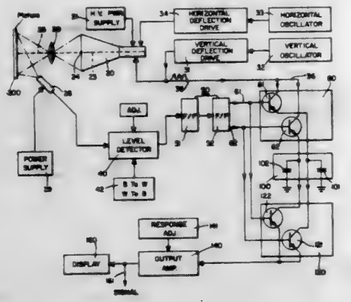
WAVEFORM REPRODUCTION

Robert Starer, Rydal, and John P. Skuria, Warminster, Pa., assignors to Physitech, Incorporated, Willow Grove, Pa., a corporation of Pennsylvania

Filed Sept. 12, 1967, Ser. No. 667,237
Int. Cl. H01j *31/26*
U.S. Cl. 315—10 **9 Claims**

An electrical signal is produced corresponding to a complex curve or waveform available visually on a storage medium such as a photograph. The signal is produced by scanning the visual record or photograph of the curve or waveform with a light beam generated by a cathode ray tube and deflected vertically and horizontally. The change in reflected light which occurs as the scanning

beam of light crosses the waveform is sensed by a photosensitive device, preferably a photo-multiplier, and a determination is made as to what points in the vertical (for example) deflection cycle the changes in reflected light



occur. This determination provides an electrical signal which is representative of the curve or waveform being scanned. The electrical signal thus produced may be displayed as a visual reproduction of the original curve or waveform.

3,447,023

ELECTRON TUBE FOR BOTH TRANSMISSION AND RECEPTION OF VISUAL INFORMATION

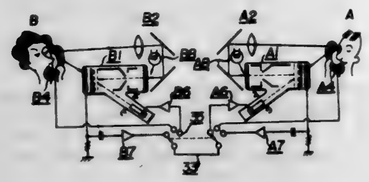
Shoichi Miyashiro, Yokohama-shi, Japan, assignor to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan

Filed Apr. 18, 1966, Ser. No. 543,102

Claims priority, application Japan, Apr. 20, 1965, 40/22,947

Int. Cl. H01j *29/41*

U.S. Cl. 315—12 5 Claims



An evacuated envelope contains an electric charge image storage target consisting of a conductive back electrode and a storage face layer having high resistivity, a photocathode, an electron gun, and a fluorescent screen, said tube being so adapted that either an image carrying photoelectric current produced by projecting an optical image on the photocathode or an electron beam emitted from the electron gun and modulated by externally fed video signals may be directed to the said image storage target so as to form a corresponding charge image on the target which then may be either scanned by the electron beam emitted from the electron gun or irradiated by flood photoelectrons originating at the photocathode, thereby producing modulation of either the scanning electron beam or the flood photoelectrons which may be caused to strike the fluorescent screen, either for taking video signal current out of the tube or for the reproduction of the original image or scene.

3,447,024

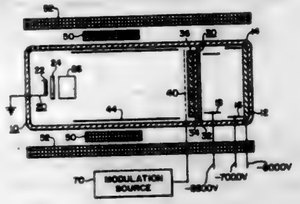
SECONDARY ELECTRON CONDUCTION ELECTRON TUBE

Martin Green, Big Flats, N.Y., and Howard I. McDevitt, Jr., Ann Arbor, Mich., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 12, 1967, Ser. No. 645,388

Int. Cl. H01j *29/41*

U.S. Cl. 315—12 4 Claims



A system and method of operation of an electronic tube incorporating a secondary electron conduction storage target to provide high speed modulation of the amplification of the storage target.

3,447,025

CIRCUIT ARRANGEMENT FOR USE IN A TELEVISION RECEIVER FOR DYNAMIC RADIAL CONVERGENCE IN RHYTHM OF THE FIELD FREQUENCY

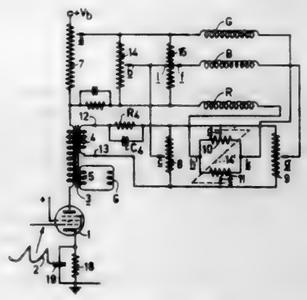
Gerrit Kool, Emmasingel, Eindhoven, Netherlands, assignor, by mesne assignments, to U.S. Philips Corporation, a corporation of Delaware

Filed Feb. 16, 1967, Ser. No. 616,738

Claims priority, application Netherlands, Feb. 19, 1966, 6602181

Int. Cl. H01j *29/50*

U.S. Cl. 315—13 8 Claims



A vertical dynamic convergence circuit for use with a color television deflection system. The circuit includes a source of parabolic current and means for simultaneously varying the parabolic current flowing in two of the convergence coils. The circuit further includes a single source of sawtooth current in combination with a novel matrix arrangement which operates to simultaneously vary the relative amplitudes of the sawtooth currents flowing in said two convergence coils either in the same or opposite sense.

3,447,026

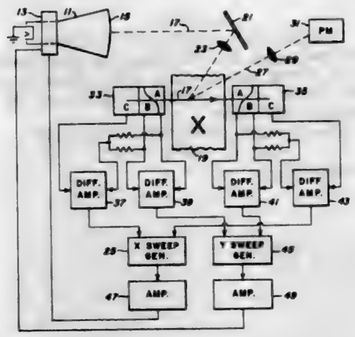
CRT SCAN STABILIZER

Stephen E. Townsend, Rochester, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Oct. 15, 1965, Ser. No. 496,284

Int. Cl. H01j *29/70*

U.S. Cl. 315—21 12 Claims



Apparatus for stabilizing the scan trace of a CRT flying spot scanner and including a plurality of multi-element, proportioned area, light responsive detector apparatus for developing signals proportional to the horizontal and vertical positional errors of the scan trace relative to a normal position. The geometry and position of each of the detectors is arranged so that the ratio of the width of the impinging trace on one element to the width of the impinging trace on a second element is proportional to the vertical position error of the trace and the error is generated by comparing the output signal produced by the impinging trace on a third element with a reference signal.

3,447,027

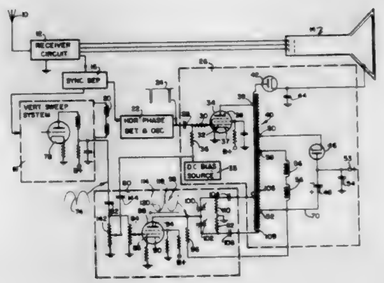
PINCUSHION CORRECTION CIRCUIT

Don A. Kramer, Rolling Meadows, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed Sept. 18, 1967, Ser. No. 668,540

Int. Cl. H01j *29/70*

U.S. Cl. 315—24 7 Claims



The circuit includes means to develop a parabolic signal at the vertical sweep frequency for controlling the capacitance of voltage variable capacitors. The capacitors are coupled in circuit with the horizontal sweep system to modify the horizontal deflection current and thereby straighten the sides of the raster.

3,447,028

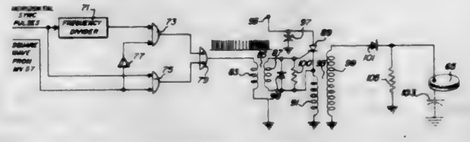
SWITCH FOR A COLOR TELEVISION RECEIVER

Lawrence K. M. Ting, Arlington, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed Nov. 3, 1966, Ser. No. 591,895

Int. Cl. H01j *29/52*

U.S. Cl. 315—30 19 Claims



This specification discloses color television receivers of the type in which the multi-color images are produced by accelerating an electron beam to different velocities. Each of the receivers employs a high voltage switch for applying rectangular waveforms to the screen of the kinescope of the receiver in order to accelerate the electron beam to different velocities. Several different embodiments of the high voltage switch are disclosed. These high voltage switches generate the rectangular waveform from the horizontal sync pulses, which are selectively gated to the primary of a step up high voltage transformer. The output of the high voltage transformer is applied through a high voltage rectifier to the capacitive load provided by a conductive film on the screen of the kinescope. The application of the pulses to the primary of the high voltage transformer is controlled in a manner so the desired high voltage square wave is produced across the capacitive load.

3,447,029

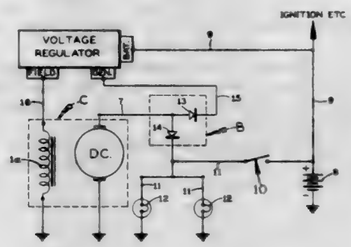
CONTINUOUS HEADLAMP LIGHTING WITH GENERATOR POWER DURING VEHICLE OPERATION

Charles L. Dill, Jr., Miami, Fla., assignor to Edward M. Long, Miami, Fla.

Filed Sept. 8, 1967, Ser. No. 666,281

Int. Cl. B60q *1/04, 1/26*

U.S. Cl. 315—80 4 Claims



Solid state means connected in a vehicular electric circuit for energizing frontal lights when the generator in the vehicle is driven by the engine thereof.

3,447,030

COLD SEAL LAMP PRESSURE REGULATION

Lee R. Gallagher, Altadena, Calif., and Peter D. Lenn, Arlington, Va., assignors to Electro-Optical Systems, Inc., Pasadena, Calif., a corporation of California

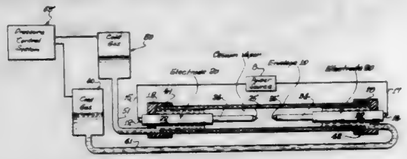
Filed Feb. 28, 1967, Ser. No. 619,391

Int. Cl. H01j *13/28, 17/26*

U.S. Cl. 315—108 7 Claims

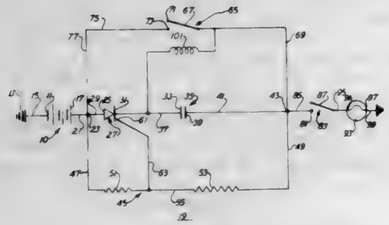
A system for controlling the position of the liquid-vapor interface in cold seal vapor-electric tubes of the

type containing a quantity of liquid discharge material held by capillary forces to act as a thermal barrier. A quantity of the liquid discharge material is stored in a



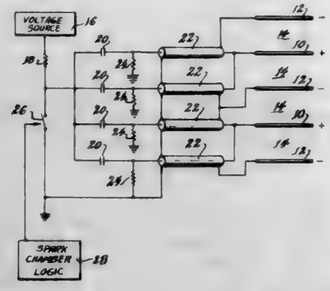
pressurized container connected by a feed pipe to the interior volume of the tube, control of the pressure thereby determining the amount of discharge material forced through the feed pipe and into the tube.

3,447,031
CONTROLLED SWITCH FLASHER
John D. Jenks, Dearborn, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Aug. 22, 1967, Ser. No. 662,364
Int. Cl. H05b *41/30*
U.S. Cl. 315—209 **8 Claims**



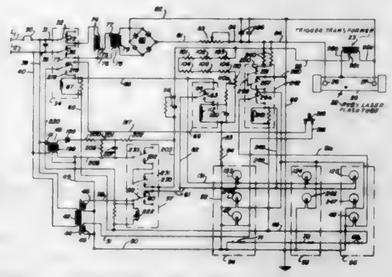
A controlled switch flasher comprising a two terminal solid state operated device in which a lamp is intermittently energized by means of a solid state switching device, preferably in the form of a gate controlled rectifier, and other components when the lamp is connected to the circuit.

3,447,032
HIGH-VOLTAGE PULSING APPARATUS FOR A SPARK CHAMBER
Thomas A. Romanowski, Elmhurst, and Charles J. Rush, Downers Grove, Ill., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed June 21, 1967, Ser. No. 648,534
Int. Cl. H05b *37/00, 41/14;* **H01j** *7/44*
U.S. Cl. 315—240 **3 Claims**



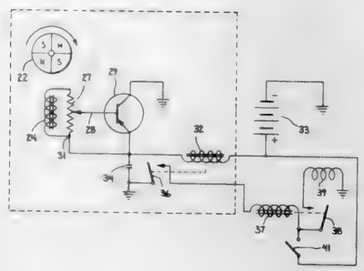
For a spark chamber embodying a plurality of spark chamber gaps defined by spatially mounted plate electrodes, a capacitor is provided for each spark chamber gap and has one side thereof connected through the center conductor of a coaxial cable to an associated plate electrode. The other plate electrodes are connected to electrical ground through the outer conductors of the coaxial cables. A voltage supply charges the capacitors and a spark chamber trigger switch responsive to spark chamber logic circuitry effects transfer of the capacitor charge to the plate electrodes.

3,447,033
LASER, WEAPON SIMULATOR
Peter M. Redmond, Port Washington, and Lawrence Waszak, North Massapequa, N.Y., assignors to the United States of America as represented by the Secretary of the Navy
Filed Feb. 21, 1967, Ser. No. 618,310
Int. Cl. H05b *37/02*
U.S. Cl. 315—241 **5 Claims**



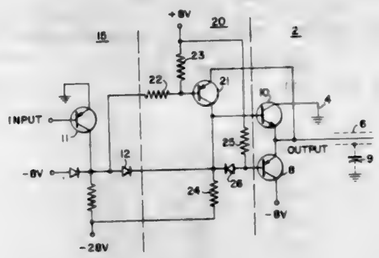
A laser, weapon (tank gun) similator, comprising a gun barrel mounted laser and optics device and associated xenon flashtube power supply including safety means for automatically discharging the flashtube firing capacitors in the event of power failure, and means for disabling the trigger circuit during charging of the firing capacitors to the preclude any possible premature attempt to fire the laser.

3,447,034
AUTOMOTIVE OVERDRIVE CONTROL
Gerald D. Smith, Indianapolis, Ind., assignor to Versatek Industries, Inc., Lawrence, Ind., a corporation of Indiana
Filed Oct. 24, 1966, Ser. No. 589,032
Int. Cl. H02h *3/02, 7/00*
U.S. Cl. 317—5 **3 Claims**



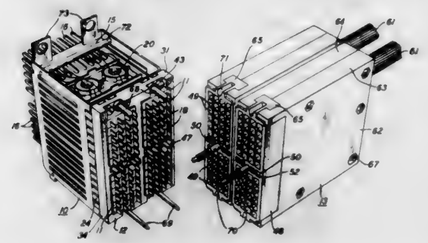
A non-chatter, snap-action switching circuit wherein the circuit's components are arranged in a housing which can be readily inserted into the speedometer cable train and the speedometer itself thus permitting control of the overdrive mechanism of an automobile transmission.

3,447,035
CIRCUITRY FOR PROTECTING A PUSH-PULL SWITCHING DRIVER STAGE UPON OCCURRENCE OF A SHORT CIRCUIT AT THE OUTPUT THEREOF
Curtis R. Boykin, Severna Park, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 28, 1966, Ser. No. 568,667
Int. Cl. H02h *3/16, 7/20*
U.S. Cl. 317—31 **4 Claims**



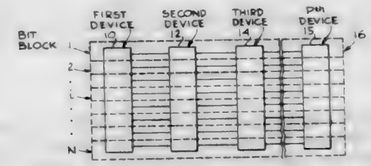
A short sensing transistor is connected to a push-pull complementary pair output driver stage with the three elements of the transistor moving up and down together in voltage under fault free operation so as to have negligible effect but when a short circuit occurs, the emitter element is grounded forcing the control electrodes of the driver stage to a back bias sufficient to turn off the driver stage. Another transistor is connected to also operate as a grounded emitter stage to latch the first transistor in its operating position as long as the short circuit exists.

3,447,036
ASSEMBLY FOR MOUNTING AND ALIGNING MODULES
Arthur J. Dore, Naperville, and John A. Herndon, Wheaton, Ill., and Norman Wasserman, Columbus, Ohio, assignors to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Apr. 21, 1967, Ser. No. 632,585
Int. Cl. H02b *1/04, 9/00, 1/10*
U.S. Cl. 317—99 **4 Claims**



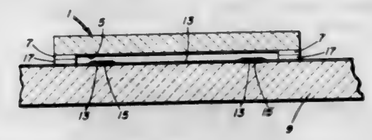
Several component trays with end connectors are received on parallel guides in a mounting frame. A faceplate mounted at one end of the frame achieves vertical, horizontal and depth alignment of each tray, thus positioning the end connectors very accurately. Adjustable male coding plugs on the faceplate and similarly adjusted male coding plugs on a mating female connector guard against wrong connections. Coding plugs on the faceplate prevent the plug connection of all female coded connectors with forbidden coding combinations.

3,447,037
DIGITAL DATA EQUIPMENT PACKAGING ORGANIZATION
Samuel Nissim, Malibu, Calif., assignor to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware
Filed July 25, 1966, Ser. No. 567,568
Int. Cl. H04q *1/02*
U.S. Cl. 317—101 **9 Claims**



A packaging organization for a digital data processing system. The packaging organization is characterized by utilizing a plurality of physical packages, e.g., a circuit board, each carrying essentially all of the hardware associated with a single bit. Such an organization permits a plurality of identical packages to be interconnected to form a system capable of processing, in parallel, words of a bit length equal to the number of packages employed.

3,447,038
METHOD AND APPARATUS FOR INTERCONNECTING MICROELECTRONIC CIRCUIT WAFERS
William Liben, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Aug. 1, 1966, Ser. No. 569,522
Int. Cl. H02b *1/04*
U.S. Cl. 317—101 **4 Claims**

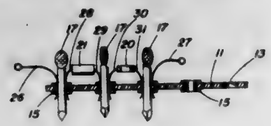


The subject invention relates to the field of microelectronics and more particularly to microelectronic circuits and the method of their construction. In the instant invention, a rectangular substrate is provided with a grid of conductors mounted on one surface thereof. The grid consists of spaced conductors extending between parallel edges of the substrate, and other spaced conductors extending between the other parallel edges of the substrate, the conductors being insulated at their intersecting points. Microelectronic circuit wafers, each comprising components to form a desired circuit, are mounted on the substrate and are connected to the conductors of the grid by means of lands on said wafers and corresponding lands on said grid.

3,447,039
ELECTRONIC CIRCUIT TEST BOARD
Edward F. Branagan, 11908 Rockinghorse Road, Rockville, Md. 20853
Filed Feb. 28, 1967, Ser. No. 619,906
Int. Cl. H02b *1/04*
U.S. Cl. 317—101 **9 Claims**

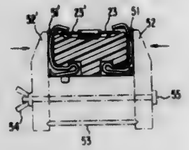
An electronic components mounting and electrically

connecting board having solderless connections. The board has rubber grommets fitted into holes cut in the board



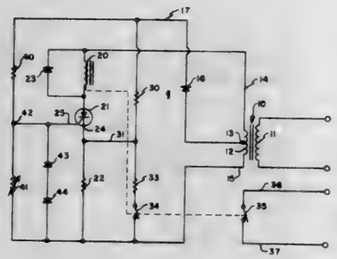
and uses metal interconnecting plugs to connect electrical component leads together in the grommets.

3,447,040
MICRO-ELEMENT CARRIER-CONNECTOR
Don E. Denton, Jr., Huntsville, Ala., assignor, by mesne assignments, to Brown Engineering Company, Inc., a corporation of California
Filed Mar. 10, 1967, Ser. No. 622,154
Int. Cl. H02b 1/04
U.S. Cl. 317—101 **27 Claims**



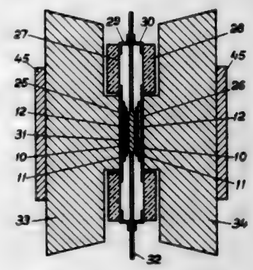
This invention is an improvement over prior art apparatus providing a carrier-connector block assembly for mounting micro-circuits on a circuit board in that it adapts such carrier-connectors to use with circuit boards above and below the block and further adapts carrier-connectors of this type to use with cold-wrap connections where external wires are to be connected to the terminals of the carrier-connector without the use of solder connections. Hook connections within the upper and lower faces of such a terminal block are extended to both upper and lower faces.

3,447,041
CONDITION RESPONSIVE CONTROLLED RECTIFIER CIRCUIT
Clifford L. Sandstrom, Bloomington, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Feb. 3, 1967, Ser. No. 613,861
Int. Cl. H01h 47/32, 9/56
U.S. Cl. 317—148.5 **7 Claims**



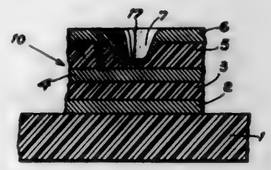
A condition responsive silicon controlled rectifier circuit for operating a relay wherein the gate circuit of the silicon controlled rectifier has a back bias and a forward bias supply combined for control of the silicon controlled rectifier. The gate circuit includes a voltage limiting element that clips the forward bias voltage to the silicon controlled rectifier and insures that the rectifier fires early in the applied voltage cycle, if at all.

3,447,042
SEMI-CONDUCTOR DEVICE COMPRISING TWO PARALLEL-CONNECTED SEMI-CONDUCTOR SYSTEMS IN PRESSURE CONTACT
Nils Eric Andersson, Ludvika, Sweden, assignor to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden
Filed May 31, 1966, Ser. No. 554,176
Claims priority, application Sweden, May 28, 1965, 7,017/65
Int. Cl. H01l 3/00, 15/00
U.S. Cl. 317—234 **4 Claims**



A semi-conductor system has a first and second semi-conductor rectifier, a first base member for the first semi-conductor rectifier and a second base member for the second semi-conductor rectifier, a counter-electrode and a compressing means pressing the first semi-conductor rectifier between the first base member and the counter electrode and the second semi-conductor rectifier between the second base member and the counter electrode, the base member being directly electrically connected to each other so that the semi-conductor rectifiers are electrically parallel-connected.

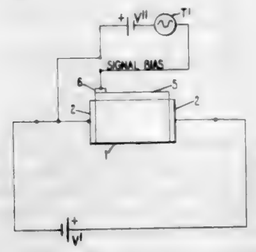
3,447,043
TUNNEL CATHODE IN MATRIX FORM WITH INTEGRAL STORAGE FEATURE
Milner W. Wallace, Saddle River, N.J., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed Dec. 29, 1966, Ser. No. 605,927
Int. Cl. H01l 3/08
U.S. Cl. 317—234 **10 Claims**



An electron discharge device including an electron-emitting matrix of metal-insulator-metal tunnel cathode elements, each said element having an integral capacitance cell comprising a metal-dielectric-metal structure such that one electrode of the capacitance cell is common with one electrode of the tunnel cathode proper. The tunnel cathode elements are interconnected to form a coordinate array such that each capacitance element may be selectively charged to place a predetermined voltage effectively in series with the corresponding tunnel

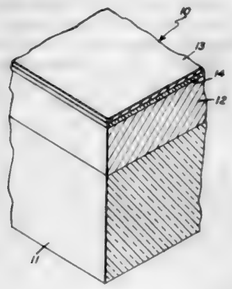
cathode element. Application of a "read out" voltage to the matrix allows selective mission from those cathodes having charged capacitance cells.

3,447,044
SCANNED LINE RADIATION SOURCE USING A REVERSE BIASED P-N JUNCTION ADJACENT A GUNN DIODE
Carl Peter Sandbank, Bishop's Stortford, and Michael Brian Neilson Butler, Harlow, England, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed June 2, 1967, Ser. No. 643,201
Claims priority, application Great Britain, July 15, 1966, 31,891/66
Int. Cl. H01l 3/00, 5/00
U.S. Cl. 317—234 **5 Claims**



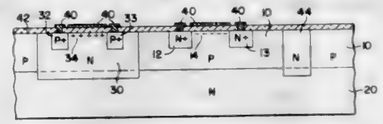
A solid state display device employing a light emitting P-N junction adjacent a body of semiconductive material exhibiting moving high field instability effects. As the high field domain travels through said body, electrons from said domain traverse the reverse-biased P-N junction to cause the emission of visible light from the vicinity of said junction. The intensity of the emitted light may be modulated by varying the magnitude of the reverse bias applied to the junction.

3,447,045
METAL-INSULATOR-METAL TUNNELING DEVICE WITH EXPONENTIAL I-V CHARACTERISTIC ONLY IN THE NEGATIVE RESISTANCE RANGE
Thomas W. Hickmott, Poughkeepsie, N.Y., assignor to General Electric Company, a corporation of New York
Original application Mar. 22, 1962, Ser. No. 181,677. Divided and this application Sept. 27, 1967, Ser. No. 670,879
Int. Cl. H01l 3/00, 5/06
U.S. Cl. 317—234 **2 Claims**



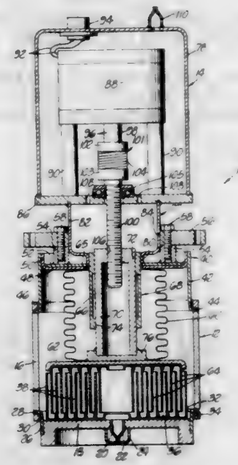
Thin film, solid state devices having a room-temperature negative resistance characteristic are made by a process including as a key step impressing a voltage potential across the insulating film of 100–2000 angstroms thickness sandwiched between two metal electrodes until there is a marked increase in the current flowing across the insulating film.

3,447,046
INTEGRATED COMPLEMENTARY MOS TYPE TRANSISTOR STRUCTURE AND METHOD OF MAKING SAME
James R. Cricchi, Catonsville, Md., Marvin H. White, Columbus, Ohio, and Raymond M. McLouski, Glen Burnie, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 31, 1967, Ser. No. 642,509
Int. Cl. H01l 11/00, 15/00
U.S. Cl. 317—235 **7 Claims**



Complementary MOS transistors are provided utilizing out-diffusion through an epitaxially grown layer to form a region in which one of the transistor elements is disposed, the epitaxially grown layer being opposite in conductivity type to that of the original substrate with an isolation wall, which may also be out-diffused, extending through the epitaxial layer to the substrate. Preferably the out-diffused regions are formed with a slow diffusing impurity such as arsenic.

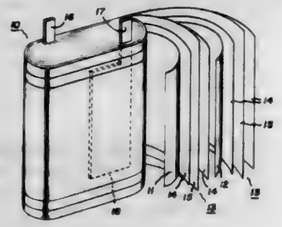
3,447,047
MOTOR DRIVEN VARIABLE CAPACITOR
Wesley Newton Lindsay, 10710 Ridgeview Ave., San Jose, Calif. 95127
Filed Mar. 20, 1968, Ser. No. 714,602
Int. Cl. H01g 5/02
U.S. Cl. 317—245 **8 Claims**



A variable capacitor in which the hermetically sealed envelope thereof is divided into a high-vacuum compartment and a relatively low-vacuum compartment by an expansible bellows. The fixed and mobile electrodes of the capacitor are disposed in the high-vacuum compartment while a reversing motor and translation mechanism for the mobile electrode are disposed in the other compartment. The provision of a partially evacuated compart-

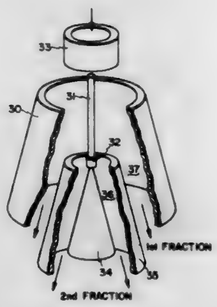
ment for the motor and translation mechanism reduces the pressure differential across the bellows, thereby reducing the torque requirements of the motor and permitting the use of conventional lubricants for the motor and translation mechanism. This principle may also be applied to a vacuum switch.

3,447,048
ELECTRIC CAPACITOR WITH EXTENDED WICKING
John Henby Wurster, Glens Falls, N.Y., assignor to General Electric Company, a corporation of New York
Filed Apr. 14, 1967, Ser. No. 631,047
Int. Cl. H01g *3/21*
U.S. Cl. 317—258 **16 Claims**



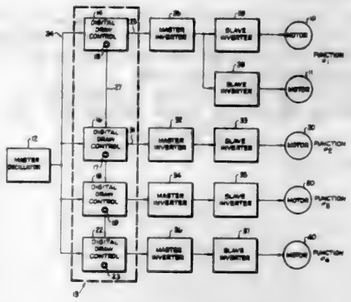
A roll-type capacitor including alternate strips, layers or sheets of a dielectric material and electrode material wherein one or more adjacent dielectric sheets may be of a synthetic resin, for example, a polyolefin material such as polypropylene. A further sheet of a dielectric material such as paper is inserted between a pair of adjacent resin sheets or between a resin sheet and another adjacent sheet. The paper material sheet is significantly wider than the resin sheet so that the paper sheet projects or extends beyond the resin sheet at the exposed edges of the capacitor roll.

3,447,049
USE OF INHOMOGENEOUS ELECTRICAL FIELDS IN PROCESSES INFLUENCED BY ELECTRICAL FIELDS
Vassilis C. P. Morfopoulos, 233 E. 70th St., New York, N.Y. 10021
Filed May 5, 1965, Ser. No. 453,332
Int. Cl. H01g *3/02*
U.S. Cl. 317—262 **3 Claims**



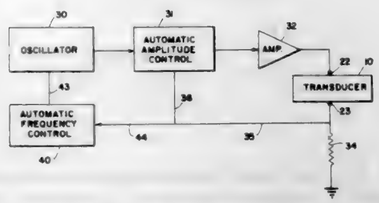
Electrical and/or electrochemical mechanisms, such as movement of charge on particle surfaces or charge interactions of matter are enhanced by the use of inhomogeneous electrical fields having strong electrical gradients as location in the field is changed relative to the position between the electrodes.

3,447,050
RATIO CONTROL SYSTEM
Everett R. Geis, Orange, Calif., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Oct. 5, 1965, Ser. No. 493,089
Int. Cl. H02p *7/06, 11/00*
U.S. Cl. 318—67 **13 Claims**



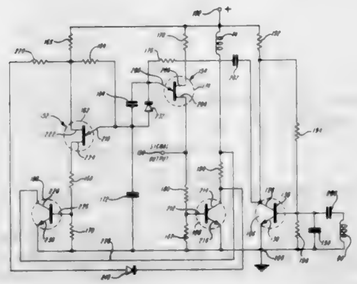
Different A-C motors are operated at the different speeds corresponding to the different frequencies of output voltages provided by respective different inverters. The different frequencies have a common reference provided by the output signal of a master oscillator. A draw control system includes a plurality of control stages each coupled between the master oscillator and one of the function channels in which one or more of the A-C motors is connected. In each draw control stage a counter accumulates timing pulses from the master oscillator and the accumulated digital count is continuously converted to an analog voltage. A comparator receives a portion of this analog voltage, and also receives a reference voltage determined by a reference element in the preceding draw control stage. Output signals from the comparator regulate the frequency of inverter operation in that function channel and thus determine the speed of the associated A-C motor both as a function of the timing signals received from the master oscillator and as a function of the reference voltage received from the adjacent draw control stage. The count accumulated from the master oscillator is also stored in a memory circuit in each draw control stage and periodically converted into an analog signal for application across a reference component which is adjusted to pass the reference voltage to the succeeding draw control stage.

3,447,051
CONTROL CIRCUIT FOR ELECTRO-MECHANICAL DEVICES
John G. Attwood, Oak Park, and Robert L. Kosrow, Elk Grove Village, Ill., assignors to Union Special Machine Company, Chicago, Ill., a corporation of Illinois
Filed Jan. 13, 1965, Ser. No. 425,230
Int. Cl. H03g *11/00;* **H01v** *7/00, 9/00*
U.S. Cl. 318—127 **18 Claims**



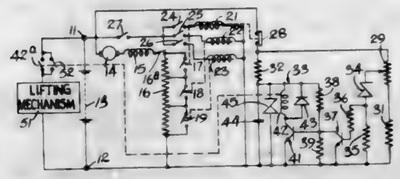
A control circuit for an ultrasonic sealing tool which is effective to maintain the amplitude of vibration of the tool at a predetermined constant value irrespective of variations in the applied mechanical loading. The circuit includes a detector responsive to a difference in phase between constant amplitude current and voltage signals to also maintain the frequency of the tool constant under varying loading conditions.

3,447,052
OSCILLATING MOTOR DRIVE SYSTEM
Vincent W. Martin, Lancaster, Pa., and Henry A. Lyczak, Riverside, N.J., assignors to Hamilton Watch Company, Lancaster, Pa., a corporation of Pennsylvania
Filed Oct. 12, 1965, Ser. No. 495,080
Int. Cl. H02p *3/02, 5/06, 7/06*
U.S. Cl. 318—128 **17 Claims**



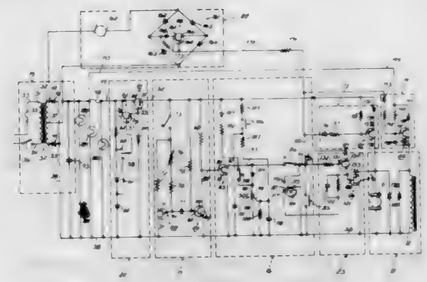
Disclosed is a relaxation oscillator pulse generator useful as a low frequency pulse timer or as a self-starting drive for timepieces. The system includes a mechanical oscillator coupled to a pair of self-starting electrical oscillators, each having a natural period of oscillation more than twice that of the mechanical oscillator. One of the electrical oscillators provides rapid start-up of the system and the other takes over control after starting. The overall system operates at the rate of and with the stability of the mechanical oscillator.

3,447,053
BATTERY DISCHARGE INDICATOR FOR USE IN AN INDUSTRIAL TRUCK
David C. Tedd, Cornwells Heights, Pa., asignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio
Filed Jan. 10, 1967, Ser. No. 608,425
Claims priority, application Great Britain, Jan. 14, 1966, 1,825/66
Int. Cl. H02p *3/06*
U.S. Cl. 318—139 **7 Claims**



A circuit that is controlled by battery voltage for indicating a discharged condition of the battery on an industrial truck, and that is disconnected by the traction motor controller so as to avoid giving a false indication when the controller moves to a position that would allow the motor to depress the voltage substantially. The voltage sensing element is a Zener diode, and in the form shown the indication is given through a relay that will incapacitate the lifting mechanism of the truck.

3,447,054
CAMERA CONTROL CIRCUIT
Donald E. Hansen, Brookfield Center, and Eric G. Quist, Roxbury, Conn., assignors to Mosler Research Products Incorporated, Danbury, Conn., a corporation of Delaware
Filed Sept. 30, 1966, Ser. No. 583,320
Int. Cl. H02p *3/20, 5/00, 1/00*
U.S. Cl. 318—269 **4 Claims**

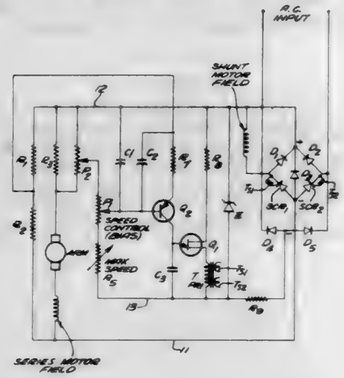


A motor controlled circuit for automatically advancing, on a continuous or intermittent basis, film in a camera of the type used in photographic security and surveillance systems, including a motor having armature and field windings and having a driven element connectable in driving relationship with the camera film advancing mechanism; selectively operable transistor switches interconnecting a source of potential with the armature and field windings for selectively causing current to flow through the windings to energize the motor to advance the film; a control signal generator for producing pulse-type or continuous signals for controlling the conduction of the transistor switches to thereby regulate the flow of current through the windings; an armature brake circuit including a transistor adapted to selectively short-circuit the armature winding when the potential source is effectively disconnected from the armature winding; and a delay circuit connected to the transistor switch associated with the field winding for delaying the nonconduction of the field winding transistor switch for a brief interval subsequent to disconnection of the potential source and the armature winding to thereby enhance braking action.

3,447,055
D.C. MOTOR SPEED CONTROL CIRCUIT
Raymond J. Mason, Lynwood, Calif., assignor to Minarik Electric Company, Los Angeles, Calif., a corporation of California
Filed Oct. 17, 1966, Ser. No. 587,063
Int. Cl. H02p *5/12, 5/36, 7/24*
U.S. Cl. 318—331 **6 Claims**

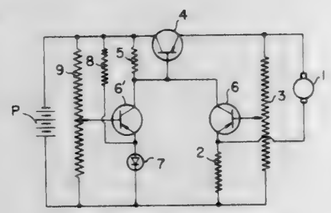
A speed control circuit for a D.C. motor, which includes a rectifier that is hooked to an alternating current supply for providing rectified but essentially unfiltered voltage, a speed control potentiometer for subjecting the motor armature to a selected portion of the available supply voltage in order to thereby establish a nominal operating speed, two feedback circuits for sensing the rectified supply voltage and the armature current, respectively, and feeding them back in a phase relationship, two capacitors for storing the respective feedback signals so as to provide respective control signals which are a func-

tion of several cycles of motor operation, and a transistor responsive to the signal stored on both capacitors for



controlling the action of a unijunction transistor which in turn controls the operation of the rectifier circuit for increasing or decreasing the flow of current.

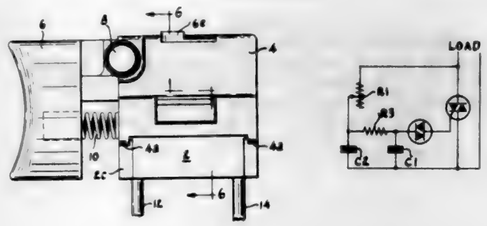
3,447,056
APPARATUS FOR CONTROLLING THE SPEED OF A DIRECT CURRENT MOTOR
Shinya Kosaka, Fuchu-shi, Tokyo, and Kenzi Sasaguri, Tokyo, Japan, assignors to Olympus Optical Co., Inc., Tokyo, Japan
Filed Nov. 3, 1966, Ser. No. 591,861
Claims priority, application Japan, Nov. 9, 1965, 40/68,300
Int. Cl. H02k *27/20, 23/66*
U.S. Cl. 318—332 **1 Claim**



A motor speed controlling circuit including a serial resistor and a control transistor in series with a motor and a source of current. Shunt resistors are connected in parallel across the motor and the current source. Detecting and amplifying transistors have their bases connected to the respective shunt resistors and their collectors connected to the base of the control transistor. The emitter of one detecting and amplifying transistor is connected to the circuit between the serial resistor and the motor, and a constant voltage diode is provided between the power source and the emitter of the second detecting and amplifying transistor.

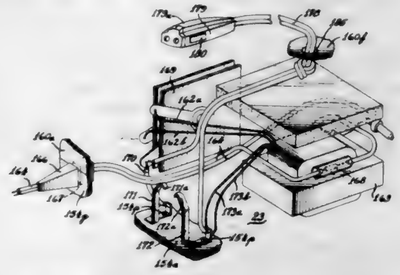
3,447,057
SOLID STATE POWER CONTROLLER FOR A.C. LOAD DEVICES
Harry W. Brown, Big Bend, Wis., and Larry D. Thompson, Arlington, Tex., assignors, by direct and mesne assignments, to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed July 14, 1966, Ser. No. 565,192
Int. Cl. H02p *5/36, 7/58*
U.S. Cl. 318—345 **6 Claims**

A solid state switching circuit and power controller for a portable electric tool employing a bidirectional thyristor triode and a trigger diode mounted on a common heat



sink support, and a trigger circuit composed of two capacitors, a fixed resistor, and a variable resistor.

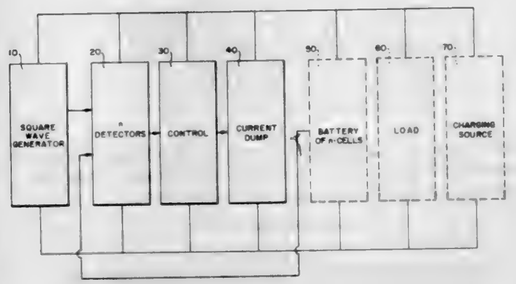
3,447,058
RECHARGEABLE BATTERY OPERATED APPLIANCE
Daniel C. Stahly, Villa Park, George H. Schaefer, River Forest, and William P. Beck, Westchester, Ill., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed May 27, 1966, Ser. No. 553,510
Int. Cl. H02j *7/02*
U.S. Cl. 320—2 **9 Claims**



A cordless electric shaver is provided with a support having a recess. When the shaver is stored in the recess, charging terminals on the support contact terminals on the shaver so that a battery in the shaver is charged from a charging unit in the support. A cord connected to the output of the charging unit in common with the charging terminals can be connected to the shaver terminals for operation of the shaver directly from the power supply. The shaver includes a switch arranged so that the shaver may be charged, operated by battery or operated from the cord with only two terminals.

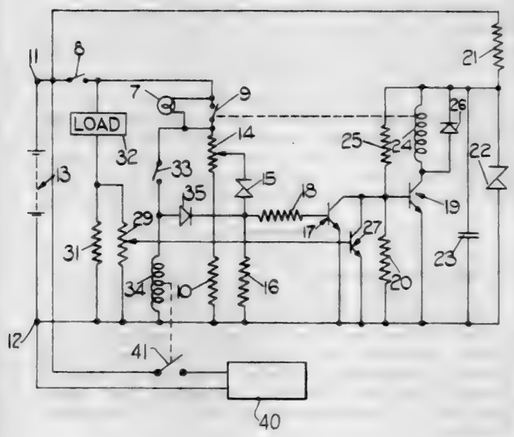
3,447,059
SHUNT CHARGE CURRENT CONTROLLER FOR SEALED ELECTROCHEMICAL CELLS WITH CONTROL ELECTRODES
Floyd E. Ford, Davidsonville, Piotr P. M. Liwski, Annapolis, and Nelson H. Potter, Berwyn Heights, Md., and Kenneth O. Sizemore, Washington, D.C., assignors to the United States of America as represented by the Secretary of the Navy
Filed Oct. 25, 1966, Ser. No. 589,778
Int. Cl. H02j *7/10, 7/04*
U.S. Cl. 320—27 **18 Claims**

A system for charging a storage battery with a control electrode. The circuit responds either to the overall battery voltage or to the voltage on the control electrode of any individual cell. As a predetermined voltage is reached,



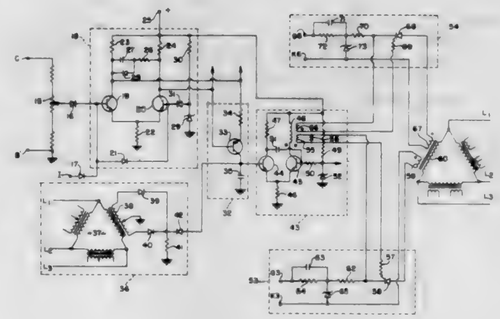
a current dump shunt regulator is energized to divert the charging current away from the battery to ground.

3,447,060
CIRCUIT FOR INDICATING WHEN A BATTERY IS DISCHARGED
David Clifford Tedd, Great Barr, Birmingham, England, assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio
Filed Mar. 9, 1966, Ser. No. 532,969
Claims priority, application Great Britain, Mar. 11, 1965, 10,333/65
Int. Cl. H02j *7/04, 7/16*
U.S. Cl. 320—48 **6 Claims**



An industrial truck control circuit for indicating low battery charge occuring during operation thereof, comprising a transistorized voltage-sensitive circuit that is conductive at reduced battery terminal voltage only at a prescribed current level determined by a current-sensitive circuit which counteracts circuit voltage variations due to load. When low charge occurs, the voltage-sensitive circuit effects disconnecting power to truck non-drive operating components, such as a lift mechanism, thereby indicating low battery condition in addition to energizing a warning light if desired.

3,447,061
MULTI-PHASE RECTIFIER WITH INHERENT PHASE BALANCE
Robert E. Russell and Eugene S. McVey, Charlottesville, Va., assignors to Basic, Incorporated, Cleveland, Ohio, a corporation of Ohio
Filed July 12, 1965, Ser. No. 471,241
Int. Cl. H02m *1/08*
U.S. Cl. 321—5 **3 Claims**

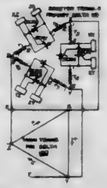


A multiple phase SCR rectifier circuit having width modulated gate signals for triggering the SCR's to provide a constant output voltage or current, either output being compared to a reference signal by a differential amplifier to produce various phase ramp function voltages having a slope which determines the triggering time of the SCR's. In complementary phases attainment of a particular voltage level of the ramp generator signal is detected and converted to a pulse output at appropriate times within the power cycles. The circuit is characterized in that it is not influenced by variations in semi-conductor parameters or by drifting voltages utilizing a floating error signal control of the ramp signal generators.

3,447,062
POLYPHASE BOOSTER CONTROLLED BATTERY CHARGER WITH REDUCED TELEPHONE INTERFERENCE
William H. Bixby, Columbus, Ohio, assignor, by mesne assignments, to New North Electric Company, Galion, Ohio, a corporation of Ohio
Filed July 5, 1966, Ser. No. 562,723
Int. Cl. H02m *1/08, 7/44*
U.S. Cl. 321—5 **14 Claims**

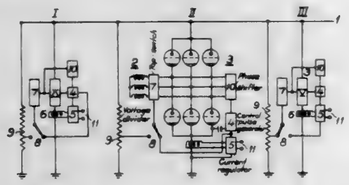
A polyphase battery charger which provides minimum telephone interference having a delta connected main transformer with secondary windings connected in quadruple zigzag array, and a delta connected booster transformer with two primary windings in each arm being series-connected a pair of gated switches, and two secondary windings for each booster primary winding, the secondary winding for one booster primary winding being connected in series with and phase displaced with the vector provided by one zigzag, and the secondary winding for a different booster primary winding in the same booster arm being connected in series with and phase displaced with the consecutive vector phase provided by a different zigzag. Each

main secondary winding is connected to the load by one uncontrolled rectifier and the associated booster winding



is connected to the load in series with the main transformer by a second rectifier which blocks the first rectifier when conductive.

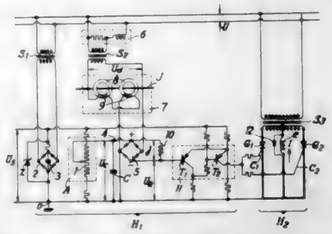
3,447,063
MEANS FOR CONTROLLING INVERTERS
Bertil Hammarlund, Ludvika, Sweden, assignor to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden
Filed Jan. 24, 1967, Ser. No. 611,421
Claims priority, application Sweden, Jan. 24, 1966, 858/66
Int. Cl. H02m *7/52*
U.S. Cl. 321—5 **3 Claims**



A static inverter station connecting a DC transmission line with an AC network and provided with a control regulator and an AC voltage control means. Said control regulator is provided for controlling the rectifiers of the inverter station through the grid control means of the rectifiers with respect to a predetermined value of a certain transmission magnitude. Said AC voltage control means is inserted between said AC network and the rectifiers of the station and is controlled from the output from said control regulator.

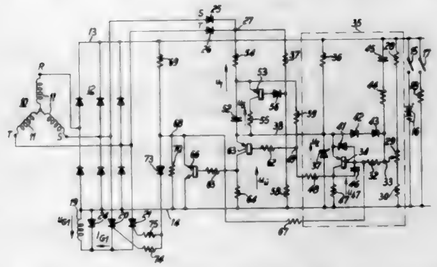
3,447,064
ELECTRONIC DEVICE FOR CONTROLLING THE MEAN CURRENT SUPPLIED BY A THYRISTOR CIRCUIT
Pierre Moury, Paris, France, assignor to Forges et Ateliers de Constructions Electriques de Jeumont, Paris, France
Filed Jan. 26, 1965, Ser. No. 428,037
Claims priority, application France, Jan. 31, 1964, 962,173
Int. Cl. H02m *1/08, 7/44, 7/68*
U.S. Cl. 321—18 **3 Claims**

This invention relates to an electronic device for controlling the current delivered by a thyristor circuit comprising an alternating supply voltage, a transducer having a primary winding energized by a current to be controlled and having an output voltage proportional to the controlled current, an electronic trigger, and thyristor means having controlled electrodes connected to the electronic trigger. The output voltage of the transducer is compared to a reference voltage to produce a voltage difference which is applied to the electronic trigger. The transducer is arranged so that its output voltage is interrupted sharply at each alternation of the supply voltage so that a sharp increase of the voltage difference is produced which causes the opening of the electronic trigger which, in turn, causes the conduction of the thyristor means, whereby the conduction of the thyristor means is independent of the operating differential of the electronic trigger. The



conduction of the thyristor means is maintained or suppressed for the next alternation of the voltage supply depending on the value of the controlled current.

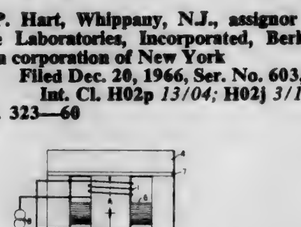
3,447,065
VOLTAGE REGULATOR FOR A MULTIPHASE VARIABLE-SPEED, VARIABLE-FREQUENCY GENERATOR FOR AUTOMOTIVE USE
Edgar Kuhn, Gerlingen, Germany, assignor to Robert Bosch GmbH, Stuttgart, Germany, a limited-liability company of Germany
Filed Jan. 20, 1967, Ser. No. 610,540
Claims priority, application Germany, Feb. 12, 1966, B 85,790
Int. Cl. H02h *7/06;* **H02p** *9/00, 9/26*
U.S. Cl. 322—24 **18 Claims**



A saw-tooth wave generator (**52, 53, 54**) provides a saw-tooth wave, in synchronism with the frequency of the generator (**10**); these saw-tooth waves are added to an error signal proportional to the deviation of output potential of the generator from a desired value; the firing point of controlled rectifiers, during each half-wave, supplying the generator field is adjusted in accordance with the relationship of the combined error signal and saw-tooth wave with respect to a reference, by determining the coincidence of the reference as the combined error signal—saw-tooth wave increases during each cycle of the generator.

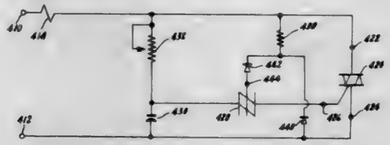
3,447,066
CURRENT CONTROL CIRCUIT FOR AUTOMATICALLY BALANCING ARBITRARILY VARIABLE PRESET CURRENT VALUES
Gerhard Heyner and York Rogowsky, Berlin, Robert Jötten, Darmstadt, and Winfried Muttelsee and Reiner Foerst, Eppelheim, Germany, assignors to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, and 400 kV-Farchungsgemeinschaft e.V., Heidelberg, Germany
Filed Feb. 15, 1967, Ser. No. 616,219
Claims priority, application Germany, Feb. 18, 1966, L 52,900
Int. Cl. G05f *1/10, 3/02, 3/00*
U.S. Cl. 323—1 **5 Claims**

The currents in a plurality of conductors are automatically balanced to maintain a constant sum value by a control circuit which includes a first current summing circuit coupled to all of the current conductors, an amplifier coupled to the output of the first current summing circuit, and a plurality of additional current summing circuits each coupled to the amplifier output and to a corresponding one of the current conductors



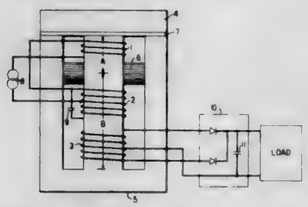
to add a correction current thereto when the sum of currents deviates from a predetermined sum value. The amplifier output is coupled to the additional current summing circuits through variable impedance elements whose setting determines the ratio between the correction currents applied to individual current conductors.

3,447,067
HYSTERESIS FREE PHASE CONTROL CIRCUIT USING SILICON BILATERAL SWITCH
Walter R. Spofford, Jr., Fayetteville, N.Y., assignor to General Electric Company, a corporation of New York
Filed Feb. 27, 1967, Ser. No. 618,632
Int. Cl. H02p *13/14*
U.S. Cl. 323—22 **1 Claim**



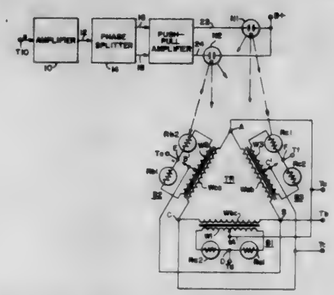
A power control device having a bidirectional solid state semiconductor multi-layer power switch controlling the supply of alternating current power to a load. Phase control is achieved by an RC phase shifting network and a silicon bilateral switch. Firing of the silicon bilateral switch takes place symmetrically in both half cycles and full range hysteresis-free operation results.

3,447,068
SINGLE CORE SERIES-SHUNT FERRORESONANT VOLTAGE REGULATOR WITH EASILY ALTERED GAP
Harry P. Hart, Whippany, N.J., assignor to Bell Telephone Laboratories, Incorporated, Berkeley Heights, N.J., a corporation of New York
Filed Dec. 20, 1966, Ser. No. 603,245
Int. Cl. H02p *13/04;* **H02j** *3/12*
U.S. Cl. 323—60 **6 Claims**



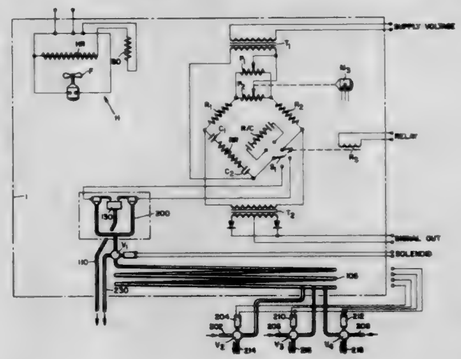
The connecting bar at one end of a three-legged magnetic core is spaced a uniform distance from the legs to form an easily altered gap, and a magnetic shunt joins the three legs at a point between the end bars. The linear inductance is wound on the center core leg between the shunt and the gap, and the saturating inductor, which is shunted by the ferrocapacitor, is wound on the center leg separated from the linear inductor by the shunt. The linear and saturating inductors, serially connected across the source in opposite polarity, develop aiding magnetomotive forces to effect ferroresonant regulation.

3,447,069
LIGHT RESPONSIVE PHASE SHIFTING CIRCUITRY
Donald R. Hamilton, Turtle Creek, and Paul R. Malmberg, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 1, 1966, Ser. No. 598,469
Int. Cl. G05f *3/02*
U.S. Cl. 323—122 **8 Claims**



Light responsive phase shifting circuitry is disclosed wherein the phase of the voltage developed across a light dependent resistor is made controllable with respect to a reference phase by irridating the resistor, with a phase shift device such as a capacitor being used to provide a fixed phase shift with respect to the voltage developed across the light dependent resistor.

3,447,070
APPARATUS FOR MEASURING THE ELECTRICAL CONDUCTIVITY OF CORROSIVE FLUIDS
Max Sand and George J. Cvejanovich, Aruba, Netherlands Antilles, assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed Apr. 11, 1966, Ser. No. 541,697
Int. Cl. G01r *11/44, 27/02*
U.S. Cl. 324—30 **3 Claims**



Apparatus which allows the electrical conductivity of a corrosive fluid to be measured without placing instrument electrodes into direct contact with the fluid, thus avoid-

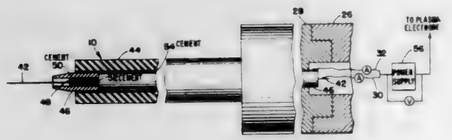
ing electrode corrosion. The apparatus comprises a glass U-tube conductivity cell for the fluid to be tested, which tube forms a capacitance coupling with the material to be tested. Each arm of the U-tube is provided with an externally coated reservoir wherein the coating is of a conductive nature. A Wheatstone bridge is employed in a suitable measuring circuit and an alternating current of high frequency is employed to obtain reliable conductivity measurements in conjunction with the U-tube conductivity cell.

3,447,071

PROBES HAVING GUARD RING AND PRIMARY SENSOR AT SAME POTENTIAL TO PREVENT COLLECTION OF STRAY WALL CURRENTS IN IONIZED GASES

James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of James F. Morris, Parkview, and Richard F. Tischler, Cleveland, Ohio, and Paul Beckman, Huntington Valley, Pa.

Filed Sept. 22, 1965, Ser. No. 489,442
Int. Cl. G01k *7/04;* **G01r** *1/06;* **H01j** *1/88*
U.S. Cl. 324—33 **16 Claims**



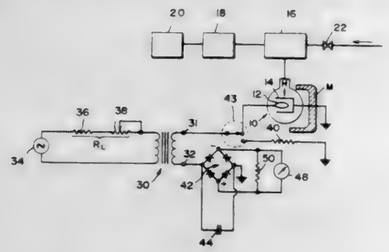
Both the primary sensor of a plasma probe and its guard ring are operated at the same electrical potential by connecting them to a common power supply. The guard ring is electrically isolated from the primary sensor and their currents are measured separately.

3,447,072

COLD CATHODE PENNING TYPE GAUGE FOR MONITORING VACUUM LEVEL IN A SPUTTERING PROCESS

Deane P. Sheldon, Franklin, Mass., assignor to National Research Corporation, Newton Highlands, Mass., a corporation of Massachusetts

Filed Dec. 22, 1966, Ser. No. 604,053
Int. Cl. G01n *27/62*
U.S. Cl. 324—33 **1 Claim**



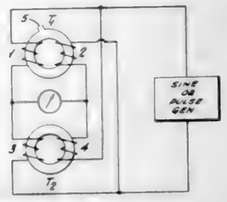
A Penning type ionization gauge is operated with an alternating current potential source to produce a characteristic wide scale over the pressure range 10^{-4} to 10^{-2} torr. A transformer with an adjustable load resistance in the primary circuit and a calibration resistor in the secondary circuit provides a built-in calibration function for the gauge to allow for regional variations in line voltage without the expense of a line voltage regulator.

3,447,073

PARAMAGNETIC FLUID ANALYZER UTILIZING TOROIDAL FLUID CONTAINERS AND AN INDUCTANCE BRIDGE

George W. Gamble, 11 Washington Drive, Apt. C, Ramsey, N.J. 07446

Filed Oct. 26, 1966, Ser. No. 589,641
Int. Cl. G01r *33/12*
U.S. Cl. 324—36 **2 Claims**



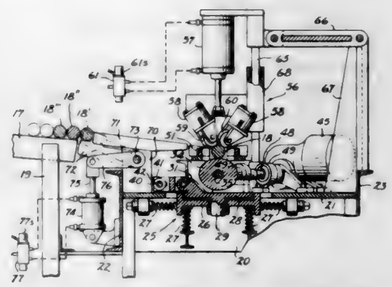
Paramagnetic fluid is supplied to a hollow toroid container and magnetized together with a separate non-magnetizable reference toroid. The difference of magnetic fluxes in the two toroids is detected by an inductance bridge circuit.

3,447,074

WORKPIECE INSPECTION APPARATUS IN WHICH SENSOR AND POWER-DRIVEN ROLLERS ARE MOUNTED ON YIELDABLE SUSPENSIONS

George W. Sower, Cleveland, and William C. Harmon, Chagrin Falls, Ohio, assignors to Republic Steel Corporation, Cleveland, Ohio, a corporation of New Jersey

Filed May 5, 1964, Ser. No. 365,130
Int. Cl. G01r *33/12;* **B65g** *13/02*
U.S. Cl. 324—37 **11 Claims**



A plurality of aligned floating propelling assemblies individually supported on resilient biasing structure propel elongated workpieces through an inspection station for defect detection by a floating probe. The propelling assemblies include skewed drive rollers that are angularly adjustable.

3,447,075

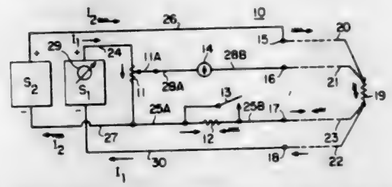
EQUAL CURRENTS POTENTIOMETER CIRCUITS FOR MEASUREMENTS OF RESISTANCES—PARTICULARLY TEMPERATURE-SENSITIVE RESISTANCES

Albert J. Williams, Jr., Philadelphia, and George C. Mergner, Glenside, Pa., assignors to Leeds & Northrup Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Mar. 29, 1967, Ser. No. 626,774
Int. Cl. G01r *27/02*
U.S. Cl. 324—62 **9 Claims**

Potentiometer-networks for the measurement of temperature sensitive four-terminal resistances with circuitry

having a pair of current loops, each of which loops includes the unknown resistance connectable in each loop through two different opposite terminals, and a balanceable loop including a detector and said unknown resist-



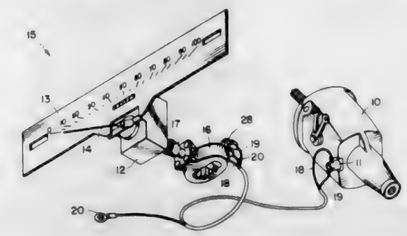
ance, said resistance being connectable in this last named loop through two terminals, each of which is common to a different current loop. Such an arrangement is provided to minimize lead resistance errors.

3,447,076

ELECTRIC SPEEDOMETER INCLUDING A STEPWISE ACTUATED PERMANENT-MAGNET MOTOR

Gianni A. Dotto, Dayton, Ohio, assignor to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware

Filed Mar. 14, 1966, Ser. No. 535,650
Int. Cl. G01r *11/02*
U.S. Cl. 324—70 **3 Claims**



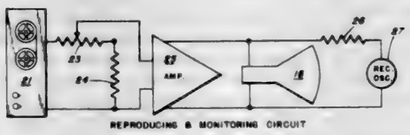
A rotary switch having contact arms is actuated by a lobed cam driven by a device whose speed is to be measured or controlled. A source of power is coupled through the rotary switch to stator coils of an electric motor which includes a rotor having a series of permanent-magnet poles, and which may also have a one-way clutch. The motor shaft may then be mechanically coupled to a speed indicating device for measuring or controlling the speed of the device which drives the rotary switch.

3,447,077

MULTIPLE MISSILE VELOCITY MEASURING APPARATUS

Thomas E. Loxley, Watervliet, N.Y., James L. Sloop, Dahlgren, Va., and Michael S. Wieland, Newark, Del., assignors to the United States of America as represented by the Secretary of the Navy

Filed July 21, 1966, Ser. No. 566,952
Int. Cl. G01r *11/02*
U.S. Cl. 324—70 **7 Claims**



A missile velocity measuring system comprising a screen and related timing circuitry which can register multiple impacts. The screen itself is formed by a laminate with a central insulating sheet and two metallic outer sheets to which potential is applied. When a missile pierces the screen the missile acts as an electrical jumper between the charged metallic sheets to produce a pulse. The pulse is fed to a timing mechanism which determines velocity of the missile.

3,447,078

ELECTRICAL PROBE FOR TESTING TRANSISTORS AND THE LIKE HAVING ROTATABLY SUPPORTED ACTUATOR FOR PLURAL PROBE TIPS

Murray N. Levy, Colmar, Pa., assignor to American Electronic Laboratories, Inc., Colmar, Pa., a corporation of Pennsylvania

Filed July 17, 1964, Ser. No. 383,296
Int. Cl. G01r *31/02;* **H01r** *13/22*
U.S. Cl. 324—72.5 **13 Claims**



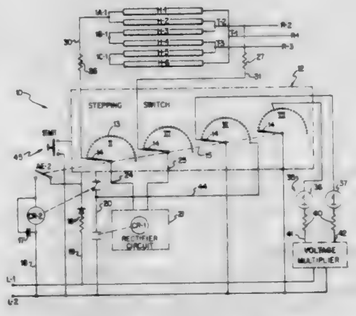
A test probe for transistors and the like including a hand held housing and three substantially parallel probe elements extending therefrom for contacting the device under test. A first control means comprising a cam actuator adjusts the lateral distance between the contacting ends of two of the probe elements, and a second control means comprising a rack and gear assembly adjustably extends the contacting end of the third probe element relative to the first two probe elements.

3,447,079

MONITORING CIRCUIT FOR SEQUENTIALLY TESTING HOT SIZING PRESS RESISTANCE HEATERS CONNECTED IN PAIRS DURING ENERGIZATION OF THE MATE HEATER

Stanley H. Durbin, Knoxville, Tenn., assignor to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware

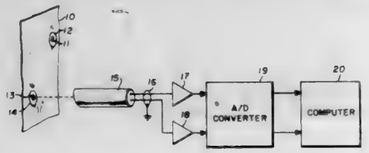
Filed June 17, 1965, Ser. No. 464,693
Int. Cl. G01r *15/12, 31/02;* **H05b** *3/02*
U.S. Cl. 324—73 **10 Claims**



A monitoring circuit for resistance heaters enclosed within a platen of a hot sizing press, wherein a plurality of heaters, two heaters connected in series and the series connected heaters mounted in a delta or Y configuration to a three-wire power source, are individually tested for an open condition by testing across the other series connected resistor by means of collector contacts driven by the shaft of a stepping switch. Each step of a bank of contacts associated with the stepping switch is connected across an individual heater, and the stepping switch will

stop stepping when an open heater is sensed, and a numerical counting device, advanced concurrently with the advancing stepping switch, will identifiy the individual heater detected to be open.

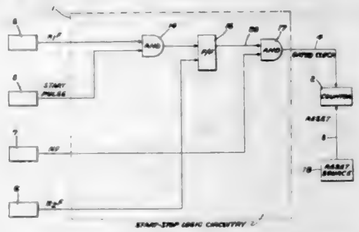
3,447,080
ELECTRICAL TESTING WITH COLOR RESPONSIVE DIGITAL ADDRESS
Glidden J. Barstow, San Diego, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Oct. 26, 1966, Ser. No. 590,150
Int. Cl. G01r *15/12*
U.S. Cl. 324—73 **5 Claims**



The present invention relates to a testing system for measuring an electrical quantity at a plurality of discrete locations and automatically identifying the location of the quantity. Human error in recording the magnitude and location of these quantities is virtually eliminated since the invention is connected to external circuitry for comparison purposes. A plurality of electrical connectors mounted on a test panel is each provided with a disc-shaped chip of colored material, the color of each chip being different than other chips on the panel. The invention, in addition to having a probe adapted to mate with each of the electrical connectors, contains a hooded light source and photo-cells sensitive to a particular color due to appropriate light filtering. Placing the probe in electrical contact with an electrical connector on the test board also causes the photo-cells to give a composite signal, the composition and magnitude of which is dependent on the hue and intensity of the light reflected from the colored chips. This composite signal, passed from the photo-cells, to an analog-to-digital converter, and to a computer, permits rapid identification of the particular test location. Because each disc is slightly different colored than the others a different composite signal indicative of an electrical connector's location will be produced. Thus, the invention frees a technician from the responsibility of recording each electrical connector output and its location to eliminate human error in the testing process.

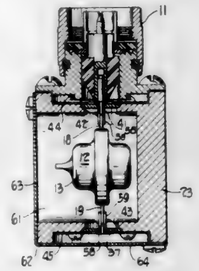
3,447,081
PHASE DETECTOR FOR HARMONICALLY RELATED SIGNALS
Rolf Gunnar Sommerud, Strommen, and Christian Fredrik Holmboe, Bekkestua, Norway, and James F. De Lorme, Irvington, N.J., assignors to International Telephone and Telegraph Corporation, a corporation of Delaware
Filed Aug. 19, 1966, Ser. No. 573,669
Int. Cl. G01n *25/00*
U.S. Cl. 324—85 **9 Claims**

The phase difference between first and second harmonically related signals is measured relative to a common harmonic by applying said first signal directly and coupling said second signal via a first AND circuit, to a bistable multivibrator whose output signal gates, via a second AND circuit, the transmission of a third harmonically related signal, having a higher frequency than said first and second signals, to a recycling counter. The reading of said counter, which is periodically reset, is a measure of phase difference. A signal coupled to said first gate initiates counting. In a second embodiment, said third



signal is coupled to said counter via a dividing circuit which also receives reset pulses in order to measure average phase difference.

3,447,082
THERMOCOUPLE MILLIWATTMETER
Henry J. Calderhead, deceased, late of Euclid, Ohio, by Catharine E. Calderhead, administratrix, Euclid, Ohio, and Philip F. Puljer, Parma, Ohio, assignors to Bird Electronic Corporation, a corporation of Ohio
Filed Mar. 8, 1965, Ser. No. 439,521
Int. Cl. G01r *5/26, 27/02*
U.S. Cl. 324—106 **6 Claims**



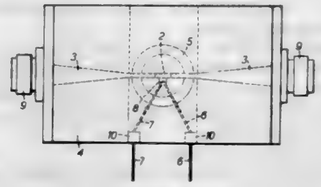
A coaxial termination for measuring radio frequency power includes a heater element supported at a first end by a disk resistor and at a second end by a disk resistor to provide wide band response characteristics. A thermocouple is provided adjacent the heater element to generate a current for operation of a meter.

3,447,083
ELECTRICAL POWER METERING DEVICE FOR INSERTION IN A TRANSMISSION LINE
Alfred Allan Luskow, St. Albans, England, assignor to Marconi Instruments Limited, London, England, a British company
Continuation-in-part of application Ser. No. 402,145, Oct. 7, 1964. This application Dec. 1, 1966, Ser. No. 598,301
Int. Cl. G01r *23/04, 25/02, 27/02*
U.S. Cl. 324—106 **7 Claims**

This invention relates to metering devices for monitoring or metering electrical power in the frequency range from 0 c./s. up to a frequency in the order of 1000 mc./s.

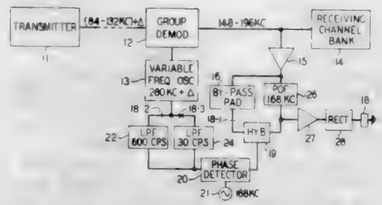
The disclosure relates to power metering devices in which the power to be metered is supplied to a thermal converter such as thermo-couple or thermistor which produces an E.M.F. when heated and which will accordingly produce an E.M.F. representative of said power. The power metering device is in the form of a balanced slab or strip transmission line having a central thin-walled tubular conductor with the thermal converter placed close to the tubular conductor in heat transfer relation thereto. The connection leads from the thermal converter are

passed between adjacent conductors on the strip transmission line to the exterior of the transmission line and lie in the median plane of the transmission line.



The thin-walled tubular conductor is disclosed as being in the form of a deposit upon an insulating carrier core which may be an insulating rod or an insulating tube and may be of skeleton form.

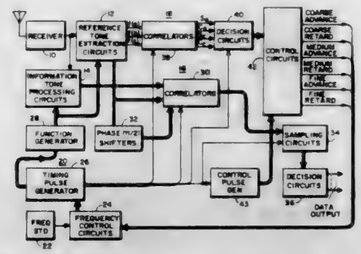
3,447,084
CORRECTION OF FREQUENCY SHIFT IN CARRIER SYSTEMS
Robert L. Haner, Andover, Mass., and Norman L. Major, Plaistow, N.H., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Jan. 3, 1966, Ser. No. 518,281
Int. Cl. H04b *1/68, 1/16*
U.S. Cl. 325—49 **2 Claims**



In order to eliminate the frequency error of a type-N repeatered line, the demodulating carrier at the final group demodulator is derived from a local voltage-controlled oscillator. The latter is controlled by a pair of phase-locked loops, one of which has a broad capture range on either side of one of the received channel carriers and the other of which is sharply tuned to the selected channel carrier frequency and has a high discrimination against nearby frequencies. A switching control circuit selects the appropriate loop.

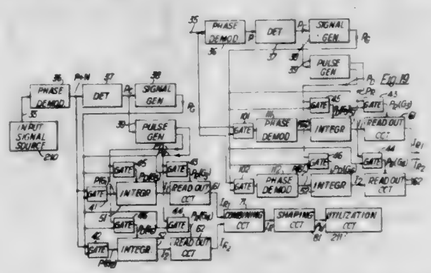
3,447,085
SYNCHRONIZATION OF RECEIVER TIME BASE IN PLURAL FREQUENCY DIFFERENTIAL PHASE SHIFT SYSTEM
Thijs De Haas, Martin B. Gray, and Joseph P. Welsh, Rochester, N.Y., assignors to General Dynamics Corporation, a corporation of Delaware
Filed Jan. 4, 1965, Ser. No. 423,192
Int. Cl. H04b *1/16;* **H04l** *7/04, 27/24*
U.S. Cl. 325—320 **18 Claims**

A receiving terminal for a frequency differential phase shift keyed data communication system is disclosed. The terminal includes a channel for synchronizing the receiver time base with the time base of the signal elements which are received after transmission across a radio link wherein they may be subjected to phase shift or differential delay due to the propagation characteristics of the link. At the receiving terminal, a function and timing generator produces signals related in frequency to the frequency of the receiver time base. These locally generated signals and the received information tones are combined with each other and correlated so as to derive output signals which vary in accordance with the phase difference between the received signal elements and the receiver time base. These output signals are applied to decision circuits which produce command signals. The command signals are used to control the frequency of the receiver time



base by effectively adding or subtracting pulses from a high frequency pulse train which is derived from a frequency standard, thereby producing a receiver time base whose phase accurately corresponds to the signal element period.

3,447,086
RECTANGULAR-CODE REGENERATOR
Sukehiro Ito and Seijiro Yokoyama, Tokyo, Japan, assignors to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan
Filed July 22, 1964, Ser. No. 384,493
Claims priority, application Japan, July 29, 1963, 38/39,987
Int. Cl. H04b *1/10;* **H04l** *15/24*
U.S. Cl. 325—323 **12 Claims**

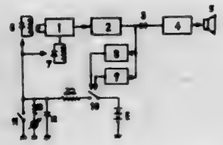


A rectangular code pulse regenerator for translating an input signal two-phase modulated with a modulating train of two-phase rectangular binary-code pulses or an input signal four-phase modulated with two modulating trains of different two-phase rectangular binary-code pulses into an output signal comprising a replica first and third binary-code pulse train or into an output signal comprising a replica first and third phase rectangular binary-code pulse train and a replica second and fourth phase rectangular binary-code pulse train.

3,447,087
AUTOTUNING RADIO RECEIVER WITH FREQUENCY HOLDING CIRCUIT
Tsuneo Takezaki, Neyagawa-shi, Ekiji Kuroda, Moriguchi-shi, and Kiyotake Fukui, Suita-shi, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Osaka, Japan
Filed June 2, 1966, Ser. No. 554,775
Claims priority, application Japan, June 2, 1965, 40/33,263; June 17, 1965, 40/36,706, 40/36,709, 40/36,710
Int. Cl. H04b *1/26*
U.S. Cl. 325—422 **9 Claims**

An autotuning radio receiver. The receiver has a radio receiving circuit, a sweep controlling circuit, a hold controlling circuit, a sweep voltage supplying circuit, a source

of capacitor current, a charge controlling switch means and voltage variable capacitance diodes. The voltage variable capacitance diodes are used for autotuning, and during a period when a received signal is interrupted, a tuning of the frequency is held by stopping a voltage sweep at



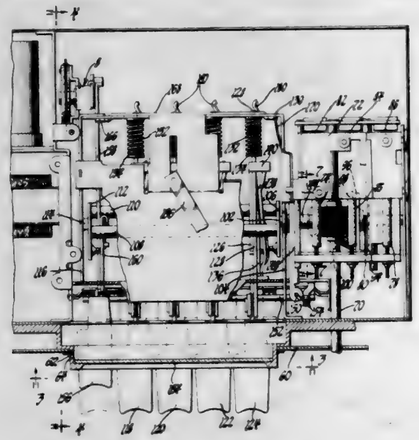
the voltage corresponding to the received frequency. Loss of the stored electric charge in a capacitor in said sweep voltage supplying circuit is compensated by means of said hold controlling circuit and said charge controlling switch means.

3,447,088

COMBINATION TUNER FOR SHORTWAVE TWO-WAY RADIO AND BROADCAST RECEIVER

James H. Guyton, Phillip A. Lutz, and Edward G. Stedry, Kokomo, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Jan. 18, 1967, Ser. No. 610,123
Int. Cl. H04b *1/06, 1/38;* **H03j** *5/32*
U.S. Cl. 325—458 **5 Claims**



A band switching and push button tuning means for a radio broadcast receiver and a two-way emergency transceiver in which depression of certain of the push buttons indexes the radio broadcast receiver to certain stations and the depression of another push button switches out broadcast receiver operations, locks the tuner in a given position, and automatically switches in the two-way transceiver for operation in a different band.

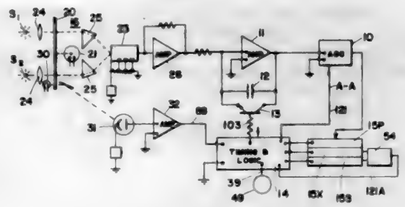
3,447,089

HIGH-SPEED MEASURING SYSTEMS AND METHODS

Gerard M. Foley, Ambler, Pa., assignor to Leeds & Northrup Company, a corporation of Pennsylvania

Filed Feb. 18, 1965, Ser. No. 433,678
Int. Cl. H03k *17/00, 5/00*
U.S. Cl. 328—151 **5 Claims**

1. A measuring system comprising:
integrator means,
periodic means for applying to said integrator means samples from two sources, unknown and reference, which are to be compared,
storage means to store the value of the integration corresponding with one of the sampled sources,
comparator means effective to compare the output of storage means with the most recent value of the output of said comparator means corresponding with the other sampled source,
an analog-to-digital converter including as said storage means a register in which the digital counts of the analog values of the unknown and the reference are alternately temporarily stored in the successive inter sampling intervals,
timing and logic circuitry,
two registers in addition to said converter register,
pulse-producing means operating in synchronism with said periodic means to apply to said timing and logic circuitry pairs of pulse trains respectively corresponding with the sampling periods of the unknown and the reference and an intervening transfer pulse,



said circuitry including means responsive to said transfer pulse for controlling transfer of digital counts successively stored in said converter register alternately to said two additional registers,
said circuitry until a match of the compared outputs is attained, deriving from each of said pulse trains (a) a start signal for initiating a cycle of the converter, (b) clock pulses for advancing the digital count in the converter register until such count closely approximates the analog value of the sample then stored in the integrator means, and (c) a pulse for resetting the integrator means to receive the next sample,
said circuitry when said match is attained, receiving from said comparator means an inhibit signal precluding it from deriving from the next pulse train the start and clock pulses for the converter and the reset pulse for the integrator means.

3,447,090

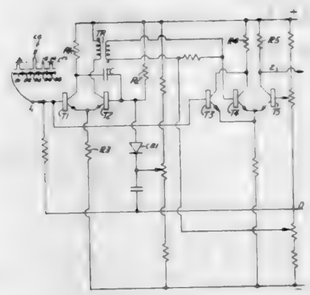
DIGIT PULSE RETIMING ARRANGEMENT FOR A BINARY CODE GENERATOR

John Clifford Price, Aldwych, London, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 8, 1965, Ser. No. 494,031
Claims priority, application Great Britain, Feb. 9, 1965, 5,552/65
Int. Cl. H03k *5/04;* **H03b** *1/04*
U.S. Cl. 328—164 **2 Claims**

In an equilibrium type coder the coding elements normally come to an equilibrium state one after another. Occasionally two adjacent coding elements come to the equilibrium state during the same digit position giving rise to an oversized amplitude pulse in a first digit position followed by a blank in the immediately following digit position rather than two normal amplitude pulses in the adjacent digit positions. This error is overcome by operating on the serial code group by a monostable circuit having a triggering level responsive to only the oversized amplitude pulse and a delay equal to the duration of a digit

position and a pulse generator responsive to both the oversized amplitude pulse and the delayed output of the mono-



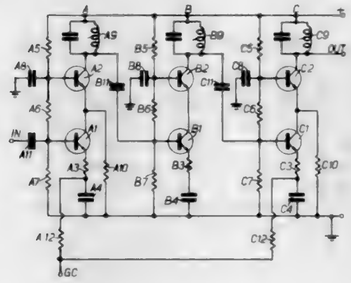
stable circuit to produce the desired two normal amplitude pulses in the adjacent digit positions.

3,447,091

VARIABLE GAIN WIDE BAND BANDPASS AMPLIFIER

Frank Colston Bennett, Essex, England, assignor to The Marconi Company Limited, London, England, a British company

Filed Nov. 21, 1966, Ser. No. 595,668
Claims priority, application Great Britain, Jan. 17, 1966, 2,056/66
Int. Cl. H03f *3/04, 3/42*
U.S. Cl. 330—18 **3 Claims**



A variable gain wide band bandpass amplifier including at least one variable gain stage has a pair of transistors in cascode connection and coupled to one another by direct current coupling and a resistor in a compensating direct current path extending from the coupling circuit to a point of anchored potential which provides a desired degree of stabilization of the current through the second of the two transistors of said stage.

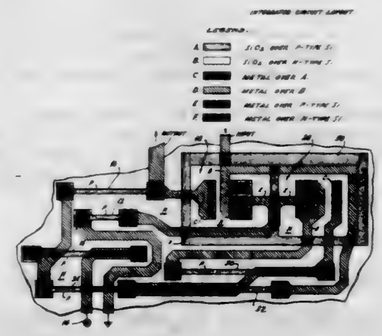
3,447,092

TRANSISTOR AMPLIFYING CIRCUIT HAVING HIGH INPUT IMPEDANCE AND TEMPERATURE-STABILIZED OUTPUT POTENTIAL

Leander H. Hoke, Jr., Southampton, Pa., assignor to Philco-Ford Corporation, Philadelphia, Pa., a corporation of Delaware

Filed Nov. 9, 1966, Ser. No. 593,047
Int. Cl. H03f *3/04*
U.S. Cl. 330—24 **6 Claims**

Amplifying circuit having high input impedance and temperature-stabilized output potential using transistor amplifying stage with emitter resistor and positive feedback circuit connected between emitter and base. Feedback circuit includes second transistor having emitter con-



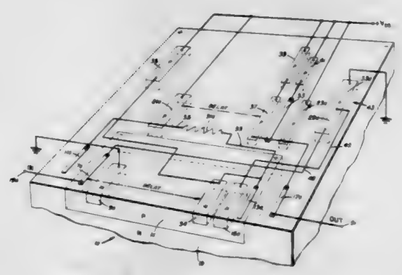
nected to emitter of first transistor and conventionally-biased collector having equal-valued resistors connected to bases of first and second transistors, respectively.

3,447,093

ADDITIVE SEMICONDUCTOR AMPLIFIER

Vasil Uzunoglu, Southampton, Pa., assignor to the United States of America as represented by the Secretary of the Navy

Filed Jan. 31, 1967, Ser. No. 613,045
Int. Cl. H01l *19/00, 3/00;* **H03g** *3/30*
U.S. Cl. 330—25 **5 Claims**



The subject invention essentially encompasses two main concepts, namely, the use of a double diffused integrated structure, incorporating series to shunt feedback, and the application of semiconductor transversal amplification to such a structure. An embodiment of the invention consists of an amplifier having two transistors connected in cascade. Series to shunt feedback is provided from the emitter of one to the base of the preceding transistor. One delay network is connected between the collectors of the transistors and another delay network is connected between the bases of the transistors. All the amplifier components are integrated within a semiconductor clip.

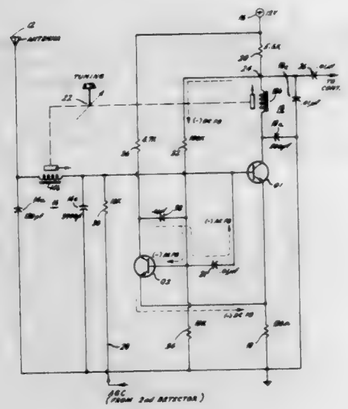
Semiconductor transversal amplification may be considered analogous to the familiar distributed type of amplification used to improve the gain-bandwidth product of amplifiers. The basic idea is to use a delay network (preferably lossless) having equally spaced taps, wherein the delay between any two successive taps is equal to τ seconds. At each tap a small portion of the signal is extracted and fed to a separate amplifier which has a phase shift corresponding to τ seconds. The outputs from the

separate amplifiers are then added together to form the effective output of the system.

In the present invention each of said amplifiers comprises a single transistor and series to shunt feedback is provided, via a resistive path, from the emitter of one such transistor to the base of a transistor preceeding it. Additionally, said delay network comprises plural distinct delay networks, one of which is connected between the collectors of two adjacent transistors and another of which is connected between the bases of said two adjacent transistors.

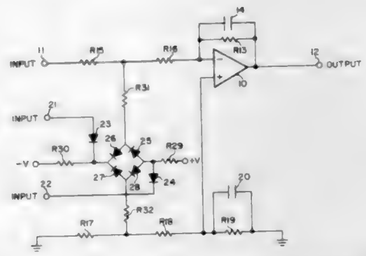
It should be emphasized that all of the components of the instant invention, including the delay networks, the transistors and the resistive paths, are integrated within a single semiconductor chip and that a significantly improved gain-bandwidth product is effected.

3,447,094
ULTRALINEAR GAIN CONTROLLABLE AMPLIFIER
John F. Beres, Southampton, Pa., assignor to Philco-Ford Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Mar. 24, 1967, Ser. No. 625,846
Int. Cl. H03g *3/00, 3/30*
U.S. Cl. 330—29 **8 Claims**



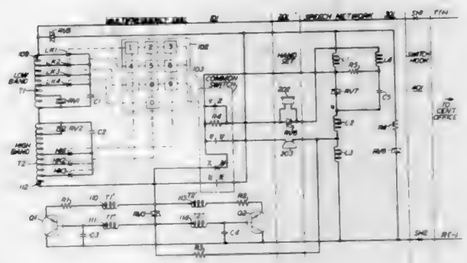
Gain-controlled transistor amplifying stage comprising a circuit for limiting the voltage of input signals to the amplifying stage and for accelerating reduction of its gain by an automatic gain control (AGC) voltage, thereby to eliminate cross modulation of strong input signals by such stage. As the amplitude of an input signal to the amplifying stage increases, a correspondingly increasing AGC voltage supplied to the amplifying transistor of the stage reduces the gain of said transistor and causes a direct output voltage of the stage to change. This changed direct output voltage turns on a normally cut-off control transistor. The emitters of both the amplifying and control transistors are connected to the same emitter resistor, and therefore the turn-on of the control transistor produces a voltage drop across this emitter resistor in addition to that produced by the emitter current of the amplifying transistor. This additional voltage drop further reduces the gain of the amplifying transistor. The input circuit of the control transistor, connected in shunt with that of the amplifying transistor, receives negative feedback of the input signal. As a result the input impedance of the control transistor decreases as it is turned on, thereby by-passing from the input of the amplifying transistor an increasingly large portion of the input signal.

3,447,095
SINGLE-SWITCH GAIN CHANGER
Robert W. McMillan, Orlando, Fla., assignor to Martin-Marietta Corporation, New York, N.Y., a corporation of Maryland
Filed Dec. 23, 1966, Ser. No. 604,269
Int. Cl. H03f *1/30*
U.S. Cl. 330—144 **9 Claims**



This invention involves a circuit for varying the gain of a differential amplifier using a single electronic switch. The gain is varied by changing the impedance of the input circuit by intermittently switching an impedance between the differential inputs of the amplifier.
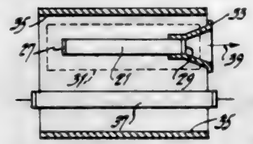
3,447,096
MULTIFREQUENCY SIGNAL GENERATOR
James L. Fischer, Carmel, and Willard E. Hostetler, Indianapolis, Ind., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 17, 1965, Ser. No. 480,273
Int. Cl. H03b *19/00, 1/04*
U.S. Cl. 331—49 **2 Claims**



In a multifrequency signal generator frequency pulling is avoided by employing a separate transistor oscillator for each of two signal bands. Spurious common frequency signal bursts generated by the two oscillators are suppressed by providing means for ensuring phase opposition between such spurious signals.

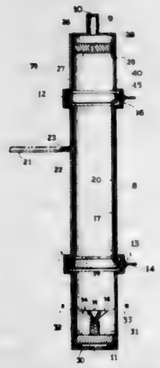
3,447,097
LUMINESCENT MATERIALS AND APPARATUS FOR GENERATING COHERENT RADIATION
Zoltan J. Kiss, Trenton, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Continuation-in-part of abandoned application Ser. No. 197,775, May 25, 1962. This application June 28, 1965, Ser. No. 467,393
Int. Cl. H01s *3/14*
U.S. Cl. 331—94.5 **9 Claims**

Luminescent material consisting essentially of an alkaline earth halide, such as calcium fluoride, containing 10^{-6} to 10^{-1} mols divalent dysprosium per mol of halide. A laser element comprised of a single crystal body of this composition having two opposed mirror surfaces thereon. A laser apparatus comprised of a laser element, a source



of non-coherent radiation for exciting the element, and means for deriving coherent light from the element.

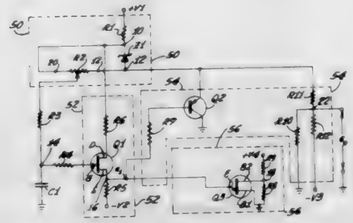
3,447,098
GAS LASER TUBE SYSTEM
Edwin E. Eckberg, P.O. Box 331, 391 Davis Road, Bedford, Mass. 01730
Filed Feb. 8, 1966, Ser. No. 528,332
Int. Cl. H01s *3/22*
U.S. Cl. 331—94.5 **1 Claim**



A new gas laser tube system with self-contained optics which are self-aligning is described. The system accommodates severe thermal or mechanical stresses which do not disrupt the laser beam. Also contained are the gas excitation electrodes and their respective glass-to-metal sealed feedthrough terminals. The latter protrude through the laser envelope for electrical power input connection. Either the visible (6,328 AU) or the infrared can be produced. One modification allows low voltage operation of the device. This new laser design includes considerations which embrace: scientific glassblowing; optical surface grinding and polishing; geometric-optics; thin-film depositions; and, ultrahigh purification and evacuation. Power output data are not complete but the new laser system compares well with the output of either plano-to-plano, or confocal, laser tube design. A so-called corner-cube ("Hollowed Corner of a Cube") is used at one or both ends of the new design, inside the envelope. Borosilica glass is used entirely, excepting in those cases of the infrared type, the latter necessitating a suitable transmitting material for the beam exit (window).

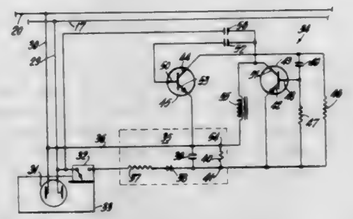
3,447,099
SWEEP GENERATOR HAVING A FIELD-EFFECT TRANSISTOR BETWEEN THE TIMING AND DISCHARGE CIRCUITS
William Paul Lockshaw, Canoga Park, Calif, assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 2, 1968, Ser. No. 702,673
Int. Cl. H03k *3/26*
U.S. Cl. 331—111 **11 Claims**

The circuit of this invention uses a resistor-capacitor timing circuit having any desired time constant. A field-effect transistor isolation circuit is interposed between the resistor-capacitor junction and a unijunction transistor discharge circuit to prevent the unijunction transistor from applying a non-linear load to the capacitor, thereby distorting the linearity of the produced sawtooth sweep



voltage. Further, a follower circuit is connected and controlled by the voltage on the emitter of the uni-junction device to control the current source which supplies current to the timing capacitor so that the current source delivers a substantially constant output current.

3,447,100
ALARM ACTUATED CARRIER-CURRENT TRANSMITTER
Lance L. Henriques, New York, N.Y., assignor to Davis Foreman, Bronx, N.Y.
Original application June 9, 1964, Ser. No. 373,728. Divided and this application June 6, 1966, Ser. No. 570,104
Int. Cl. H03k *3/26*
U.S. Cl. 331—111 **1 Claim**

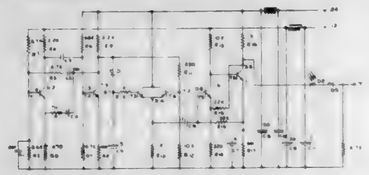


A carrier-current transmitter for applying high-frequency signals (e.g. induced by a local alarm) to a pair of power lines for transmission to a remote station for inducing corrective action, the transmitter including a PNP and an NPN transistor and a rectifying diode connected to one of the power lines to form the positive supply terminal while the other line directly forms the other supply terminal; the bases and collectors of the transistors are cross-coupled by feedback capacitors (**49**, **52**) while the emitters of the PNP transistor (**43**) and the NPN transistor (**45**) are directly connected to the positive and negative supply terminal. The capacitor (**56**) connects the collector output of the PNP transistor directly to the power line behind the rectifier while a choke ties the collector to the other power line.

3,447,101
HALF WAVE PHOTO MODULATOR
Charles Gunn-Russell, London, England, assignor to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
Filed Oct. 29, 1965, Ser. No. 505,681
Claims priority, application Great Britain, Oct. 29, 1964, 44,208/64
Int. Cl. H03c *1/14*
U.S. Cl. 332—3 **3 Claims**

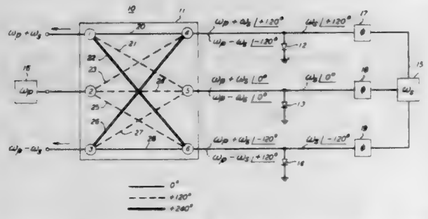
A modulated output signal is obtained from a photo transducer by biasing it with a rectified half wave carrier

signal to produce pulsed output signals modulated as a function of light on the transducer. A small mark to space ratio using rounded pulses is found advantageous in photo



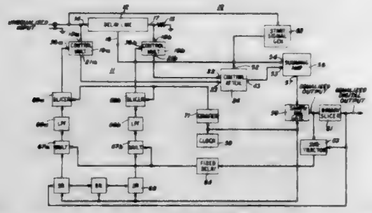
transducer operation. A photo diode is coupled in opposition with a low capacitiy diode to improve output signal characteristics.

3,447,102
MICROWAVE FREQUENCY CONVERTERS COMPRISING MULTI-PORT DIRECTIONAL COUPLERS
James W. Gewartowski, Chatham, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed May 6, 1966, Ser. No. 548,310
Int. Cl. H03c *3/20*
U.S. Cl. 332—30 **13 Claims**



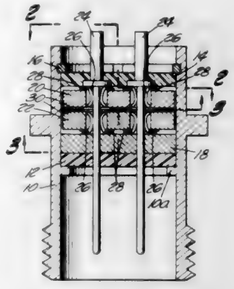
A frequency converter is disclosed comprising a multiport directional coupler that inherently separates generated upper and lower sideband frequencies without using filters. The signal is applied at selected phase angles to several substantially identical nonlinear elements, each connected to one of the ports of the coupler; and pump energy is also applied to these nonlinear elements. With the proper combination of phase shifts, the resulting signals are then combined so that only upper sideband energy appears at one port of the coupler and only lower sideband energy at another port.

3,447,103
SYSTEM FOR INITIALLY ADJUSTING A SIGNAL EQUALIZING DEVICE
Erich Port, Red Bank, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Dec. 19, 1966, Ser. No. 602,936
Int. Cl. H03h *5/12*; **H03k** *3/26*
U.S. Cl. 333—28 **7 Claims**



Two adaptively adjusted time domain equalizers are disclosed in which all but one of a plurality of signals added together to provide an equalized signal are initially attenuated to inhibit arbitrary equalization signals. As adaptive equalization proceeds the attenuation factor is decreased to a steady state value.

3,447,104
ELECTRICAL CONNECTOR FILTER COMPRISING AT LEAST ONE ELECTRICALLY CONDUCTIVE COATED DIELECTRIC DISC AND A FERROMAGNETIC DISC
Ferdinand William Schor, Altadena, Calif., assignor to International Telephone and Telegraph Corporation, a corporation of Delaware
Filed June 6, 1966, Ser. No. 555,397
Int. Cl. H01g *7/06*
U.S. Cl. 333—79 **6 Claims**



A filter assembly includes a capacitor means employing a disc made of high dielectric material and having a plurality of axially extending apertures for receiving connector terminals. One side of the disc is formed with spaced areas of an electrically conductive coating surrounding each of the apertures. Each terminal extending through the apertures is electrically connected by suitable means to the surrounding coating. The opposite axial face of the disc is provided with a second electrically conductive coating over its entire face except the areas immediately surrounding each of the apertures so that the terminals extending therethrough will not be electrically connected to the second coating. This latter coating also extends onto the outer annular surface of the disc so that the coating may be grounded to a casing enclosing the connector and filter assembly. Such construction provides a single capacitor for each terminal. If additional capacitors are desired, similar discs may be added. If two discs are employed, the grounded coatings may be placed in contact with each other. To provide inductance for the filter, a disc made of ferromagnetic material is utilized with a plurality of apertures therein for receiving the terminals.

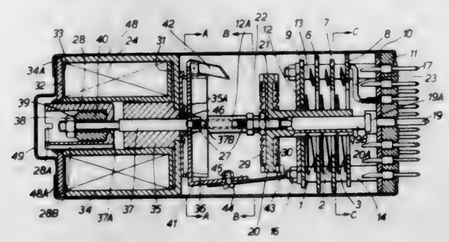
3,447,105
POLARIZED MAGNETIC CABLE SWITCH PROGRAMMING SYSTEM AND APPARATUS
Bernard Edward Shlesinger, Jr., 906 Bruce Lane, Annandale, Va. 22003
Filed Sept. 21, 1967, Ser. No. 669,614
Int. Cl. H01h *51/22*
U.S. Cl. 335—79 **30 Claims**



A magnetic programming system comprising an electrical component support block, a nonmagnetic carrier supported by the block and movable with respect thereto,

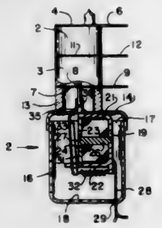
means for moving the carrier, the block including magnetic field responsive sensing means, the carrier including support means specifically positioned with respect thereto, magnetic field responsive transmitting means carried by support means, means for selectively inducing in the transmitting means one of at least two directionally different polarities, the sensing means directionally oriented to operate in a specific manner only one of the polarities when the transmitting means is moved into a position detectable by the sensing means so as to thus operate a circuit.

3,447,106
ELECTROMAGNETICALLY-OPERATED RATCHET DRIVEN UNISELECTOR
Khaja Mohiuddin Jameel, London, England, assignor to Associated Electrical Industries Limited, London, England, a British company
Filed Dec. 16, 1966, Ser. No. 602,354
Claims priority, application Great Britain, Jan. 25, 1966, 3,314/66
Int. Cl. H01h *51/02, 51/08*
U.S. Cl. 335—140 **8 Claims**



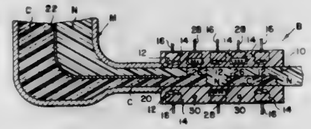
A miniature uniselector adapted for low-power operation and for performing light-current switching. The uniselector has a rotatable wiper assembly which is ratchet-driven about an axis by means of a solenoid which has a magnetic plunger which is displaceable along the axis. A pawl carried on the magnetic plunger and a cooperating ratchet wheel secured to the wiper assembly act to convert axial displacement of the magnetic plunger into rotary movement of the wiper assembly.

3,447,107
GROUND-ISOLATED ELECTROMAGNETICALLY OPERATED VACUUM RELAY
Roger L. Deal and Robert W. Hansen, San Jose, Calif., assignors to Jennings Radio Manufacturing Corporation, San Jose, Calif., a corporation of Delaware
Filed Dec. 2, 1965, Ser. No. 511,106
Int. Cl. H01h *1/66, 51/00*
U.S. Cl. 335—151 **8 Claims**



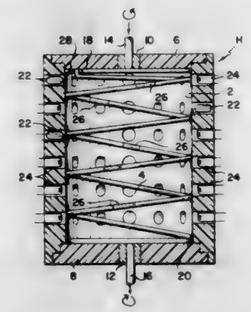
1. An electromagnetically actuated relay comprising:
(a) a vacuum switch including an evacuated envelope enclosing fixed and movable contacts and an actuator rod extending therefrom movable to make or break a circuit through the switch, a portion of said actuator rod within the envelope constitutes said movable contact,
(b) an actuating assembly mounted on said evacuated switch envelope and including a magnetically responsive spring-pressed armature connected to the actuator rod to effect movement thereof to make or break a circuit through the switch, and
(c) dielectric means interposed between the actuating assembly and the switch to electrically isolate one from the other.

3,447,108
MAGNETIC SWITCHING MECHANISM AND METHOD OF MANUFACTURE AND OPERATION UTILIZING INJECTION MOLDING TECHNIQUES
Bernard Edward Shlesinger, Jr., 3906 Bruce Lane, Annandale, Va. 22003
Continuation-in-part of application Ser. No. 580,059, Sept. 16, 1966, now Patent No. 3,391,261. This application Feb. 15, 1968, Ser. No. 705,759
Int. Cl. H01h *9/54*
U.S. Cl. 335—205 **14 Claims**



An electrical switching method or the like for operating electrical circuit means comprising: injecting in a programmed period of time a controlled and metered amount of flowable magnetic plastic material into a block along a predetermined path having magnetic field sensitive circuit operating means associated therewith; injecting in a programmed period of time a controlled and metered amount of flowable non-magnetic plastic material into said block along said predetermined path so as to form an interface with said magnetic material; moving said materials through said block and past said circuit operating means by controlled pressure means; thereby to operate said electrical circuit means for a predetermined period of time.

3,447,109
MAGNETIC PROGRAMMING SWITCHES
Bernard Edward Shlesinger, Jr., 3906 Bruce Lane, Annandale, Va. 22003
Filed Apr. 12, 1968, Ser. No. 720,899
Int. Cl. H01h *9/02, 9/54*
U.S. Cl. 335—205 **38 Claims**



A magnetic programming switch for electrical circuitry comprising a housing; a series of magnetic devices mounted in the wall of said housing; a flexible, resilient, expandable and contractable member in wiping engage-

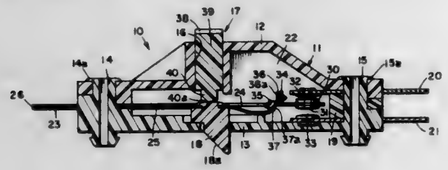
ment with or close proximity to an inside wall of said housing; said member including at least one magnetic material element carried thereby; and means for contracting and expanding said member whereby movement of said member from one position to another moves said element from one position to another thereby to cause changes in operation of the electrical circuitry.

3,447,110

MAGNETIC SNAP ACTION SWITCH

Gianni A. Dotto, Dayton, Ohio, assignor to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware

Filed Dec. 23, 1966, Ser. No. 604,426
Int. Cl. H01h *5/02*
U.S. Cl. 335—207 **15 Claims**



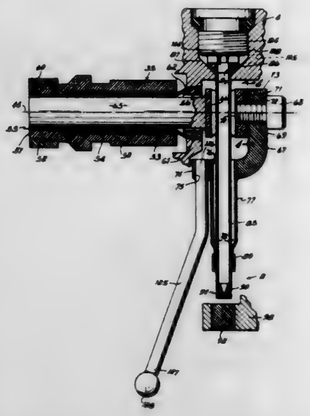
A pair of magnets, one each disposed on a contact blade and an actuator blade of a double throw switch are constructed and arranged such that they repel each other as the magnet on the actuator blade is reciprocated past the magnet on the contact blade.

3,447,111

SERVOVALVE CONSTRUCTION

James L. Coakley, Camarillo, and Charles A. Kubilos, Oxnard, Calif., assignors to Abex Corporation, a corporation of Delaware

Original application Mar. 1, 1966, Ser. No. 530,916. Divided and this application Aug. 25, 1967, Ser. No. 671,906
Int. Cl. H01f *7/00, 7/08;* **H02k** *33/00*
U.S. Cl. 335—230 **7 Claims**



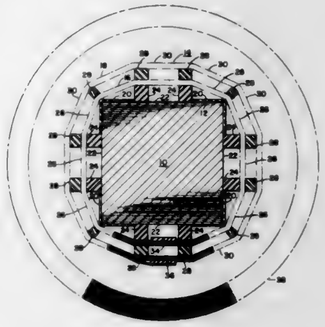
A torque motor having its armature mounted to a torsion member which is fixed to the armature at one point and fixed to a base at a second point. The torsion member is twisted axially by armature rotation. The armature operates a shaft or driver which is connected, at a position spaced from the connection of the armature to the torsion member, to transversely swingable output movement means. The output movement means are angularly disposed with respect to the shaft and are connected between the base and the shaft, and include a flexible portion between the connections to the base and the shaft.

3,447,112

AIR COOLED TRANSFORMER

Alvin Y. Broverman and Garlington C. Wilburn, Sharpsville, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Nov. 16, 1967, Ser. No. 683,532
Int. Cl. H01f *27/10, 27/30, 27/28*
U.S. Cl. 336—60 **7 Claims**



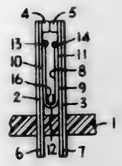
An air cooled power transformer having concentric high and low voltage windings surrounding a square or rectangular laminated core. The outside coil is circular in cross-section and the inner concentric windings are polygonal in cross-section. Ample air space is provided between the inner winding section and the core and between the winding sections to permit circulation of air for cooling and to provide adequate insulation, using a minimum of solid insulation, to prevent overstressing the air in the air space to a potential high enough to cause corona to start. The inner winding sections are wound from sheet conductor and the outer winding may be wound from sheet conductor or conventional insulated round or rectangular strand conductor.

3,447,113

POSITIVE-ACTING LOWER POWER THERMALLY-RESPONSIVE BIMETALLIC SWITCH

Arne Jensen, Havnbjerg, Als, Denmark, assignor to Danfoss A/S, Nordborg, Denmark, a company of Denmark

Filed Dec. 6, 1966, Ser. No. 599,484
Claims priority, application Germany, Dec. 7, 1965, D 48,841
Int. Cl. H01h *37/52, 61/01*
U.S. Cl. 337—1 **5 Claims**



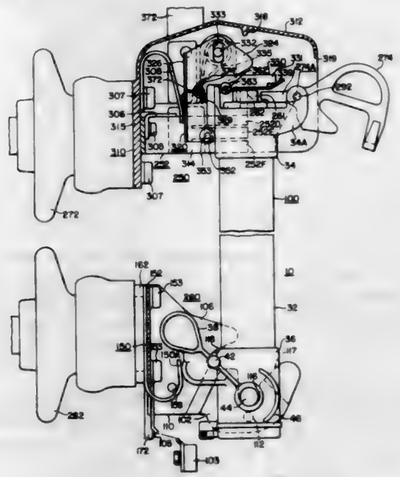
A compact, sensitive and positive acting thermally-responsive switch having bimetallic contacts normally closed. A flexible resistive film supported on a flexible insulating strip, is positioned between the two bimetallic strip contacts to maintain the open position of the bimetallic contacts, and prevent intermittent closing thereof, with the application of low power.

3,447,114

DROPOUT FUSE STRUCTURE

Russell E. Frink and Clayton T. Walker, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Aug. 24, 1967, Ser. No. 663,020
Int. Cl. H01h *71/20*
U.S. Cl. 337—171 **7 Claims**



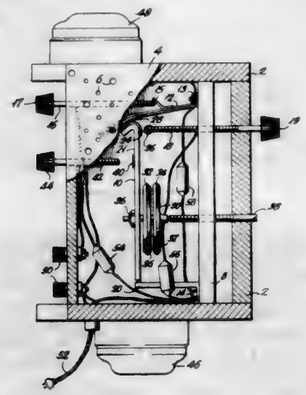
A pivotally mounted fuse holder having fusible means disposed therein is normally latched in a closed circuit condition with a pair of spaced, relatively stationary contacts. Upon fusion of the fusible means, a movable member in the fuse holder actuates a latching means to release the fuse holder and to move it to a dropout position in which an air gap is interposed between the stationary contacts.

3,447,115

MULTIPURPOSE THERMAL AUTOMATIC CONTROLLER WITH SINGLE THERMOMOTIVE ELEMENT

Tin Hwai Lai, 46 Kuangzu Road, Wuzu Shiang Taichung Hsien, Taiwan, China

Filed Oct. 12, 1966, Ser. No. 586,205
Int. Cl. H01h *37/36, 37/38*
U.S. Cl. 337—309 **4 Claims**



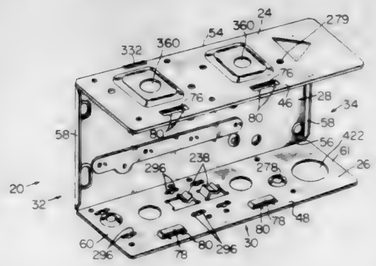
1. A temperature responsive automatic controller unit adapted to complete one of a plurality of circuits for controlling the operation of appliances, said unit comprising: a mounting means, a movable contact member having one end pivotally supported by said mounting means and a movable free end, said free end of said movable contact member having a plurality of contacts, a plurality of fixed contact members attached to said mounting means, means for adjusting each of said fixed contacts to operate at various temperature levels, each one of said fixed contact members being adapted to complete an electrical circuit with one of said contacts on said movable contact member and an expansible bellows unit filled with thermally responsive material, said bellows unit being mounted solely on said movable contact member whereby expansion and contraction of said material within said bellows unit in response to changes in temperature causes movement of said movable contact member with respect to said fixed contact members.

3,447,116

PRESSURE OR TEMPERATURE REGULATOR

Arthur L. Good, Elkhart, Ind., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

Filed Dec. 6, 1966, Ser. No. 599,515
Int. Cl. H01h *37/32, 37/36*
U.S. Cl. 337—327 **25 Claims**



A regulator may be responsive to pressure and/or temperatures produced by the operation of a refrigeration system. The regulator has a support frame capable of receiving any of a plurality of components to produce a variety of regulators. The frame may have a telescoping cover. The components include an L-shaped rocker arm having a vertical arm lever and a horizontal arm lever. The vertical arm lever actuates a shuttle which, in turn, actuates a snap switch. A negating spring downwardly presses an upper part of the vertical arm lever at a varying slight angle to negative the spring rate of the range spring which downwardly pushes on the horizontal arm lever. Such negation is in accordance with the sine of the slight angle.

3,447,117

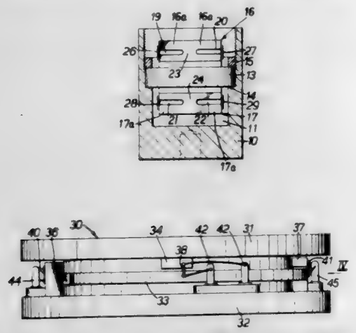
TRANSDUCING DEVICES

Frederick E. Duffield, New Denham, England, assignor to Ether Engineering Limited, formerly called: Ether Langham Thompson Limited

Filed Apr. 29, 1966, Ser. No. 546,247
Claims priority, application Great Britain, Apr. 29, 1965, 18,063/65
Int. Cl. G01b *7/16*
U.S. Cl. 338—6 **4 Claims**

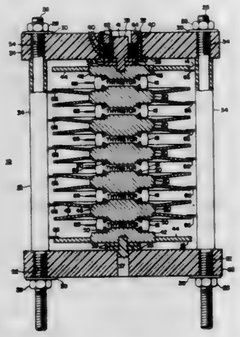
Transducing means for producing an electrical signal as a function of a force applied to a transducer. In one embodiment, a flexure member is mounted to define a gap relative to a fixed support, the extent of cantilever bending effected by the application of acceleration forces to

the transducer being measured by a semi-conductive piezo-resistive element. In another embodiment, load cell means



are provided in which the strain applied to a support is measured by the piezo-resistive element.

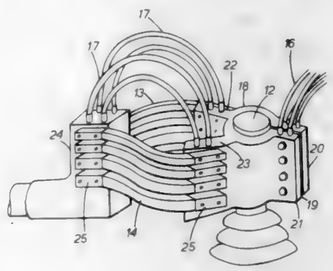
3,447,118
STACKING MODULE FOR FLAT PACKAGED ELECTRICAL DEVICES
Herbert E. Ferree, Greensburg, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 16, 1966, Ser. No. 572,842
Int. Cl. H01c *7/12*
U.S. Cl. 338—21 **5 Claims**



A versatile stacking module for flat packaged semiconductor devices which has a readily and accurately adjustable resilient force means to retain the devices and thermally and electrically conductive members in a close conductive relationship with each other. The devices and members are stacked between opposed end brackets spaced apart by hollow spacers. The thermally and electrically conductive members have at least one pedestal portion to engage and centrally locate the adjacent semiconductor device thereon.

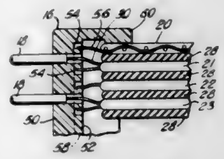
3,447,119
ELECTRICAL TERMINAL CLAMPS
James Goodall, Sale, Cheshire, England, assignor to Associated Electrical Industries Limited, London, England, a British company
Filed Oct. 30, 1967, Ser. No. 678,963
Claims priority, application Great Britain, Nov. 9, 1966, 50,259/66
Int. Cl. H01r *13/00, 7/26*
U.S. Cl. 339—112 **4 Claims**

A high voltage terminal clamp for carrying heavy currents comprises an annular portion for surrounding a terminal post which is formed with gaps and wing portions clamped together to cause the clamp to grip a terminal post and ducting extends through the two portions of the clamp in parallel and is coupled through insulating



ducting to points away from the terminal so that liquid coolant may be circulated through the ducting to cool the clamp without the risk of causing damage through short circuits.

3,447,120
WOVEN HIGH-FREQUENCY TRANSMISSION LINE
Stanley Rask, New York, N.Y., and Edgar A. Ross and Odes D. Tatum, Jr., Greenville, S.C., assignors to Southern Weaving Company, Greenville, S. C.
Filed June 5, 1967, Ser. No. 643,590
Int. Cl. H01r *11/02*; **H01b** *7/08, 11/02*
U.S. Cl. 339—143 **11 Claims**

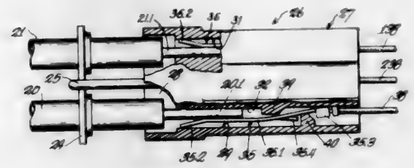


The transmission line is composed of a plurality of flat woven cables with flexible insulation material separating the individual cables. Each individual cable has warp wires interwoven with insulating warp and fill threads to form a thin, flat cable in which the warp wires are covered and separated from one another by the insulation threads. The warp wires have an undulating, approximately sinusoidal shape, and are aligned with one another so that the undulations in adjacent wires are approximately 180° out of phase with one another. Alternate cables are ground or shield cables in which all of the wires are connected together. The other cables are signal cables in which alternate wires are connected to the ground cables so as to completely surround and shield each signal conductor.

3,447,121
ELECTRICAL CONNECTORS PARTICULARLY FOR ELECTRIC RESISTANCE HEATING ELEMENTS
George Edward Ammerman, Murfreesboro, Tenn., and Donald M. Cunningham, Pittsburgh, Pa., assignors to Edwin L. Wiegand Company, Pittsburgh, Pa.
Filed Nov. 7, 1966, Ser. No. 592,484
Int. Cl. H01r *33/72, 9/08*; **H05b** *3/68*
U.S. Cl. 339—192 **16 Claims**

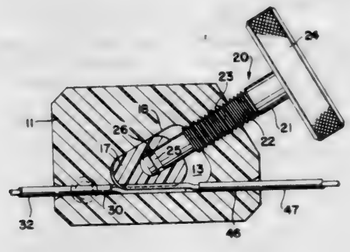
An electrical connector assembly in which one or more elongated, resilient electrical contact strips are disposed in respective slots formed in a dielecetric body and wherein each strip has a portion cooperable with one of its slot walls to resiliently receive and grip a respective electrical contact prong therebetween.

Abutments are spaced longitudinally of a body slot to maintain the strip portion aforesaid adjacent its slot wall, such abutments comprising a projection extending



toward one slot wall from an opposed slot wall and the other comprising an angularly disposed contact strip end portion resiliently engaged with such opposed slot wall.

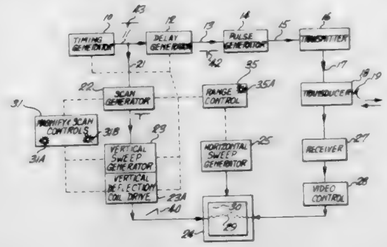
3,447,122
CONNECTOR FOR ELECTRICAL CONDUCTORS
Edward Beck, Cleveland Heights, Ohio, assignor to Crawford Fitting Company, Solon, Ohio, a corporation of Ohio
Filed Sept. 20, 1967, Ser. No. 669,040
Int. Cl. H01r *7/06, 13/40*
U.S. Cl. 339—200 **11 Claims**



A connector for electrical conductors which includes a reciprocally actuated, insulating clamping block containing converging surfaces to provide a wedging relationship for joining the conductors within an insulating connector body. Means are provided for wedging the clamping block against the connector body to connect and disconnect the axially aligned conductors. The clamping block is reciprocally actuated by a threaded bolt having a knurled cap communicating through the wall of the body with the clamping block within the cavity. Means for securedly fixing one end of the conductors to be connected and alternative means for guiding and positioning the conductors within the block in the body of the connector are also disclosed.

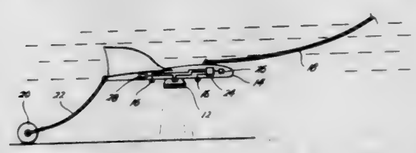
3,447,123
DETECTION AND DISPLAY SYSTEM
Bruce H. Bettcher, 2814 129th SE., Bellevue, Wash. 98004
Filed May 20, 1966, Ser. No. 551,578
Int. Cl. G01s *9/66*
U.S. Cl. 340—1 **15 Claims**

The present invention relates to detection and display systems in general and more particularly to an improved system for detecting the distance between a signal transmitter carried by a craft and the terrain over which the craft is located or moving and including means for providing an accurate and detailed presentation of information concerning the terrain as well as of any selected intermediate segment of the space between the craft and such terrain. The system includes circuitry for providing a magnified view of a selected portion of the volume of space between the craft and the terrain. Circuit details of the scan generator for the vertical sweep of an intensity modulated cathode ray tube display are provided, including means for varying the initiation and speed of



the sweep to obtain magnification are disclosed. The application discloses systems for obtaining improved data regarding objects displaced from a ship or aircraft, and particularly to an improved display of such data. Specific circuit details are provided including the circuit details of an improved deflection coil circuit for a magnetic deflection cathode ray tube.

3,447,124
UNDERWATER SURVEY
Allen J. Louviere, Galveston, Tex. (5001 Bayou Drive, Dickinson, Tex. 77539), and Leonard S. Nicholson, Clear Lake, Tex. (15811 Fathom Lane, Houston, Tex. 77058)
Filed Sept. 15, 1967, Ser. No. 667,903
Int. Cl. G01v *1/38*
U.S. Cl. 340—4 **10 Claims**

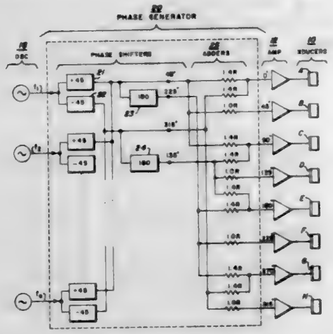


A source of electromagnetic energy is provided and reflected off of the ocean floor. The reflected spectrum is received by a series of narrow band width sensors and the various amplitudes indicated. Comparison of these amplitudes with the signatures of known materials allows identification of the ocean floor composition. Amplitude changes can also be used to identify changes in composition.

3,447,125
MULTI-FREQUENCY PHASE SHIFTER
James A. Peugh, 3415 Yosemite St., San Diego, Calif. 92109
Filed Sept. 27, 1967, Ser. No. 671,158
Int. Cl. H04b *13/00*
U.S. Cl. 340—5 **4 Claims**

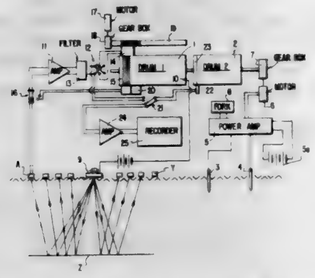
The direction of a tunable receiver is determined with respect to the center line of a linear array of transducers at a transmitting station by detecting the frequency of the maximum signal level at the receiver. At the transmitting station is a source of a series of frequencies, each frequency being divided into components of uniformly

spaced phases, the frequencies of like phases being applied, respectively, to said transducers to form a plurality



of differently directed beams. Each beam is unique as to frequency and can be identified at the tunable receiver.

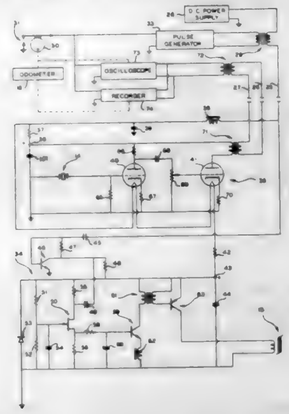
3,447,126
RECORDING TECHNIQUE FOR ELIMINATING PERIODIC NOISE FROM SEISMIC SIGNALS
Albert C. Reid, Tulsa, Okla., assignor to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware
Filed July 19, 1967, Ser. No. 654,457
Int. Cl. G01v *1/00*
U.S. Cl. 340—15.5 **5 Claims**



A method of recording on magnetic tape a seismic signal produced by a manmade disturbance on or near the earth's surface utilizing one or more, e.g. two rotating drums and including a micro-track magnetic taperecorder whereby an unwanted noise freqency is cancelled from the signal comprising recording the signal on tape during a normal length of recording time or distance such as one revolution of the drum, the recording including an even multiple of the period of the unwanted frequency, recording on the tape with reversed polarity during a second length of recording equal to the first length such as a second revolution of the drum without alteration of drum speed a multiple of the period of the unwanted frequency, and summing the first and second recordings to provide a resultant with the unwanted frequency cancelled out.

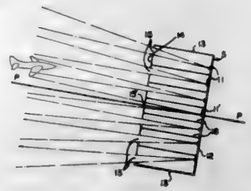
3,447,127
SONIC LOGGING APPARATUS
Bruce F. Wiley, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Oct. 13, 1967, Ser. No. 675,201
Int. Cl. G01v *1/40*
U.S. Cl. 340—18 **6 Claims**

Well logging apparatus comprises a housing supporting a sonic receiver and one or two sonic transmitters spaced therefrom. Operating power for the downhole equipment is supplied by a single lead, which also is used



to transmit pulses to a downhole signal generator. When two transmitters are used, they are energized alternately from pulses transmitted downhole.

3,447,128
AIRCRAFT GLIDE PATH VISUAL POSITION-INDICATING DEVICE
Henry Patrick Birmingham and Barbour L. Perry, Alexandria, Va., and Alan W. Baldwin, Oxon Hill, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed Jan. 12, 1966, Ser. No. 520,189
Int. Cl. G08g *5/02*
U.S. Cl. 340—26 **3 Claims**



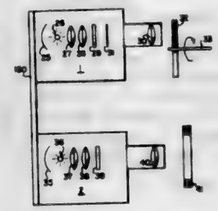
The invention provides a visual position-indicating device, which is in situ near the landing point for aircraft to aid a pilot of the aircraft in following a desired glide path to a successful landing. The device consists of a shadow box having a number of spaced thin-filament light sources and a corresponding number of slits in the wall opposite these light sources. This arrangement provides a source of light which appears to move vertically to a pilot as his craft moves vertically in the glide plate.

3,447,129
AIRCRAFT DEPTH-OF-FLASH OPTICAL GUIDANCE SYSTEM
Henry P. Birmingham, 1311 Gatewood Drive, and Barbour Lee Perry, 6641 Wakefield Drive, both of Alexandria, Va. 22307, and Alan W. Baldwin, 216 Panorama Drive, Oxon Hill, Md. 20021
Filed June 17, 1966, Ser. No. 559,348
Int. Cl. G08g *5/02*
U.S. Cl. 340—26 **11 Claims**

1. An optical guidance system for enabling the pilot of a vehicle to direct the vehicle to follow a predetermined course to a point of reference, comprising:

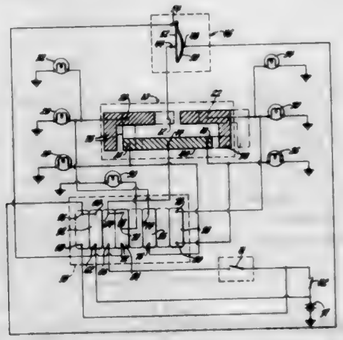
light projection means at said point of reference for projecting a multicolored light pattern, and

pattern characterizing means disposed in the path of said projected light pattern and operable upon said pattern to establish its characteristic so that a predetermined one of said light colors appears steady to the pilot when the vehicle is on said predetermined course while the others of said colors appear



to the pilot as colors of variable flash depths when the vehicle is off said predetermined course, said variable flash depths being a function of the deviation from one course such that the colored light appears more steady as the vehicle approaches said predetermined course.

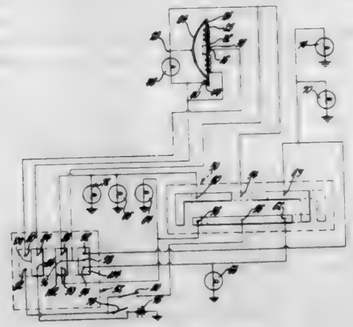
3,447,130
MOTOR VEHICLE SIGNALING SYSTEM
Kenneth R. Skinner and Monte L. Vickery, Anderson, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 8, 1965, Ser. No. 506,731
Int. Cl. B60q *1/52*
U.S. Cl. 340—80 **4 Claims**



A motor vehicle signaling system is disclosed which includes a flasher provided with a load sensitive output terminal and a non-load sensitive output terminal. A turn signal switch is adapted to connect either of two pairs of signal lamps to the load sensitive output terminal of the flasher while an emergency warning switch is actuable in combination with the turn signal switch to connect the other pair of signal lamps with the nonload sensitive output terminal of the flasher permitting the simultaneous flashing of all signal lamps as an emergency warning signal.

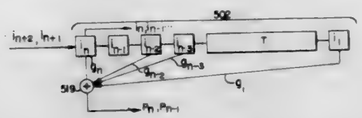
3,447,131
DUAL PURPOSE FLASHER AND MOTOR VEHICLE SIGNALING SYSTEM INCORPORATING SAME
Kenneth R. Skinner and David P. Clayton, Anderson, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 17, 1965, Ser. No. 514,552
Int. Cl. B60q *1/52*
U.S. Cl. 340—80 **8 Claims**

A dual purpose flasher exhibiting the characteristics of both a series and shunt type flasher is disclosed and incorporated in a signal system including a turn signal switch adapted to place the flasher in its series mode of operation for selectively flashing one of two pair of lamps



and an emergency warning switch adapted to place the flasher in its shunt mode of operation for simultaneously flashing both pairs of signal lamps.

3,447,132
APPARATUS AND METHOD FOR PROCESSING DIGITAL DATA AFFECTED BY ERRORS
Arthur Kohlenberg, Cambridge, Mass., assignor to Codex Corporation, Watertown, Mass., a corporation of Delaware
Continuation-in-part of application Ser. No. 383,387, July 17, 1964. This application May 14, 1965, Ser. No. 455,787
Int. Cl. G08b *29/00*; **G06f** *11/00*
U.S. Cl. 340—146.1 **32 Claims**

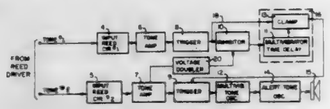


Error burst correction in digital transmission using convolutional codes. A set of three or more redundancy signals are formed to check each information signal. Some but not all of the transmitted signals are spaced a maximum burst length apart, the others being closer together. The decoding logic, by use of guard means for the burst when it enters the decoder, decodes an information bit even when more than one of the uncorrected bits in the set to which it is responsive is in error. The guard means is shown in the form of additional lengths of delay, providing a diffuse code, and in the form of a monitor which records the probable location of a burst and suppresses the bursty data from affecting the decoding decision.

3,447,133
TONE INHIBITOR CIRCUIT FOR PLURAL TONE RECEIVER
William J. Cole, Arlington Heights, and Fred J. Conforti, Wooddale, Ill., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Mar. 7, 1966, Ser. No. 532,342
Int. Cl. H04q *3/00*
U.S. Cl. 340—171 **9 Claims**

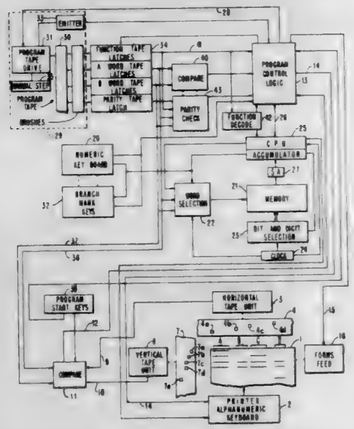
1. A tone decoder including in combination: first tone receiving channel means including first frequency selective means for passing a first tone signal of a first predetermined frequency, second tone receiving channel means including second frequency selective means for

passing a second tone signal of a second predetermined frequency, alerting means coupled to said second tone receiving channel means and adapted to be energized by said second tone signal, enabling means coupled between said first and second channels and acting normally to disable said second tone receiving channel means, said enabling means being responsive to said first tone signal for enabling said second tone receiving channel means



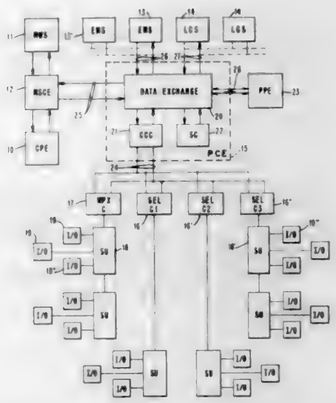
to pass said second tone signal from said second frequency selective means to said alerting means only within a particular time duration after the termination of said first tone signal at the input of said first frequency selective means, and inhibiting means coupled to said second receiving channel and to said enabling means and being responsive to said second tone signal to prevent said first tone signal from being coupled to said enabling means.

3,447,134
PROGRAMMING APPARATUS ON A DOCUMENT PRINTER
Bernard G. Thompson, Chandlers Ford, England, and William L. McDonald, Lexington, Ky., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Aug. 11, 1966, Ser. No. 571,778
Int. Cl. G06f *7/10*
U.S. Cl. 340—172.5 **27 Claims**



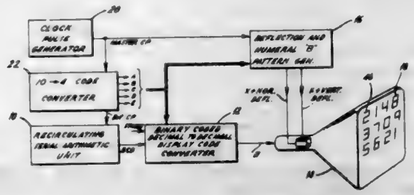
The invention relates to programming apparatus having prerecorded or punched record media correlated for program control purposes with horizontal, vertical, and/or coordinate locations on a document in a printer. The system has a first tape for sensing the vertical position of an accounting form, such as an invoice, and a second tape for sensing the horizontal position of the form. An auxiliary program control tape loop is provided that coperates with, but that is independently located from the coordinate tape arrangement associated with the printer. The auxiliary program tape is used for a variety of control purposes including arithmetic functions, and printer control instructions. Also, the auxiliary tape outputs may be used to directly address locations in memory. The auxiliary program tape contains program instruction sets, each related to a particular coordinate location on the document. It is searched at high speeds for a desired program sequence and provision is made for selecting alternative Branch sequences. Sequences on the tape can also be selected manually irrespective of their relationship to the locations on a document.

3,447,135
PERIPHERAL DATA EXCHANGE
Salvatore A. Calta, Poughkeepsie, Harry A. Carlson, Wappingers Falls, Gerry D. Granito and Lynn W. Kaumeyer, Poughkeepsie, Alphonse U. Marcotte, Hyde Park, and Benedicto U. Messina, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Aug. 18, 1966, Ser. No. 573,360
Int. Cl. G11b *13/00*
U.S. Cl. 340—172.5 **20 Claims**



A data exchange coupled between a storage area and a plurality of peripheral devices each adapted to generate a signal requesting access to the store, the exchange having a plurality of registers (a queue) to receive such signals, an input priority control to transfer the request to one of the registers in the queue, and an output priority control responsive to the queue and the storage area to selectively transfer store requests signals to the storage area.

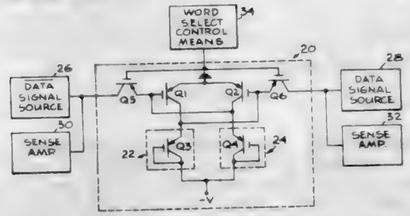
3,447,136
APERIODIC ARITHMETIC CALCULATOR
Howard Z. Bogert, Cupertino, and Jay G. Miner, Sunnyvale, Calif., assignors to Philco-Ford Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Oct. 18, 1966, Ser. No. 587,462
Int. Cl. G11b *13/00*
U.S. Cl. 340—172.5 **10 Claims**



Calculator in which arithmetic and display units operate with information-representative pulses of respectively different widths and respectively different code radices, the smaller of which is not evenly divisible into the larger. Calculator is clocked aperiodically in a manner such that (1) the arithmetic unit produces pulses of each radix group which have nonuniform widths, and (2) a

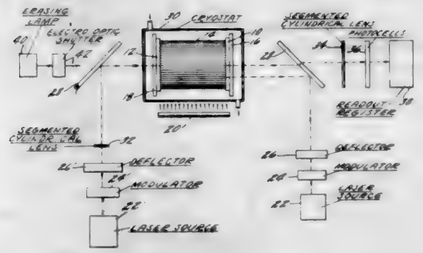
whole number of pulses in the display unit (which employs the larger code radix) occurs during each arithmetic unit pulse.

3,447,137
DIGITAL MEMORY APPARATUS
Robert Feuer, Canoga Park, Calif., assignor to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware
Filed May 13, 1965, Ser. No. 455,546
Int. Cl. G11b; H03k *3/26, 15/00*
U.S. Cl. 340—173 **19 Claims**



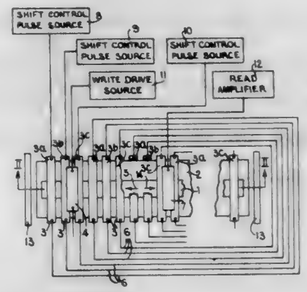
A very fast low power semiconductor memory cell. The memory cell includes first and second metal oxide semiconductors which are interconnected such that when the first semiconductor is conducting, it holds the second semiconductor off and vice versa. Additionally, third and fourth metal oxide semiconductors are connected to the first and second semiconductors in a manner which enables them to function as high valued resistors. Further, first and second metal oxide output semiconductors are provided which are respectively connected to the first and second semiconductors with the drain terminals of the output semiconductors serving as both input terminals and complementary output terminals for the memory cell. In writing information into the cell, complementary data signals are provided to the output semiconductors to promptly force the nodes of both the first and second semiconductors to their new potential levels without waiting for regeneration to occur in the cell.

3,447,138
OPTICAL ASSOCIATIVE MEMORY
Arthur N. Carson and Gabor K. Ujhelyi, Bristol, Conn., assignors to Carson Laboratories, Inc., Bristol, Conn., a corporation of Connecticut
Filed May 18, 1966, Ser. No. 551,155
Int. Cl. G11b *7/02*
U.S. Cl. 340—173 **21 Claims**



1. An associative memory including:
a first element having centers therein transparent to light of first predetermined wavelength;
a second element having centers therein of alterable state in response to light of a second predetermined wavelength, said second element being spaced from said first element;
a plurality of optical fiber lasers positioned between said first and second elements, said fiber lasers providing paths for connecting centers in said first and second elements, said fiber lasers being capable of emitting light of said first predetermined wavelength;
means defining an optical cavity, said first and second elements and said fiber lasers being in said optical cavity; and
means for altering the state of at least some of said centers in said second element to cause said altered centers to pass light of said first predetermined wavelength from said fiber lasers to complete an optical path in said optical cavity and cause at least some of said optical fibers to lase.

3,447,139
DEVICES EMPLOYING THIN MAGNETIC FILMS
Andrew Charles Tickle, Saskatoon, Saskatchewan, Canada, assignor to International Computers and Tabulators Limited
Filed Mar. 10, 1965, Ser. No. 438,687
Claims priority, application Great Britain, Mar. 10, 1964, 10,130/64
Int. Cl. G11b *5/74, 5/00*
U.S. Cl. 340—174 **9 Claims**

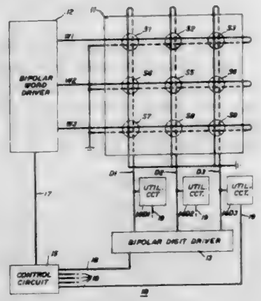


An improved shift register is described, of the kind in which a length of thin anisotropic magnetic film strip is arranged with its easy axis of magnetization aligned with the longitudinal axis of the strip, the film strip being initially all in one remanent stable state with is magnetization vector aligned in one direction along the easy axis, and in which an item of information is represented in the register by an area of reversed magnetic state in the film. This area of reversal is constrained to move along the film strip by the cooperation of a magnetic biassing field applied to the whole strip, which is of sufficient magnitude to induce motion outwards of the walls bounding the reversed area, with the cyclic sequential energization of control conductors spaced along the strip, each of which conductors produces a saturating magnetic field acting on the strip and capable of resetting any reversal of state. The cyclic energization of the conductors both limits the extent of wall movement at one edge of the area in the required direction of motion and forces the opposite edge of the area to follow. At the same time the magnitude of the control fields is sufficient to prevent the formation of reversed nuclei behind the moving area.

3,447,140
MAGNETIC MEMORY USING A BIPOLAR WORD PULSE DURING A WRITE OPERATION
Andrew H. Bobeck, Chatham, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 4, 1965, Ser. No. 492,557
Int. Cl. G11b *5/00*
U.S. Cl. 340—174 **7 Claims**

Thin magnetic film memories exhibit improved outputs if a bipolar word pulse is employed during a write

operation. Such a pulse permits a relatively large amount of flux to be tipped to a selected direction along the easy

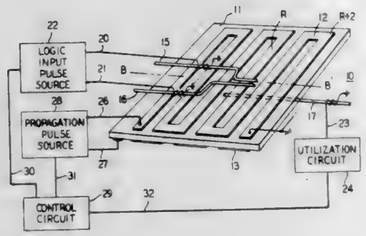


axis when terminated in the presence of an easy direction field.

3,447,141
MAGNETIC CIRCUIT WITH REVERSE DOMAIN PROPAGATION

John T. Sibilia, New Providence, and David H. Smith, Summit, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Nov. 12, 1965, Ser. No. 507,498
Int. Cl. G11b *5/00*
U.S. Cl. 340—174 **10 Claims**



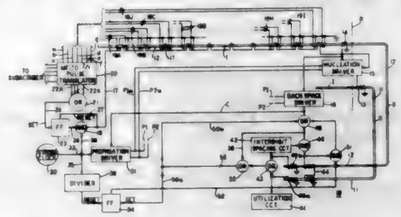
The demagnetizing field associated with a reverse domain being propagated along a first magnetic medium adds at various spaced apart positions along the medium to the propagation fields applied for propagating the domain. Another magnetic medium closely spaced to the first medium at one of those positions at which the fields add experiences a field in excess of its nucleation threshold providing a reverse domain therein. Various logical functions are provided.

3,447,142
ASYCHRONOUS MAGNETIC SHIFT REGISTER CIRCUIT

Reginald A. Kaenel, Chatham, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Nov. 30, 1965, Ser. No. 510,587
Int. Cl. G11b *5/44, 13/00*
U.S. Cl. 340—174 **14 Claims**

Asynchronous operation of a shift register is achieved in the absence of a buffer store by shifting information back and forth in the register at a rate faster than the input or output rates. By moving stored information back and forth in this manner, that information is properly positioned for both write-in and readout essentially simultaneously. Inputs, responsive to coded input signals, are enabled by the arrival of information at the input.

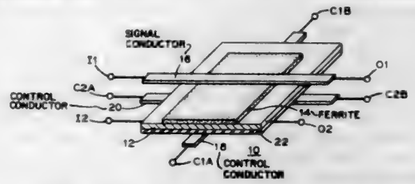


Readouts, responsive to read signals, are enabled by the arrival of information at the output.

3,447,143
RECIPROCAL FERRITE PHASE SHIFTERS AND MEMORY SYSTEM UTILIZING SAME

Hugh A. Hair, Liverpool, Gerard T. Roome, Syracuse, Carl W. Gerst, North Syracuse, and Edgar E. Desjardins and Edward J. Domick, Syracuse, N.Y., assignors to Research Corporation, New York, N.Y., a corporation of New York

Filed June 30, 1966, Ser. No. 561,773
Int. Cl. G11b *5/14*
U.S. Cl. 340—174 **19 Claims**

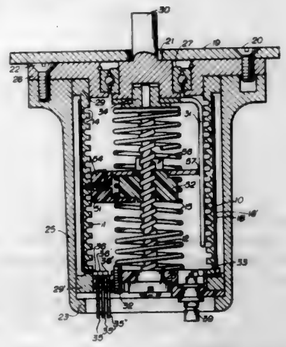


A microwave device includes a planar self-latching-ferrite element, a signal conductor and a planar ground-plane element in planar coparallel relationship. At least one control conductor is provided for changing the state of magnetization of the ferrite element. Some embodiments are directed to reciprocal phase-shifters; and other embodiments are directed to memory elements.

3,447,144
MECHANICALLY SETTABLE MAGNETIC REGISTER

Richard L. Snyder, New Smyrna Beach, Fla., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Feb. 8, 1966, Ser. No. 526,333
Int. Cl. G11b *5/00*
U.S. Cl. 340—174.1 **9 Claims**



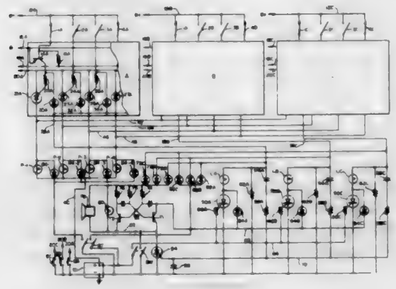
A magnetic memory comprising a helically wound magnetic wire in which information may be recorded and

stored in the form of magnetic domains, propagation elements for shifting the domains, a head arrangement mounted on a lead screw and movable adjacent the magnetic wire for positioning to read or record the domains, and an electrically conducting stationary helix that is coaxial with the magnetic wire helix and lead screw and threaded through the head arrangement for inductively coupling the movable head to external circuits.

3,447,145
CONSTANT SURVEILLANCE ALARM SYSTEM FOR A PLURALITY OF REMOTE LOCATIONS

Paul A. Schumann, Richmond, Va., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

Filed Aug. 11, 1966, Ser. No. 571,766
Int. Cl. G08b *25/00*
U.S. Cl. 340—213.1 **11 Claims**

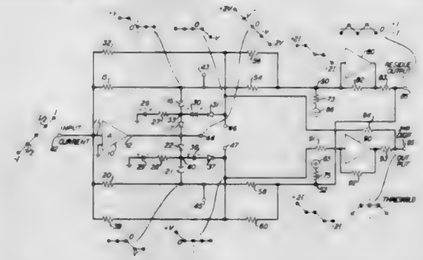


1. A constant surveillance alarm system in which a plurality of remote zones are electrically monitored from a central monitoring station comprising in combination:
a source of supply voltage;
at least one alarm sensing means located in each of said plurality of remote zones and being operable in response to an alarm condition to change operating states and including circuit means for coupling a supply voltage to one side of said alarm sensing means from said source of said supply voltage;
a zone alarm coupled to said at least one alarm sensing means including,
first semiconductor switch means coupled to the other side of said alarm sensing means in each zone and also to said source of supply voltage so as to be rendered conductive upon the occurrence of an alarm condition,
relaxation oscillator circuit means coupled between said other side of said alarm sensing means and said first semiconductor switch means so as to become operable by application of said supply voltage thereto when said first semiconductor switch means becomes conductive,
first alarm indicator means for each zone of said plurality of remote zones coupled between said other side of said alarm sensing means in each zone and said relaxation oscillator circuit forming a portion of the load circuit thereof so as to be intermittently energized upon the occurrence of an alarm condition in the respective zone by operation of the relaxation oscillator circuit,
second semiconductor switch means coupled to each of said first indicator means, and
switch means coupled to said first semiconductor switch means and said second semiconductor switch means which when activated renders said first semiconductor switch means non-conductive and renders said second semiconductor switch means conductive when an alarm condition exists in the respective zone to continuously energize said first alarm indicator means; and
an alarm point circuit for each zone including,
third semiconductor switch means coupled to the other side of said alarm sensing means and being responsive thereto to become conductive when a supply voltage is applied thereto and the respective alarm sensing means changes operating states,
a second alarm indicator means coupled between said source of supply voltage and said third semiconductor switch means becoming energized when said third semiconductor switch means becomes conductive, and
another switch means coupled between said source of supply voltage and said third semiconductor switch means for selectively applying a supply voltage thereto, said third semiconductor switch means becoming conductive thereby when an alarm condition exists at said alarm sensing means whereby said second alarm indicator means is energized.

3,447,146
QUATERNARY ENCODING USING MULTIPLE FEEDBACK LOOPS AROUND OPERATIONAL AMPLIFIERS

Veikko R. Saari, Chatham, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

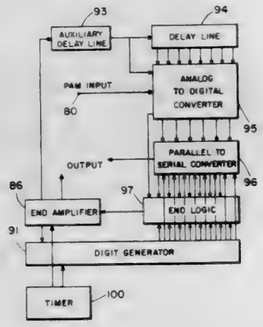
Filed Dec. 29, 1965, Ser. No. 517,339
Int. Cl. H04l *3/00;* **H03k** *13/00*
U.S. Cl. 340—347 **3 Claims**



1. An encoding stage for a stage-by-stage encoder which comprises, in combination, an amplifier having an input terminal and an output terminal, a signal input terminal connected to said amplifier input terminal, a digit output terminal at which a first digit output signal is obtained connected to said amplifier output terminal, two diodes, a first of said diodes having its cathode connected to the output terminal of said amplifier and the second of said diodes having its anode connected to the output terminal of said amplifier, first and second feedback paths connected between said amplifier input terminal and the anode of said first diode, each of said feedback paths comprising the series combination of a diode and a resistance with the diode in the first path poled to conduct current in the opposite direction from the diode in said second path, third and fourth feedback paths each comprising the series combination of a diode and a resistance connected between said amplifier input terminal and the cathode of said diode whose anode is connected to the amplifier output terminal, the diode in said third feedback path being poled to conduct current in the opposite direction from the diode in said fourth feedback path, means for deriving a first analog output signal from the junction of said resistance and said diode of said first feedback path, means for deriving a second analog signal from the junction of said resistance and said diode of said second path, means for deriving a third analog signal from the junction of said resistance and said diode of said third path, means for deriving a

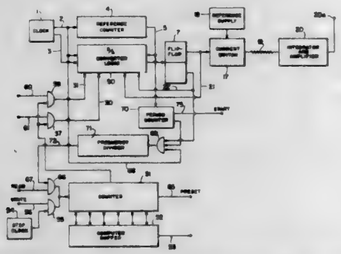
fourth analog signal from the junction of said resistance and said diode in said fourth feedback path, means for combining the output signals of said first and third paths, means for combining the output signals of said second and fourth paths, means for combining the combined output signals at a residue output terminal so that the transfer characteristic between the analog input terminal and the residue output terminal is a double V-shaped full wave rectifier transfer characteristic, and means for combining the analog signals from said second and fourth paths to produce a second digit output signal.

3,447,147
ENCODER
Jacques V. Deregnaucourt, Ottawa, Ontario, Canada, assignor to Northern Electric Company Limited, Montreal, Quebec, Canada
Filed June 3, 1965, Ser. No. 461,084
Int. Cl. H04l *3/00;* **H04j** *1/16;* **H03k** *13/00*
U.S. Cl. 340—347 **4 Claims**



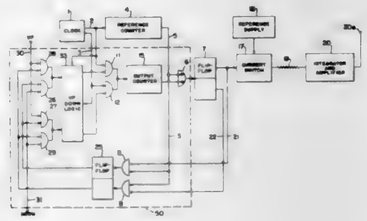
A variable word length encoder for a pulse code modulation multiplex telephone system in which pulse amplitude modulated signals are encoded in a pulse code modulation preferably binary, with the least significant digit being transmitted first and with an end-of-word signal provided to indicate the last significant digit of the pulse code. The encoder includes means to inhibit encoding when the input signal is less than a predetermined value thus saving the operating time of the encoder for zero level signals.

3,447,148
DIGITAL TO ANALOG CONVERTER HAVING DIGITAL FEEDBACK
William H. Groth, Douglasville, Pa., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Oct. 18, 1965, Ser. No. 496,995
Int. Cl. H03k *13/02, 13/32*
U.S. Cl. 340—347 **8 Claims**



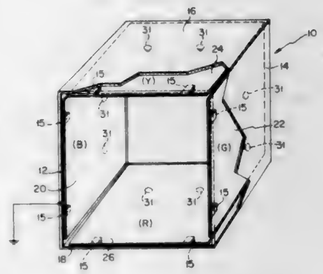
There is provided a digital to analog converter system which includes a feedback arrangement which operates in a digital manner whereby the digital to analog converter is monitored, for example by a digital computer.

3,447,149
DIGITAL TO ANALOG CONVERTER
William H. Groth, Douglasville, Pa., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Oct. 18, 1965, Ser. No. 497,369
Int. Cl. H03k *13/02*
U.S. Cl. 340—347 **8 Claims**



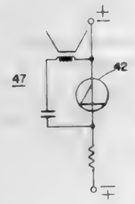
There is provided a digital to analog converter circuit utilizing a pair of counters which are driven by a pulse source. The rate of counting by one of the counters is selectively variable. The difference in the counts of the counters controls an analog output producing circuit.

3,447,150
MULTICOLOR SIGNALLING DEVICE
William R. Aiken, 10410 Magdalena Ave., Los Altos Hills, Calif. 94022
Filed Oct. 31, 1966, Ser. No. 590,739
Int. Cl. G08b *5/30, 5/14*
U.S. Cl. 340—373 **7 Claims**



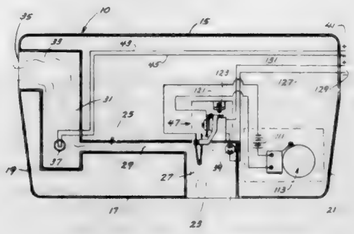
A signalling device comprising electrode means arranged to define a many-sided enclosure, a plurality of vanes having differently colored surfaces mounted within said enclosure for swinging movement between first positions adjacent corresponding sides of said enclosure wherein they are concealed from a common line of view axially of the enclosure and second positions withdrawn from the sides of the enclosure wherein their colored surfaces are exposed to said common line of view, and means operable to establish vane-actuating electro-static fields between a selected one of said vanes, the remaining vanes and said electrode means to swing the selected vane into said second position thereof and thus expose its colored surface to said common line of view and to return the exposed vane to said first concealed position thereof.

3,447,151
ALERTING DEVICE HAVING OSCILLATIONS OF NEGATIVE RESISTANCE CIRCUIT CONTROLLED BY MECHANICAL RESONANCE OF TRANSDUCER
Bronson M. Potter, R.F.D. 1, Greenville, N.H. 03048
Continuation-in-part of application Ser. No. 340,392, Jan. 27, 1964. This application Mar. 23, 1967, Ser. No. 625,461
Int. Cl. G08b *3/00, 3/10*
U.S. Cl. 340—384 **13 Claims**



An electrically operated alerting device employing a sound transducer and a negative resistance or gas tube active device. The transducer when vibrating at its resonant frequency radiates substantial energy audible to the ear and the electrical manifestations of the resonant motion of the transducer controls the transitions of the active device. By this means an oscillating power supply is provided to the transducer itself which achieves a low power and simple audible alarm and visual alerting signal.

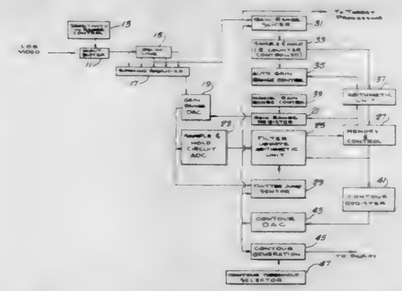
3,447,152
FIRE AND SMOKE ALARM DEVICE
John L. Jensen, Estherville, Iowa 51334
Filed Aug. 30, 1965, Ser. No. 483,711
Int. Cl. G08b *19/00*
U.S. Cl. 340—420 **5 Claims**



A fire and smoke alarm device which is activated by the presence of smoke and/or excessive heat. The device includes a housing having an air sampling chamber and means therein to induce the flow of air therethrough. A smoke and fire sensing means are provided in the air sampling chamber and will activate an alarm circuit when smoke enters the chamber or when the temperature rises therein to a predetermined level.

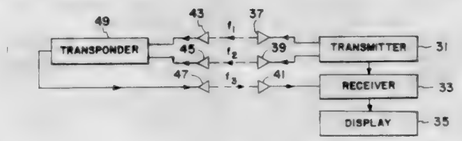
3,447,153
WEATHER OUTLINE CONTOUR GENERATOR
Hugh T. Maguire, Malvern, Pa., assignor to the United States of America as represented by the Secretary of the Army and/or the Administrator of the Federal Aviation Administration
Filed Oct. 15, 1968, Ser. No. 767,772
Int. Cl. G01s *9/42*
U.S. Cl. 343—5 **6 Claims**

The present invention provides a radar system for accurately generating weather contours by the accurate estimation of the power level return from weather clutter. The basic functions performed in generating weather contours according to the present system include controlling the sensitivity in accordance with range, provid-



ing RMS estimates of the power level of weather clutter and providing a self calibrating system for automatically adjusting for detected inaccuracies.

3,447,154
COOPERATIVE DOPPLER RADAR SYSTEM
James H. Schrader, Newport News, Va., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Oct. 17, 1967, Ser. No. 676,391
Int. Cl. G01s *9/56*
U.S. Cl. 343—6.5 **10 Claims**

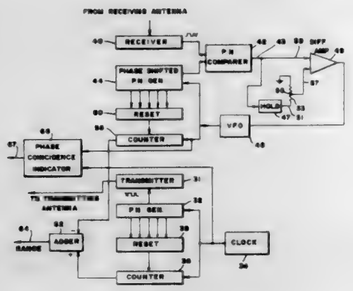


This invention is an apparatus for aiding a pilot in avoiding midair collisions between aircraft. A protected aircraft carries a transmitter, a transponder and a receiver; and and intruding cooperating aircraft carries a transponder. The transmitter of the protected aircraft transmits a pair of continuous wave signals to the transponder of the intruding aircraft. The intruding aircraft's transponder mixes the two signals and retransmits a difference frequency signal back to the protected aircraft. The protected aircraft compares the retransmitted signal with the difference between the pair of transmitted signals to determine the Doppler frequency. The Doppler frequency is a measure of the range rate between the intruding aircraft and the protected aircraft while the intensity of the return signal is a measure of the range between the two aircrafts. When a possible collision condition is detected, the pilot of the protected aircraft is warned so that he can take the necessary evasive action. In addition, apparatus is provided for allowing all aircraft to operate on the same frequency bands by utilizing a means to suppress the numerous cross-modulation products that are generated when a plurality of protected aircraft interrogate the transponder of an intruding aircraft.

3,447,155
RANGING SYSTEM
James E. Webb, Administrator of the National Aeronautics and Space Administration with respect to an invention of Tage O. Anderson, Arcadia, Calif.
Filed Nov. 9, 1967, Ser. No. 681,693
Int. Cl. G01s *9/06, 9/23, 9/24*
U.S. Cl. 343—13 **11 Claims**

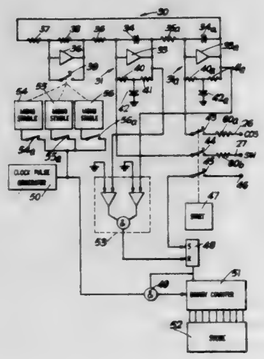
An improved system for determining the range to a distant object such as an extra-terrestrial space probe

by transmitting a pseudorandom code and measuring the time between sending the code and receiving it back from the object, the improvement comprising a counter connected to the transmitter code generator for converting the pseudorandom code to a number at every instant,



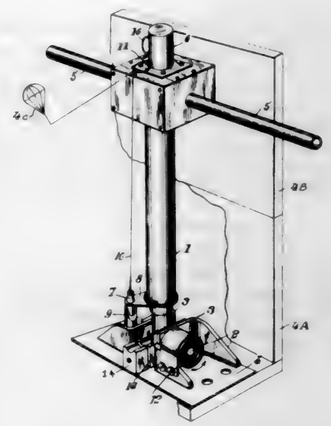
a second counter connected to the pseudorandom code receiver for converting the code received into a second number at every instant, and a circuit for comparing the numbers counted by the first and second counters to provide a range indication.

3,447,156
RECEIVERS FOR PHASE COMPARISON RADIO NAVIGATION SYSTEMS
Marie Alphonse Paul Eugene Pierre Diederich, London, England, assignor to Decca Limited, London, England, a British company
Filed Jan. 25, 1968, Ser. No. 700,418
Claims priority, application Great Britain, Feb. 1, 1967, 4,899/67
Int. Cl. G01s *1/32*
U.S. Cl. 343—105 **12 Claims**



A receiver for a phase comparison navigation system in which receiver analogue signals representing the sine and cosine of a phase angle are converted into a digital signal. The analogue signals are applied to set the voltage levels at the respective inputs of two integrating operational amplifiers in tandem, an oscillatory loop containing the amplifiers being completed by an inverter. The loop is allowed to oscillate, a digital counter being arranged to count an increment for each incremental change in the phase of the oscillation. The counting is stopped at a predetermined phase in the oscillation, whereupon the number counted by the counter is proportional to the phase angle or is simply related thereto. Clock pulses, which need not be at a regular frequency, are counted by the counter and trigger a monostable which permits oscillation of the loop for a present time. The monostable period is chosen so that the digital count represents the phase angle expressed in terms of a lower frequency.

3,447,157
APPARATUS FOR CONTROLLING THE OPENING OF A PARACHUTE
Jean Pierre Tranin, Fontenay-aux-Roses, France, assignor to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed June 7, 1966, Ser. No. 555,899
Claims priority, application France, June 9, 1965, 20,022
Int. Cl. H01q *1/24*
U.S. Cl. 343—702 **6 Claims**



This invention is an improved apparatus for controlling the opening of a load parachute used to support in flight a parcel which is dropped from a substantial height. A stabilization parachute is opened immediately after the parcel is dropped, the opening of this parachute automatically permitting the aerial to pivot to operable position and the radioelectric device therein to become operative. At a predetermined altitude the device signals an actuation means to open the load parachute for the remainder of the drop.

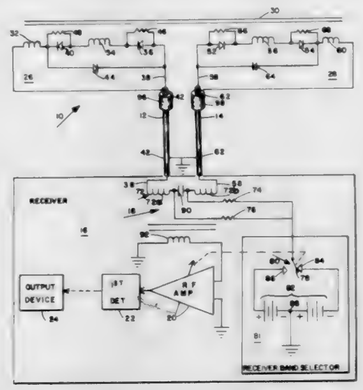
3,447,158
LOW PROFILE AIRCRAFT ANTENNA WITH DIELECTRIC REFLECTOR TO REDUCE DESTRUCTIVE INTERFERENCE
Greta Colleen Adie Sunderland, Woking, Surrey, England, assignor to National Research Development Corporation, London, England
Filed Sept. 15, 1966, Ser. No. 579,635
Claims priority, application Great Britain, Sept. 17, 1965, 39,747/65
Int. Cl. H01q *1/28*
U.S. Cl. 343—708 **15 Claims**

1. An aerial system comprising a primary radiator for transmitting or receiving circularly polarized electromagnetic waves and a secondary radiator comprising a layer of dielectric material situated adjacent the primary radiator so as to reflect at angles of incidence greater than the Brewster angle a significant amount of energy radiated from or received by the said primary radiator and impinging on the said layer of dielectric material and a layer of radio absorbing material adjacent the said layer of dielectric material on the opposite side thereof from the said primary radiator.



3,447,159
DIODE BANDSWITCH LOOP ANTENNA
Chester Stromswold, Nashua, N.H., assignor to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware
Filed June 27, 1966, Ser. No. 560,679
Int. Cl. H01q *11/12*
U.S. Cl. 343—742 **8 Claims**

A multiple turn loop antenna contains switching elements in series with the turns such that by selectively switching certain elements, it is possible to isolate certain turns from the active turns and from the receiver, to thereby provide a broadband antenna whose output impedance



matches the receiver input impedance over a wide range of operating frequencies.

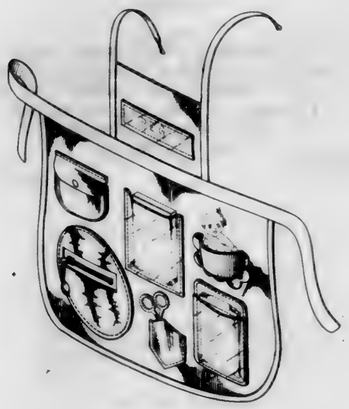
DESIGNS

MAY 27, 1969

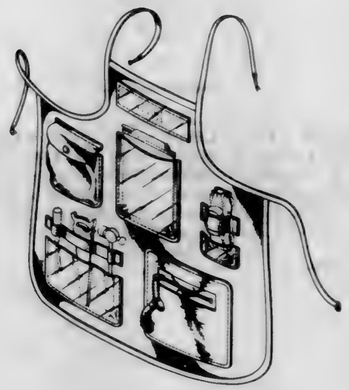
214,255
SAUSAGE
William E. Swartz, McKeesport, Pa., and George H. Smith, Naperville, Ill., assignors to Calgon Corporation, a corporation of Pennsylvania
Filed Aug. 30, 1966, Ser. No. 3,651
Term of patent 14 years
Int. Cl. D1—*04*
U.S. Cl. D1—26



214,256
GIRL'S APRON
Denise C. Gardner, Evanston, and Marvin I. Glass, Chicago, Ill., assignors to Marvin Glass & Associates, Chicago, Ill., a partnership
Filed Mar. 12, 1968, Ser. No. 10,932
Term of patent 14 years
Int. Cl. D2—*01*
U.S. Cl. D2—228



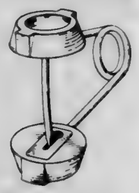
214,257
BOY'S APRON
Marvin I. Glass and Patricia M. Jackson, Chicago, Ill., assignors to Marvin Glass & Associates, Chicago, Ill., a partnership
Filed Mar. 12, 1968, Ser. No. 10,935
Term of patent 14 years
Int. Cl. D2—*01*
U.S. Cl. D2—228



214,258
GOGGLES
Lindell O. Carpenter, Dallas, and Robert M. Ferguson, Arlington, Tex., assignors to Container Corporation of America, Chicago, Ill., a corporation of Delaware
Filed Jan. 9, 1968, Ser. No. 10,106
Term of patent 14 years
Int. Cl. D2—*03*
U.S. Cl. D2—234



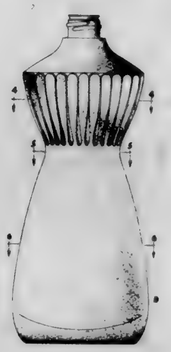
214,259
SAFETY PIN OR THE LIKE
Eugene S. Drake, 2836 Kansas Ave., South Gate, Calif. 90280
Continuation-in-part of design application Ser. No. 4,284, Oct. 14, 1966, now Patent No. 210,817, dated Apr. 23, 1968. This application May 22, 1967, Ser. No. 7,213
Term of patent 14 years
The portion of the term of the patent subsequent to Apr. 23, 1982, has been disclaimed
Int. Cl. D2—*08*
U.S. Cl. D2—413



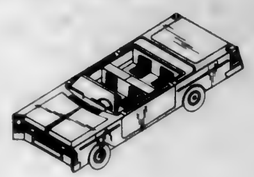
214,260
COMBINED FLUID DISPENSER WITH BRUSH FOR CLEANING UPHOLSTERY OR THE LIKE
Robert A. Yonkers, Grandville, Mich., assignor to Bissell Inc., Grand Rapids, Mich., a corporation of Michigan
Filed July 26, 1968, Ser. No. 12,913
Term of patent 14 years
Int. Cl. D4—*01*
U.S. Cl. D4—7



214,261
BOTTLE
Harold J. Vanderhyde, North Merrick, N.Y., assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed June 12, 1968, Ser. No. 12,313
Term of patent 14 years
Int. Cl. D9—*01*
U.S. Cl. D9—105

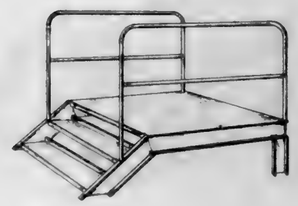


214,262
COLLAPSIBLE CARTON
Richard E. Paige, New York, N.Y., assignor to Brooks & Porter, Inc., New York, N.Y., a corporation of New York
Filed May 24, 1968, Ser. No. 12,073
Term of patent 14 years
Int. Cl. D9—*04*
U.S. Cl. D9—196

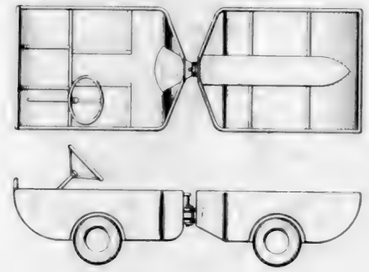


214,263
DISPENSER CAP
Paul H. McConnell, Glendale, Calif., assignor to United States Borax & Chemical Corporation, Los Angeles, Calif., a corporation of Nevada
Continuation of design application Ser. No. 3,009, July 11, 1966. This application Jan. 24, 1968, Ser. No. 10,297
Term of patent 14 years
Int. Cl. D9—*02*
U.S. Cl. D9—267

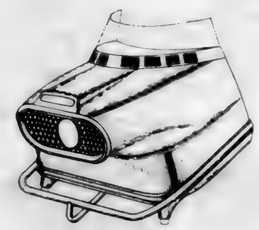
214,264
PLATFORM AND STEPS UNIT
Harry W. Holbrook, 9 Donegal Way, Pinole, Calif. 94564
Filed Jan. 26, 1968, Ser. No. 10,326
Term of patent 14 years
Int. Cl. D25—*99*
U.S. Cl. D13—7



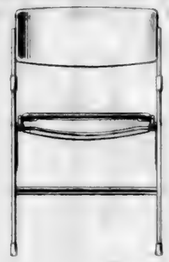
214,265
MOTOR-DRIVEN SWAMP BUGGY
Joseph A. Poltorak, 1716 Roberts Road, Auburn, Mich. 48611
Filed June 11, 1968, Ser. No. 12,306
Term of patent 14 years
Int. Cl. D12—*08*
U.S. Cl. D14—3



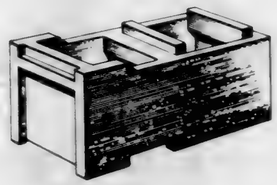
214,266
SNOWMOBILE COWL
Elmer C. Kiekhaefer, Winter Haven, Fla., assignor to Brunswick Corporation, Chicago, Ill., a corporation of Delaware
Filed July 31, 1968, Ser. No. 12,974
Term of patent 14 years
Int. Cl. D12—*13*
U.S. Cl. D14—24



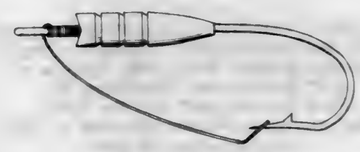
214,267
FOLDING CHAIR
Donald L. Moore and Paul M. Fricke, Jr., Gallatin, Tenn., and Raymond R. Spilman, Stamford, Conn., assignors to Hamilton Cosco, Inc., Columbus, Ind., a corporation of Indiana
Filed Dec. 13, 1967, Ser. No. 9,760
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D15—1



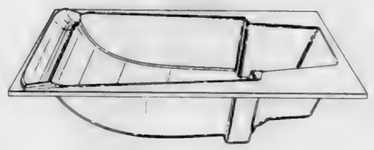
214,268
BUILDING BLOCK
Harold C. Phillips, 246 Oakley Ave., Youngstown, Ohio 44512
Filed Mar. 15, 1967, Ser. No. 6,232
Term of patent 14 years
Int. Cl. D25—*01*
U.S. Cl. D18—2



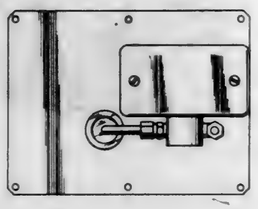
214,269
WEIGHTED FISH HOOK
William J. Jeff, P.O. Box 3654, Birmingham, Ala. 35211
Filed Mar. 27, 1968, Ser. No. 11,152
Term of patent 14 years
Int. Cl. D22—*08*
U.S. Cl. D22—30

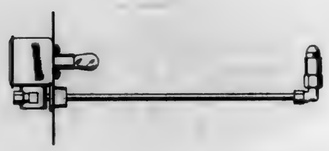


214,270
BATHTUB
Horst Godfrey Bonsack, Flat 17, 51 South St., London, W.1, England
Filed Aug. 12, 1968, Ser. No. 13,102
Claims priority, application Great Britain Feb. 27, 1968
Term of patent 14 years
Int. Cl. D23—*02*
U.S. Cl. D23—55

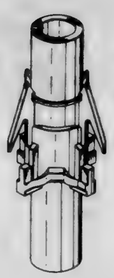


214,271
HUMIDIFIER
David F. Kagen, Silver Spring, Md. (8501 Buckhannon Drive, Potomac, Md. 20854), and John G. Macdonald, 5845 Nebraska Ave. NW., Washington, D.C. 20015
Filed Sept. 18, 1967, Ser. No. 8,613
Term of patent 14 years
Int. Cl. D23—*04*
U.S. Cl. D23—147

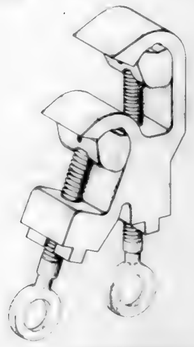




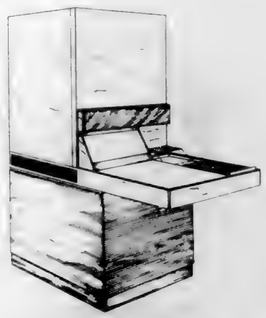
214,272
ELECTRICAL CONNECTOR HOUSING HAVING A PANEL MOUNTING CONSTRUCTION
Riccardo Pautrie, Turin, Italy, assignor to AMP Incorporated, Harrisburg, Pa.
Filed Nov. 29, 1967, Ser. No. 9,705
Claims priority, application Italy June 15, 1967
Term of patent 14 years
Int. Cl. D13—*03*
U.S. Cl. D26—1



214,273
ELECTRICAL CLAMP
Harry China Bricker, Jr., Elizabethtown, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Apr. 10, 1968, Ser. No. 11,406
Term of patent 14 years
Int. Cl. D8—*02*
U.S. Cl. D26—1



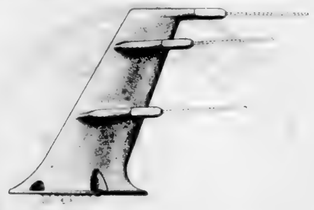
214,274
AUTOMATIC RECORDS RETRIEVAL UNIT
John L. Gianfagna, Staten Island, N.Y., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 29, 1967, Ser. No. 9,986
Term of patent 14 years
Int. Cl. D14—*02*
U.S. Cl. D26—5



214,275
SWITCH OPERATING HANDLE
Richard C. Rothweiler, Wauwatosa, Wis., assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Apr. 24, 1968, Ser. No. 11,601
Term of patent 14 years
Int. Cl. D13—*03*; D8—*02*
U.S. Cl. D26—13



214,276
AIRCRAFT ANTENNA MAST
William C. Rogers, Miami Springs, Fla. (P.O. Box 48-208, Miami, Fla. 33148)
Filed Dec. 16, 1968, Ser. No. 14,988
Term of patent 14 years
Int. Cl. D14—*03*
U.S. Cl. D26—14





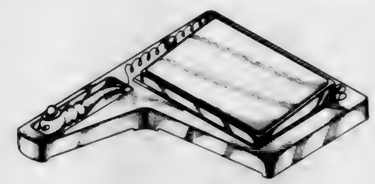
214,277
ORNAMENTAL ESCUTCHEON PLATE
Arie Cornelis De Vos, Son-Breugel, Netherlands, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 15, 1967, Ser. No. 8,281
Claims priority, application Austria Feb. 17, 1967
Term of patent 14 years
Int. Cl. D8—*03*; D14—*99*
U.S. Cl. D29—23



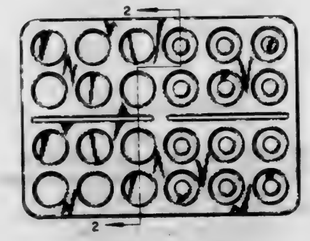
214,278
FIGURINE
Richard E. Thompson, San Diego, Calif., assignor to The San Diego Hockey Club, San Diego, Calif., a corporation of California
Filed Sept. 23, 1968, Ser. No. 13,685
Term of patent 14 years
Int. Cl. D11—*02, 99*
U.S. Cl. D29—23



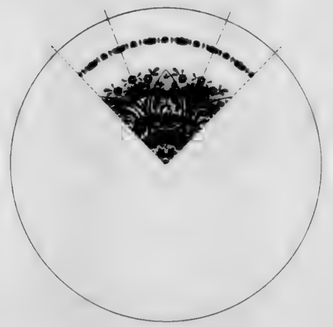
214,279
LIGHT WRITING TOY
Palmer J. Schoenfield, Evanston, Ill., assignor to Marvin Glass & Associates, Chicago, Ill., a partnership
Filed June 27, 1968, Ser. No. 12,529
Term of patent 14 years
Int. Cl. D21—*02*
U.S. Cl. D34—15



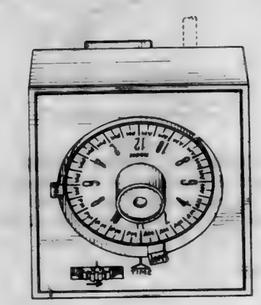
214,280
COOKIE BAKING SHEET
Elizabeth DePalmo, 109 S. Portland St., Youngstown, Ohio 44509
Filed July 15, 1968, Ser. No. 12,747
Term of patent 14 years
Int. Cl. D7—*02*
U.S. Cl. D44—1



214,281
PLATE OR SIMILAR ARTICLE
Ryotaro Takeoka, 221 Kitayamoto-cho, Nishikasugai-gun, Japan
Filed June 7, 1968, Ser. No. 12,257
Term of patent 7 years
Int. Cl. D7—*01*
U.S. Cl. D44—15



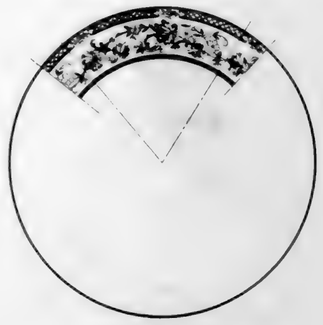
214,282
TIMING DEVICE OR SIMILAR ARTICLE
Raoul E. Rodriguez, Chicago, Ill., assignor to International Register Company, Chicago, Ill., a corporation of Illinois
Filed Aug. 19, 1968, Ser. No. 13,187
Term of patent 14 years
Int. Cl. D10—*05*
U.S. Cl. D42—7



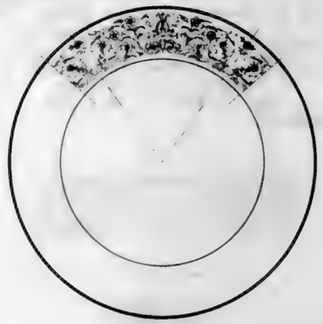
214,283
PLATE OR SIMILAR ARTICLE
Ryotaro Takeoka, 221 Kitayamoto-cho, Nishikasugai-gun, Japan
Filed June 5, 1968, Ser. No. 12,258
Term of patent 7 years
Int. Cl. D7—*01*
U.S. Cl. D44—15



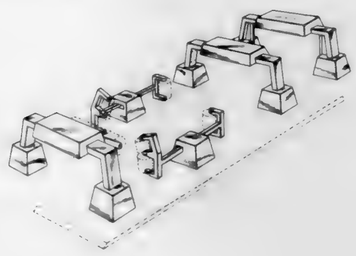
214,284
PLATE OR SIMILAR ARTICLE
Ryotaro Takeoka, 221 Kitayamoto-cho, Nishikasugai-gun, Japan
Filed June 7, 1968, Ser. No. 12,259
Term of patent 7 years
Int. Cl. D7—*01*
U.S. Cl. D44—15



214,285
PLATE OR SIMILAR ARTICLE
Ryotaro Takeoka, 221 Kitayamoto-cho, Nishikasugai-gun, Japan
Filed July 29, 1968, Ser. No. 12,954
Term of patent 7 years
Int. Cl. D7—*01*
U.S. Cl. D44—15



214,286
VEHICLE CLEANING APPARATUS
Earl Dallas Smith, 6202 E. Sage Drive, Scottsdale, Ariz. 85251, and Dale R. Oldham, 7028 N. 11th St., Phoenix, Ariz. 85020
Filed Dec. 18, 1967, Ser. No. 9,820
Term of patent 14 years
Int. Cl. D15—*06*
U.S. Cl. D49—12



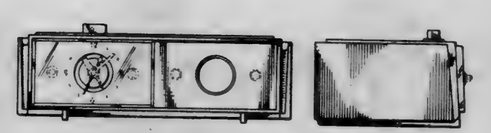
214,287
HEAD FOR A DUST MOP
Howard A. Anderson, Pittsburgh, Pa., assignor to Bissell Inc., Grand Rapids, Mich., a corporation of Michigan
Filed Feb. 9, 1968, Ser. No. 10,515
Term of patent 14 years
Int. Cl. D7—*06*
U.S. Cl. D49—21



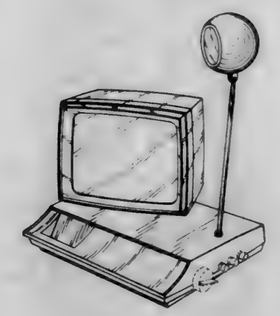
214,288
WASTE BASKET COVER
Archie E. Warnberg, P.O. Box 12647, Oklahoma City, Okla. 73112
Continuation-in-part of design application Ser. No. 8,631, Sept. 18, 1967. This application Feb. 29, 1968, Ser. No. 11,040
Term of patent 14 years
Int. Cl. D7—*06;* D6—*09*
U.S. Cl. D49—35



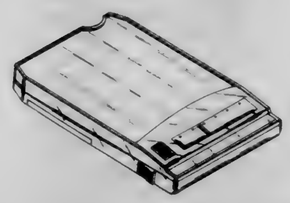
214,289
CLOCK RADIO
John K. Miles and Odin D. Lingle, Columbus, Ind., assignors to Arvin Industries, Inc., Columbus, Ind., a corporation of Indiana
Filed Dec. 26, 1967, Ser. No. 9,914
Term of patent 14 years
Int. Cl. D14—*03;* D10—*03, 99*
U.S. Cl. D56—4



214,290
DESK MODEL TELEVISION RECEIVER OR THE LIKE
Karl A. Miklas, Park Ridge, Ill., assignor to Warwick Electronics Inc., Chicago, Ill., a corporation of Delaware
Filed June 12, 1968, Ser. No. 12,309
Term of patent 14 years
Int. Cl. D14—*03*
U.S. Cl. D56—4



214,291
CARTRIDGE RADIO TUNER
David Krechman, 329 S. McCarty Drive, Beverly Hills, Calif. 90212
Filed Sept. 3, 1968, Ser. No. 13,376
Term of patent 14 years
Int. Cl. D14—*03*
U.S. Cl. D56—4

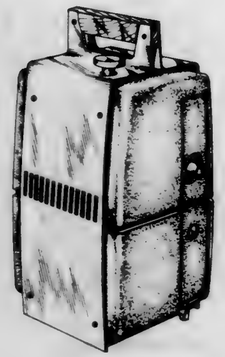


214,292
PAIR OF SUNGLASSES OR THE LIKE
Atherton R. Mitchell, San Francisco, Calif., assignor to Renauld International, Ltd., Fitchburg, Mass., a corporation of Delaware
Filed Sept. 12, 1968, Ser. No. 13,511
Term of patent 14 years
Int. Cl. D16—*08*
U.S. Cl. D57—1

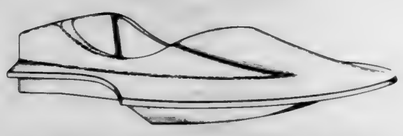




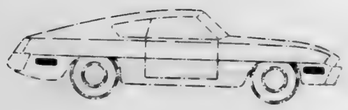
214,293
VACUUM PUMP
Morris Barnett, San Francisco, Calif., assignor to David B. Webb, Alamo, Calif.
Filed Apr. 22, 1968, Ser. No. 11,566
Term of patent 14 years
Int. Cl. D15—*02*
U.S. Cl. D65—1



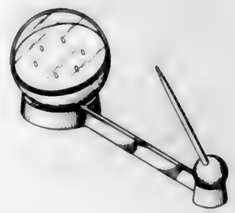
214,294
BOAT
Mack E. Stevens, 3656 Vigilance Drive, Palos Verdes, Calif. 90274
Continuation of design application Ser. No. 7,620, June 27, 1967. This application Feb. 23, 1968, Ser. No. 10,704
Term of patent 14 years
Int. Cl. D12—*06*
U.S. Cl. D71—1



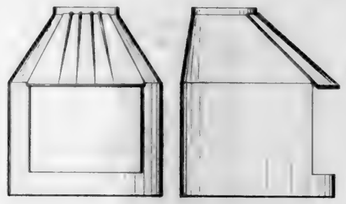
214,295
COMBINED AUTOMOBILE AND REFLECTORS
Peter Hedgewick, Windsor, Ontario, Canada, and Wallace A. Stanley, Southfield, Mich., assignors, by mesne assignments, to Reflex Corporation of Canada Limited, Windsor, Ontario, Canada, a corporation of Canada
Continuation of design application Ser. No. 6,089, Mar. 6, 1967. This application May 1, 1968, Ser. No. 11,727
Term of patent 14 years
Int. Cl. D12—*14;* D26—*99*
U.S. Cl. D72—1



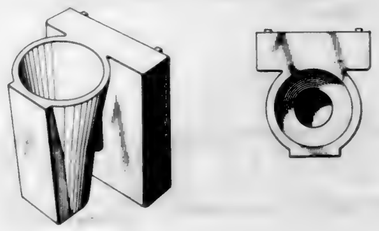
214,296
ILLUMINABLE DESK SET
Norman T. McFarland, Urbana, Ill., assignor to Marvin Glass & Associates, Chicago, Ill., a partnership
Filed May 1, 1968, Ser. No. 11,738
Term of patent 14 years
Int. Cl. D19—*02;* D26—*99*
U.S. Cl. D74—5



214,297
INDOOR CHARCOAL GRILL
Russell E. Ihde, 1116 Maple St., Neenah, Wis. 54956
Filed Apr. 23, 1968, Ser. No. 11,586
Term of patent 14 years
Int. Cl. D7—*04*
U.S. Cl. D81—10



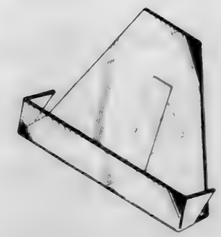
214,298
CIGARETTE EXTINGUISHER
Raymond V. Hart, San Angelo, Tex., assignor to San Angelo Die Casting and Manufacturing Co., Inc., San Angelo, Tex., a corporation of Texas
Filed Oct. 7, 1968, Ser. No. 13,879
Term of patent 14 years
Int. Cl. D27—*03, 99*
U.S. Cl. D85—2



214,299
LUGGAGE HANDLE OR SIMILAR ARTICLE
Anthony N. D'Elia, Riverdale, and Edward M. Stolarz, Yorktown Heights, N.Y., assignors to Presto Lock Co., Inc., Garfield, N.J., a corporation of New York
Original design application Aug. 11, 1967, Ser. No. 8,232. Divided and this application Apr. 18, 1968, Ser. No. 11,517
Term of patent 14 years
Int. Cl. D3—*01*
U.S. Cl. D87—2



214,300
PAMPHLET HOLDER
Albert S. Giesecke, 400 Montgomery St., San Francisco, Calif. 94104
Filed Apr. 4, 1968, Ser. No. 11,309
Term of patent 14 years
Int. Cl. D20—*02;* D6—*01*
U.S. Cl. D96—3



LIST OF DEFENSIVE PUBLICATIONS

APPLICANTS TO WHOM

DEFENSIVE PUBLICATIONS WERE ISSUED ON THE 27TH DAY OF MAY, 1969

"Published at the request of the applicant or owner in accordance with the Notice of April 11, 1968, 849 O.G. 1221. Identification is by serial number of the application."

Abbott, Thomas I. Printing plate element. 783,313, 5–27–69, Cl. 96—36.3.

Beavers, Dorothy J.: *See*—
Kalenda, Norman W., and Beavers. 794,405.

Caldwell, John R. Unsaturated, curable polyesters containing aromatic sulfonate salt groups. 767,845, 5–27–69, Cl. 260—49.

Chapman, Colquitt H.: *See*—
Martin, Emmett V., and Chapman. 802,748.

Conte, J. G.: *See*—
Sosis, Paul. 793,188.

Daddis, George E., E. A. Ehlers, and L. S. Matioli. Enlargement print frame and mailer. 801,536, 5–27–69, Cl. 206—45.2.

Dow Chemical Co., The: *See*—
Miller, Robert O., and Mattano. 641,140.

Ehlers, Edward A.: *See*—
Daddis, George E., Ehlers, and Matioli. 801,536.

Foster, Lloyd P. Triesters and their use as plasticizers. 794,416, 5–27–69, Cl. 260—31.6.

Hercules, Inc.: *See*—
Wagner, Richard L. 782,001.

Kalenda, Norman W., and D. J. Beavers. Dervivatives of benzo[f]quinazoline as antifoggants for photographic materials. 794,405, 5–27–69, Cl. 96—109.

Kibler, Charles J.: *See*—
Smith, James G., Kibler, and Schulken. 776,311.

Lee, William E. Photographic developer and process. 789,377, 5–27–69, Cl. 96—66.

Martin, Emmett V., and C. H. Chapman. Process for manufacturing spandex type yarn. 802,748, 5–27–69, Cl. 264—205.

Matioli, Leonard S.: *See*—
Daddis, George E., Ehlers, and Matioli. 801,536.

Mattano, Leonard A.: *See*—
Miller, Robert O., and Mattano. 641,140.

Miller, Robert O., and L. A. Mattano, to The Dow Chemical Co. Penolsulfonates as a filler in anionic detergent bars. 641,140, 5–27–69, Cl. 252—121.

Rissberger, Arthur C., Jr., and A. C. Runions. Package and method. 801,566, 5–27–69, Cl. 206—62.

Runions, Adrian C.: *See*—
Rissberger, Arthur C., Jr., and Runions. 801,566.

Schulken, Roger M., Jr.: *See*—
Smith, James G., Kibler, and Schulken. 776,311.

Smith, James G., C. J. Kibler, and R. M. Schulken, Jr. Method of preventing rearrangement of blocked copolyesters. 776,311, 5–27–69, Cl. 260—75.

Sosis, Paul, and J. G. Conte. Detergent composition and method of using the same. 793,188, 5–27–69, Cl. 252—161.

Wagner, Richard L., to Hercules, Inc. Coating process. 782,001, 5–27–69, Cl. 264—129.

LIST OF REISSUE PATENTEES

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British Drug Houses Ltd., The: *See*—
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Container Corp. of America: *See*—
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Cooper Roller Bearings Co. Ltd.: *See*—
Kay, Sydney. Re. 26,591.

Cummings, Jan G., and R. N. Maskell, to Container Corp. of America. Container for frozen product. Re. 26,592, 5–27–69, Cl. 229—14.

Haines, Robert M.: *See*—
Klass, Donald L., Haines, McEuen, and Martinek. Re. 26,586.

Kay, Sydney, deceased (by S. P. Kay, executor), to Cooper Roller Bearings Co. Ltd. Split roller bearings. Re. 26,591, 5–27–69, Cl. 308—236.

Kay, Sydney P.: *See*—
Kay, Sydney. Re. 26,591.

Klass, Donald L., R. M. Haines, R. B. McEuen, and T. W. Martinek, to Union Oil Co. of California. Electrokinetic weighing apparatus. Re. 26,586, 5–27–69, Cl. 177—1.

Lauer, Rodney F., to Westinghouse Electric Corp. Air conditioning system including reheat coils. Re. 26,593, 5–27–69, Cl. 62—160.

Marcovitch, Isaac and J.; said I. Marcovitch, assor. to said J. Marcovitch. Machine for roll-forming an annular workpiece including a separate rotatable core. Re. 26,594, 5–27–69, Cl. 72—80.

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Klass, Donald L., Haines, McEuen, and Martinek. Re. 26,586.

Maskell, Richard N.: *See*—
Cummings, Jan G., and Maskell. Re. 26,592.

McEuen, Robert B.: *See*—
Klass, Donald L., Haines, McEuen, and Martinek. Re. 26,586.

Murov, Issac I., M. J. Schloss, and F. V. Panno. Oral treatment appliance. Re. 26,589, 5–27–69, Cl. 15—22.

Neely, Samuel M. Floodlighting of athletic fields. Re. 26,588, 5–27–69, Cl. 240—3.

Panno, Francis V.: *See*—
Murov, Isaac I., Schloss, and Panno. Re. 26,589.

Petrow, Vladimir, A. J. Thomas, and O. Stephenson, to The British Drug Houses Ltd. Compound of betaine and chloral and method for preparing same. Re. 26,590, 5–27–69, Cl. 260—501.13.

Rotary Pen Corp.: *See*—
Von Arx, Marcel J. Re. 26,583.

Schloss, Morton J.: *See*—
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Spence, Peter M. Separable fastener. Re. 26,584, 5–27–69, Cl. 24—230.

Stephenson, Oliver: *See*—
Petrow, Vladimir, Thomas, and Stephenson. Re. 26,590.

Struthers Scientific and International Corp.: *See*—
Svanoe, Hans. Re. 26,585.

Svanoe, Hans, to Struthers Scientific and International Corp. Concentration of phosphoric acid. Re. 26,585, 5–27–69, Cl. 23—165.

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Union Oil Co. of California: *See*—
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Van Bael, Joseph. Plastering splash apron. Re. 26,582, 5–27–69, Cl. 52—99.

Von Arx, Marcel J., to Rotary Pen Corp. Writing device. Re. 26,583, 5–27–69, Cl. 401—31.

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Small, Earl J., Orchids, Inc.: *See*—
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AMP Inc.: *See*—
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Arvin Industries, Inc.: *See*—
Miles, John K., and Lingle. 214,289.

Barnett, Morris, to D. B. Webb. Vacuum pump. 214,293, 5–27–69, Cl. D65—1.

Bissell Inc.: *See*—
Yonkers, Robert A. 214,260.
Anderson, Howard A. 214,287.

Bonsack, Horst G. Bathtub. 214,270, 5–27–69, Cl. D23—55.

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Brunswick Corp.: *See*—
Kiekhaefer, Elmer C. 214,266.

Calgon Corp.: *See*—
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DePalmo, Elizabeth. Cookie baking sheet. 214,280, 5–27–69, Cl. D44—1.

De Vos, Arie C., to U.S. Philips Corp. Ornamental escutcheon plate. 214,277, 5–27–69, Cl. D29—23.

Drake, Eugene S. Safety pin or the like. 214,259, 5–27–69, Cl. D2—413.

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Gardner, Denise C., and M. I. Glass, to Marvin Glass & Associates. Girls apron. 214,256, 5–27–69, Cl. D2—228.

Gianfagna, John L., to Sperry Rand Corp. Automatic records retrieval unit. 214,274, 5–27–69, Cl. D26—5.

Giesecke, Albert S. Pamphlet holder. 214,300, 5–27–69, Cl. D96—3.

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McFarland, Norman T. 214,296.

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Hart, Raymond V., to San Angelo Die Casting & Mfg. Co., Inc. Cigarette extinguisher. 214,298, 5–27–69, Cl. D85—2.

Hedgewick, Peter, and W. A. Stanley, to Reflex Corp. of Canada Ltd. Combined automobile and reflectors. 214,295, 5–27–69, Cl. D72—1.

Holbrook, Harry W. Platform and steps unit. 214,264, 5–27–69, Cl. D13—7.

Ihde, Russell E. Indoor charcoal grill. 214,297, 5–27–69, Cl. D81—10.

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Kagen, David F., and J. G. MacDonald. Humidifier. 214,271, 5–27–69, Cl. D23—147.

Kiekhaefer, Elmer C., to Brunswick Corp. Snowmobile cowl. 214,266, 5–27–69, Cl. D14—24.

Krechman, David. Cartridge radio tuner. 214,291, 5–27–69, Cl. D56—4.

Lingle, Odin D.: *See*—
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Kagen, David F., and MacDonald. 214,271.

McConnell, Paul H., to United States Borax & Chemical Corp. Dispenser cap. 214,263, 5–27–69, Cl. D9—267.

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Miklas, Karl A., to Warwick Electronics Inc. Desk model television receiver or the like. 214,290, 5–27–69, Cl. D56—4.

Miles, John K., and O. D. Lingle, to Arvin Industries, Inc. Clock radio. 214,289, 5–27–69, Cl. D56—4.

Mitchell, Atherton R., to Renauld International, Ltd. Pair of sunglasses or the like. 214,292, 5–27–69, Cl. D57—1.

Moore, Donald L., P. M. Fricke, Jr., and R. R. Spilman, to Hamilton Cosco, Inc. Folding chair. 214,267, 5–27–69, Cl. D15—1.

Oldham, Dale R.: *See*—
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Pautrie, Riccardo, to AMP Inc. Electrical connector housing having a panel mounting construction. 214,272, 5–27–69, Cl. D26—1.

Phillips, Harold C. Building block. 214,268, 5–27–69, Cl. D18—2.

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Rodrigues, Raoul E., to International Register Co. Timing device or similar article. 214,282, 5–27–69, Cl. D42—7.

Rogers, William C. Aircraft antenna mast. 214,276, 5–27–69, Cl. D26—14.

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Takeoka, Ryotaro. Plate or similar article. 214,283, 5–27–69, Cl. D44—15.

Takeoka, Ryotaro. Plate or similar article. 214,284, 5–27–69, Cl. D44—15.

Takeoka, Ryotaro. Plate or similar article. 214,285, 5–27–69, Cl. D44—15.

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Ackerman, Abram, and Schneider, Kurt H., to A & M Instrument, Inc. Photoelectric system for detecting meter pointer position. 3,446,981, 05-27-69, Cl. 250-231.

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Adolph, Horst G., to United States of America, Navy. Process of preparing fluorodinitroethanol or fluorodinitromethane from fluorotrinitromethane. 3,446,857, 05-27-69, Cl. 260-633.

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Alexander, Gordon L., to Warwick Electonics Inc. Tab interlock. 3,446,090, 05-27-69, Cl. 074-483.

Alfie, Conrad L. Scaffoladder, decorator model. 3,446,310, 05-27-69, Cl. 182-156.

Alfie, Conrad L. Scaffoladder, industrial model. 3,446,311, 05-27-69, Cl. 182-156.

Alig, Robert L., and Rappaport, George, to General Motors Corporation. Breathable polyvinyl chloride material and method of making same. 3,446,693, 05-27-69, Cl. 161-160.

Alimanestiano, Constantin. Portable conveyor. 3,446,304, 05-27-69, Cl. 180-009.24

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American Can Company: *See*—
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Bailey, Frederick Arthur, and Montgomery, William H., to Rotaflex of Canada Limited. Lamp housing. 3,446,955, 05-27-69, Cl. 240-046.59

Bailey, James R., and Bokosky, Robert J., to Switchcraft Inc. Panel mounting for electrical components and the like. 3,446,467, 05-27-69, Cl. 248-027.

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Bakalyar, Stephen R., and Kramasz, Joseph, Jr., to Varian Associates. Method and apparatus for chromatography. 3,446,057, 05-27-69, Cl. 073-023.1

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Balding, Victor Horace. Machine tools. 3,445,923, 05-27-69, Cl. 029-568.

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Ballu, Louis Henri Denis Marie. Amphibious vehicles. 3,446,174, 05-27-69, Cl. 115-001.

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Beach, Willard C., deceased, and Beach, Mary B., (by National Bank and Trust Company of Central Pa., administrator). Shaft thimble and strap for racing harness. 3,445,989, 05-27-69, Cl. 054-002.

Beard, Walter C., Jr., and Kotuby, Paul M., to Risdom Manufacturing Company, The. Aerosol valve actuator button. 3,446,478, 05-27-69, Cl. 251-297.

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Beizer, Boris, to United States of America, mesne. Rader landmass simulation. 3,446,903, 05-27-69, Cl. 035-010.4

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Bender, Samuel. Dose time indicator closure means for receptacles. 3,446,179, 05-27-69, Cl. 116-121.

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Bliss, E. W., Company: *See*—
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Ballintine, Oscar P., Jr., 3,446,051.
Durbin, Stanley H., 3,447,079.
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Riblett, Harry C., Jr., 3,446,461.
Ringler, John S., 3,446,499.
Sherwood, William George, 3,446,450.

Blohm & Voss A.G.: *See*—
Sprengel, Heinz Ferdinand Johannes, 3,446,363.

Bobeck, Andrew H., to Bell Telephone Laboratories, Incorporated. Magnetic memory using a bipolar word pulse during a write operation. 3,447,140, 05-27-69, Cl. 340-174.

Bobowski, George: *See*—
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Bobrick Corporation, The: *See*—
McCray, Herbert S., 3,446,405.

Bodine, Albert G., Jr. Sonic vibration generator. 3,446,084, 05-27-69, Cl. 074-087.

Bodine, Albert G. Sonic process and apparatus for cleaning pipes. 3,446,666, 05-27-69, Cl. 134-001.

Boehler, Gabriel D., and Foshag, William F., to Aerophysics Company. Marginal terrain vehicle. 3,446,175, 05-27-69, Cl. 115-001.

Boeing Company, The: *See*—
Brasier, Robert E., 3,446,560.

Bogert, Howard Z., and Miner, Jay G., to Philco-Ford Corporation. Aperiodic arithmetic calculator. 3,447,136, 05-27-69, Cl. 340-172.5

Bohannon, Ida M. Shoe cleaning device. 3,445,875, 05-27-69, Cl. 015-036.

Boissevain, Mathew G., and Schneebeli, Jean Pierre. Liquid sealed continuous combustion engine. 3,446,016, 05-27-69, Cl. 060-039.45

Bokosky, Robert J.: *See*—
Bailey, James R., and Bokosky, Robert J. 3,446,467.

Boldt, Heinz, to Borsig Aktiengesellschaft. Valve with ball-shaped stop cock. 3,446,479, 05-27-69, Cl. 251-315.

Bolkow Gesellschaft mit beschrankter Haftung: *See*—
Planitzer, Erich, Maus, Eicke, Multerer, Albert, Schober, Erwin, and Schindler, Werner, 3,446,112.

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Bongiorno, Salvatore J., to Chemical Construction Corporation. Process and apparatus for reforming hydrocarbons. 3,446,747, 05-27-69, Cl. 252-373.

Bonse, Ulrich Karl, and Hart, Michael, to Research Corporation. X-ray interferometer using three spaced parallel crystals. 3,446,961, 05-27-69, Cl. 250-051.5

Bookout, Charles C., to Ford Motor Company. Transverse automotive vehicle driveline with a four-speed ratio automatic transmission and simulated overdrive. 3,446,095, 05-27-69, Cl. 074-763.

Booth, Frederick C.: *See*—
Radke, Donald G., and Booth, Frederick C. 3,446,533.

Bordenca, Carl, and Derfer, John M. β-Dialkylaminoalkyl ethers and thioethers. 3,446,843, 05-27-69, Cl. 260-563.

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Borg-Warner Corporation: *See*—
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Geis, Everett R., 3,447,050.
Stephens, William T., and Prevallet, David N., 3,446,020.

Born, Alfons, to Dom-Somen GmbH. Method and apparatus for sorting coded seed bags. 3,446,351, 05-27-69, Cl. 209-111.7

Bornstein, Richard W., to Torrington Manufacturing Company, The. Transverse flow blower for discharging fluid in a path defined by a surface. 3,446,426, 05-27-69, Cl. 230-125.

Borsig Aktiengesellschaft: *See*—
Boldt, Heinz, 3,446,479.

Bosak, William L. Therapeutic device. 3,446,210, 05-27-69, Cl. 128-254.

Bosch, Robert G.m.b.H.: *See*—
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Kuhn, Edgar, 3,447,065.

Botton, Roger, and Steinmetz, Andre, to Produits Chimiques Pechiney-Saint-Gobain. Iron-based catalyst, their preparation and their uses. 3,446,589, 05-27-69, Cl. 023-193.

Bottum, Edward W. Heat exchanger. 3,446,032, 05-27-69, Cl. 062-513.

Bouche, Raymond R. Vibration damper. 3,446,907, 05-27-69, Cl. 174-042.

Boucraut, Michel, and Toth, Imre, to Institut de Recherches de la Siderurgie Francaise. Process and apparatus for pneumatically classifying pulverulent material. 3,446,353, 05-27-69, Cl. 209-474.

Boudreauz, Joseph R., and Roberts, Reginald F., Jr., to Dow Chemical Company, The. Mixed cellulose ethers. 3,446,795, 05-27-69, Cl. 260-231.

Bounous, Daniel B., to Southern Textile Machinery Company, Inc., mesne. Apparatus for inspecting and sewing stockings. 3,446,166, 05-27-69, Cl. 112-002.

Bovee, Loren L.: *See*—
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Bowden, George F., and Gilbert, John R., to Symons Mfg., Company. Concrete wall form panel with partial studding. 3,446,470, 05-27-69, Cl. 249-192.

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Bowles, Ronald E., and Horton, Billy M. Fluid amplifier. 3,446,078, 05-27-69, Cl. 137-081.5

Bowman, Ronald, to Whittaker Corporation, mesne. Stress sensor. 3,446,064, 05-27-69, Cl. 073-088.5

Box, E. O., Jr., to Phillips Petroleum Company. Disproportion of propane. 3,446,868, 05-27-69, Cl. 260-676.

Boyce, David B., Minicucci, Peter, Jr., and Stegenga, Jerry A., to Milgo Electronic Corporation. Depository packaging system. 3,446,328, 05-27-69, Cl. 194-004.

Boykin, Curtis R., to Westinghouse Electric Corporation. Circuitry for protecting a push-pull switching driver stage upon occurrence of a short circuit at the output thereof. 3,447,035, 05-27-69, Cl. 317-031.

Bozyk, David B. Package. 3,446,338, 05-27-69, Cl. 206-041.2

Braathen, Finn N.: *See*—
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Bragman, Clifford I. Thermal barrier of insulating material and metal frame elements. 3,445,974, 05-27-69, Cl. 052-309.

Branagan, Edward F. Electronic circuit test board. 3,447,039, 05-27-69, Cl. 317-101.

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Brasier, Robert E., to Boeing Company, The. Three directional optical alignment instrument. 3,446,560, 05-27-69, Cl. 356-146.

Brastow, Edgar R.: *See*—
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Braun, Howard E.: *See*—
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Braun, Oskar, Gross, Richard, and Nakaten, Herbert, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Aqueous solutions of phthalocyanine pigments and process for preparing them. 3,446,569, 05-27-69, Cl. 008-084.

Brauner, Shlomo. Process of making moulded compositions particularly for footwear. 3,445,874, 05-27-69, Cl. 012-146.

Bray, Ellis E., and Zimmerman, John R., to Mobil Oil Corporation. Geochemical exploration. 3,446,597, 05-27-69, Cl. 023-230.

Brenia, Paul S., to Tridair Industries, mesne. Cargo carrier interlock system. 3,446,462, 05-27-69, Cl. 244-118.

Brero & Co.: *See*—
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Breslow, David S., to Hercules Incorporated. Phosphonitrilic compounds. 3,446,876, 05-27-69, Cl. 260-927.

Brinckmann, Paul C., to Kewanee Oil Company, mesne. Sodium activated cesium iodide scintillator. 3,446,745, 05-27-69, Cl. 252-301.4

Bristol Siddeley Engines Limited: *See*—
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British Petroleum Company Limited, The: *See*—
Stern, Hugh Walter, and Jones, John Robert, 3,446,866.

British Titan Products Company Limited: *See*—
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Bromer, Heinz, Meinert, Norbert, and Ahl, Demetrius, to Leitz, Ernst, G.m.b.H. Optical flint glasses. 3,446,638, 05-27-69, Cl. 106-052.

Bromley, Kenneth W., to United States Steel Corporation, mesne. Blanks for ready erection into box-like containers. 3,446,415, 05-27-69, Cl. 229-030.

Brook, Brian Neville: *See*—
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Brooks, Parkman T., to United States of America, Interior. Preparation of high-purity nickel and cobalt. 3,446,720, 05-27-69, Cl. 204-112.

Broschke, Heinrich: *See*—
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Brose, Barry J. Idler spool assembly for use in developing photographic film by viscous developer. 3,446,410, 05-27-69, Cl. 226-191.

Brouwer, Charles W., and Tata, Raymond V., to Leesona Corporation. Drive mechanism. 3,446,087, 05-27-69, Cl. 074-190.

Broverman, Alvin Y., and Wilburn, Garlington C., to Westinghouse Electric Corporation. Air cooled transformer. 3,447,112, 05-27-69, Cl. 336-060.

Brown Engineering Company: *See*—
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Brown, Harry W., and Thompson, Larry D., to Cutler-Hammer, Inc., mesne. Solid state power controller for A. C. load devices. 3,447,057, 05-27-69, Cl. 318-345.

Brown, Omar L., to Fraze, Ermal C., mesne. Easy-opening can end with nonremovable tab. 3,446,389, 05-27-69, Cl. 220-048.

Brown, Paul M., Hopper, Nolan D., Kampf, Richard S., and Lord, Walter V., to Philco-Ford Corporation. Film developing apparatus. 3,446,134, 05-27-69, Cl. 095-089.

Brownsword, John E., to Goodyear Tire & Rubber Company, The. Soluble cured polyester polyurethanes. 3,446,781, 05-27-69, Cl. 260-075.

Bruckmann, Paul, Logemann, Heino, and Suling, Carlhans, to Farbenfabriken Bayer Aktiengesellschaft. Transparent dentures. 3,446,875, 05-27-69, Cl. 260-885.

Brule Incinerator Corporation: *See*—
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Brunswick Corporation: *See*—
Torresen, Robert, 3,445,876.
Weichselbaum, Theodore E., 3,446,751.

Bschorr, Oskar. Vibration generator. 3,446,059, 05-27-69, Cl. 073-071.5

Bschorr, Oskar, and Kubanke, Detlev. Siren for the generation of sine wave sound and random noise. 3,446,182, 05-27-69, Cl. 116-147.

Buchanan, John G., to Johnson Wire Works Limited, The. Wear insert for paper machine drainage foil. 3,446,702, 05-27-69, Cl. 162-374.

Buck, Ronald H., Jr., to Eaton Yale & Towne Inc. Process for making permanently baked shell molds. 3,446,265, 05-27-69, Cl. 164-021.

Budnowski, Manfred, to Henkel & Cie GmbH. Process for the preparation of substituted oxazolidones. 3,446,814, 05-27-69, Cl. 260-307.

Bullard Company, The: *See*—
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Bullard, Edward P., III, to Bullard Company, The. Retractable tool support. 3,446,117, 05-27-69, Cl. 090-055.

Bulldozer Koji Co., Ltd.: *See*—
Ohcho, Ken, Ono, Hiromu, and Kanefusa, Yoshikiyo, 3,446,173.

Bullough, Leon D. Fluid power drive apparatus. 3,446,019, 05-27-69, Cl. 060-052.

Buludoza Koji Kabushiki Kaisha: *See*—
Ohcho, Ken, Ono, Hiromu, and Kanefusa, Yoshikiyo, 3,446,173.

Bundus, Robert H.: *See*—
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Bunker-Ramo Corporation, The: *See*—
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Burgarella, John P., to Polaroid Corporation. Exposure control apparatus for photographic camera. 3,446,129, 05-27-69, Cl. 095-010.

Burge, Keith W. Package of cans. 3,446,346, 05-27-69, Cl. 206-065.

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Burke, William E.: *See*—
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Burnham, Robert J. Fiber-tip writing pen with replaceable cartridge. 3,446,563, 05-27-69, Cl. 401-199.

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Burroughs Corporation: *See*—
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Buschmann, Horst, and Goide, Karl Heinz, to Schloemann Aktiengesellschaft. Apparatus for the transporting of the intermediate container of continuous casting machines. 3,446,269, 05-27-69, Cl. 164-281.

Bushnell, Thomas W., to Clement, J. W., Company. Web slitting machine. 3,446,104, 05-27-69, Cl. 083-102.

Buswell, Richard F., Sederquist, Richard A., and Setzer, Herbert J., to United Aircraft Corporation. Method for generating hydrogen from liquid hydrogen-containing feedstocks. 3,446,594, 05-27-69, Cl. 023-210.

Butler, Eugene B., Cardis, Donald R., and Schick, Harold P., to General Tire & Rubber Company, The. Method in laminating reinforced sheet. 3,446,686, 05-27-69, Cl. 156-224.

Butler, Michael Brian Neilson: *See*—
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Butt, Ronald John: *See*—
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Buttery, Roger A., to Quickfit & Quartz Limited. Seal assemblies. 3,446,152, 05-27-69, Cl. 103-111.

Buzas, August J., and Schenck, Remsen T. E., to Keystone Chemurgic Corporation. Process for making aluminum alkoxides and separation of impurities therefrom. 3,446,828, 05-27-69, Cl. 260-448.

Byland, Henry L., and Bates, Bradford, to Advance Data Systems Corporation. Turnstile mechanism. 3,445,962, 05-27-69, Cl. 049-047.

Cadillac Gage Company: *See*—
Howland, Donald C., 3,446,229.

Cahoy, Roger P., and Coyne, Donald M., to Gulf Oil Corporation, mesne. Novel oxidation catalyst compositions. 3,446,753, 05-27-69, Cl. 252-437.

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Calderhead, Henry J., deceased (by Calderhead, Catharine E., administratrix), and Puljer, Philip F., to Bird Electronic Corporation. Thermocouple milliwattmeter. 3,447,082, 05-27-69, Cl. 324-106.

Caldwell, John R.: *See*—
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California Institute Research Foundation: *See*—
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Camacho, Julian, to Jennings Radio Manufacturing Corporation. Vacuum relay having a pivotally mounted armature. 3,446,926, 05-27-69, Cl. 200-144.

Cambou, Francis G., and Cotin, Francis L., to Centre National de la Recherche Scientifique. Ionization type gauge usable over a wide range of pressures. 3,446,958, 05-27-69, Cl. 250-043.5

Camco Incorporated: *See—*
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Campbell, Iain Brown, to Babcock & Wilcox, Limited. Liquid fuel burners. 3,446,439, 05-27-69, Cl. 239-419.3

Canadian Industries Limited: *See—*
Miller, Roger M., Mueller, Bruno, and Sorochan, Walter G., 3,446,884.

Cane, Nicholas William, and Rushton, William, to Lightning Fasteners Limited. Methods and apparatus for making staples. 3,446,009, 05-27-69, Cl. 059-075.

Cannon, Craig W., to Allis-Chalmers Manufacturing Company. Hydraulic transmission system for driving steerable wheels of a motor vehicle. 3,446,305, 05-27-69, Cl. 180-043.

Canterbury, Howard M. Automatic hydrant dripping apparatus. 3,446,226, 05-27-69, Cl. 137-062.

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Caps (Research) Limited: *See—*
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Cardis, Donald R.: *See—*
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Carlisle, Benjamin H., Daggs, Kenneth L., and Sauter, John D., to Clark Controller Company, The. Electrical control circuit for cyclically operating apparatus. 3,446,985, 05-27-69, Cl. 307-113.

Carlisle Chemical Works, Inc.: *See—*
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Carlisle, Raymond Melvin: *See—*
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Carlson, Harry A.: *See—*
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Carman, Charles V.: *See—*
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Carpenter, Kenneth: *See—*
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Carr, Vernon R., to Goodyear Tire & Rubber Company, The. Panel assembly. 3,445,972, 05-27-69, Cl. 052-098.

Carrigan, Robert J., and Stone, Ralph K., to United States Envelope Company. Envelop with external pocket for removable tag. 3,446,421, 05-27-69, Cl. 229-070.

Carroll, Alfred J. Air distributor manifold and valve disk. 3,446,423, 05-27-69, Cl. 230-046.

Carson, Arthur N., and Ujhelyi, Gabor K., to Carson Laboratories, Inc. Optical associative memory. 3,447,138, 05-27-69, Cl. 340-173.

Carson Laboratories, Inc.: *See—*
Carson, Arthur N., and Ujhelyi, Gabor K., 3,447,138.

Carter, George J. Nonpercussive viscous-shear milling process for platy materials. 3,446,442, 05-27-69, Cl. 241-015.

Caspersson, Torbjorn Oskar, and Lomakka, Gosta Mattias. Apparatus for photometric analysis. 3,446,562, 05-27-69, Cl. 356-222.

Castellani, Edward J.: *See—*
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Castello, Anthony M.: *See—*
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Castiello, Ignacio Aranguren, Sierra, Octavia Vasquez, and Olnick, Jay E., to Union Starch & Refining Co., Inc., and Indiana and Aranguren y Cie., S.A. Separating device. 3,446,663, 05-27-69, Cl. 127-025.

Castiello, Ignacio Aranguren, Sierra, Octavio Vasquez, and Olnick, Jay E., to Union Starch & Refining Co., Inc., and Indiana and Aranguren y Cie., S.A.,. Fiber recovery process. 3,446,665, 05-27-69, Cl. 127-067.

Castrucci, Paul P., to International Business Machines Corporation. Semiconductor circuits, devices and methods of improving electrical characteristics of latter. 3,446,995, 05-27-69, Cl. 307-304.

Caterpillar Tractor Co.: *See—*
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Catinat, Marcel F.: *See—*
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C.A.V. Limited: *See—*
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Cavalli, Arnold, and Magid, Louis, to Hoffmann-La Roche Inc. Encapsulated acacia syrup adhesive overlayed N- acetyl-p-aminophenol beadlet cores retaining thereon destromethorphan, chlorpheniramine, and phenylephrine. 3,446,891, 05-27-69, Cl. 424-034.

Cavalli, Arnold, and Magid, Louis, to Hoffmann-La Roche Inc. Vitamin compositions produced by direct compression. 3,446,899, 05-27-69, Cl. 424-280.

Cavanagh, Patrick Edgar, to Premium Iron Ores Limited. Method of raising fish. 3,446,185, 05-27-69, Cl. 119-003.

Cavaterra, Enrico, and Ferlazzo, Natale, to Montecatini Edison S.p.A. Catalytic ammoxidation of olefins to nitriles. 3,446,834, 05-27-69, Cl. 260-465.3

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Cebal GP: *See—*
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Celanese Coatings Company: *See—*
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Centre Electronique Horloger S.A.: *See—*
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Certain-Feed Saint Gobain Insulation Corporation: *See—*
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Ceskoslovenska Akademie Ved: *See—*
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Cetrone, Vincent B.: *See—*
Oakes, Grant A., and Cetrone, Vincent B. 3,446,052.

Chaikin, Malcolm, Dircks, Alexander Douglas, and Rokfalussy, Desmond Michael. Combing machines for wool and other textile fibres. 3,445,896, 05-27-69, Cl. 019-123.

Chambers, James C. Dispenser for selecting quantities of like bodies. 3,446,397, 05-27-69, Cl. 221-296.

Chang, Wen-Hsuan, to PPG Idustries, Inc.6,9 Dioxa-1-spiro [4.4] nonene in the killing of insects. 3,446,898, 05-27-69, Cl. 424-278.

Chao, Tai S., and Eickemeyer, Daniel B., to Sinclair Research, Inc. Ester base lubricant compositions containing an aromatic amine and an organic thiophosphite or thiophosphonate. 3,446,738, 05-27-69, Cl. 252-046.7

Charles, George K., to Cow & Gate Limited. Apparatus for applying pressure-sensitive labels to cylindrical articles. 3,446,690, 05-27-69, Cl. 156-446.

Chechak, Albert J., and Robeson, Charles D., to Eastman Kodak Company. Carotenoid compounds. 3,446,801, 05-27-69, Cl. 260-240.

Chemical Construction Corporation: *See—*
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Chemische Werke Huls AG: *See—*
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Chemokomplex Gep es Berendezes Export-Import Vallalat: *See—*
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Cheroff, George, and Hochberg, Frederick, to International Business Machines Corporation. method for fabricating insulated-gate field effect transistors having controlled operating characteristics. 3,445,924, 05-27-69, Cl. 029-571.

Chevron Research Company: *See—*
Marquis, David M., 3,446,743.

Chi, Chang W., and Macriss, Robert A., to Institute of Gas Technology, The. Air conditioning device using adsorption of moisture. 3,446,031, 05-27-69, Cl. 062-271.

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Chicago Pneumatic Tool Company: *See—*
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Chiola, Vincent, and Vanderpool, Clarence D., to Sylvania Electric Products, Inc. Procers for producing heteropoly metal acids. 3,446,577, 05-27-69, Cl. 023-023.

Chrome Plate, Inc.: *See—*
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Clachan, Margaret L., McGrail, Patrick Terrence, and Shephard, Basil R., to Bexford Limited. Plastic film coated with antistatic agent. 3,446,651, 05-27-69, Cl. 117-073.

Clark, Charles Alfred, Butt, Ronald John, and Mason, John Jefferson, to International Nickel Company, The. Production of grain-oriented silicon steels. 3,446,680, 05-27-69, Cl. 148-112.

Clark Controller Company, The: *See—*
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Clark, Harold E., to Xerox Corporation. Xerographic imaging employing a selectively removable layer. 3,446,616, 05-27-69, Cl. 096-001.5

Clark, Howard P., Barnhill, Kenneth S., Jr., and Wilson, Martin, to United States Borax & Chemical Corporation. Process for recovering potash values. 3,446,443, 05-27-69, Cl. 241-020.

Clark, Raymond C., to Huyck Corporation. Ventilation system for a papermaking machine. 3,445,938, 05-27-69, Cl. 034-116.

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Clayton, David P.: *See—*
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Cleland, David Blackhall, to Imperial Chemical Industries Limited. Detonator locating device. 3,446,047, 05-27-69, Cl. 072-056.

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Coates, Harold, and Hoye, Peter Albert Theodore, to Albright & Wilson (Mfg.) Limited. Preparation of alkyltin chlorides, bromides and iodides. 3,446,826, 05-27-69, Cl. 260-429.7

Coats, Fred Haden, Jr., to Du Pont de Nemours, E. I., and Company. Nonaqueous lubricating composition for nylon tire cord yarn. 3,446,734, 05-27-69, Cl. 252-008.8

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Collis, Ronald T. H. Meteorological lidar system with an improved information display. 3,446,556, 05-27-69, Cl. 356-005.

Colosimo, Louis E., to Huck Manufacturing Company. Chuck jaw. 3,446,509, 05-27-69, Cl. 279-007.

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Columbia Ribbon and Carbon Manufacturing Co., Inc.: *See—*
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Cooke, Claude E., Jr., to Esso Production Research Company. Miscible displacement oil recovery process. 3,446,282, 05-27-69, Cl. 166-009.

Cooper, Dale W., and Kuhns, Perry W., to United States of America, National Aeronautics and Space Administration. Generator for a space power system. 3,447,003, 05-27-69, Cl. 310-054.

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Cullen, Roy H., Elliott, Charles H., Aker, Jimmie R., and Burke, William E., to Youngstown Sheet and Tube Company, The, mesne. Flexible drill collar. 3,446,297, 05-27-69, Cl. 175-301.

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Curtin, William J. Telephone answering system providing multiple answering points with centralized or decentralized operation. 3,446,919, 05-27-69, Cl. 179-027.

Curtiss, Lawrence M., Castellani, Edward J., and Frey, William G., to Thomas & Betts Corporation. Grounding sheath connector. 3,446,910, 05-27-69, Cl. 174-075.

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Danielson, Worrell M., to Enterprise Railway Equipment Company. Hopper discharge arrangement. 3,446,538, 05-27-69, Cl. 302-052.

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Deal, Roger L., and Hansen, Robert W., to Jennings Radio Manufacturing Corporation. Ground-isolated electromagnetically operated vacuum relay. 3,447,107, 05-27-69, Cl. 335-151.

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Dowben, Robert M., to Northwestern University. Methods for treating muscular dystrophy with a 1- methyl-Δ^1-androsten-17β-ol-3-one and digitoxin. 3,446,895, 05-27-69, Cl. 424-182.

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Driscoll, Jesse L. Pendant earring having toggle attaching means. 3,446,034, 05-27-69, Cl. 063-013.

Drost, Wilfred, to Union Carbide Corporation. Desiccant bodies. 3,446,645, 05-27-69, Cl. 117-026.

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Dubuit, Louis Gilbert. Automatic devices for distributing and directing various objects such as flasks, tubes or the like. 3,446,335, 05-27-69, Cl. 198-033.

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Dugan, William F., and Swanke, Roy L., to Dynamics Corporation of America. Explosion-proof blender motor and housing. 3,447,000, 05-27-69, Cl. 310-050.

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Giner, Jose D., to United Aircraft Corporation. Method and apparatus for converting hydrogen- containing feedstocks. 3,446,674, 05-27-69, Cl. 136-086.
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Keister, Oliver B., Jr., Hursh, Charles M., and Link, John G. 3,446,373.

Liquid Controls Corporation: *See—*
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Little, Ellwood E., to Coleman Company, Inc. The. Self-locking adjustable tent pole. 3,446,523, 05-27-69, Cl. 287-058.

Little, Ronald F.: *See—*
Amsler, Clyde R., Brastow, Edgar R., and Little, Ronald F. 3,446,080.

Liwski, Piotr P. M.: *See—*
Ford, Floyd E., Liwski, Piotr P. M., Potter, Nelson H., and Sizemore, Kenneth O. 3,447,059.

Llewellyn, Peter M.: *See—*
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Llewelyn, Geirionydd, and Ubank, Raymond George, to Bristol Siddeley Engines Limited. Method of producing refractory metal articles. 3,446,655, 05-27-69, Cl. 117-129.

Lloyd, Roger A., to United States of America, Agriculture. Apparatus for impregnating and chemically converting cellulose-containing materials. 3,446,701, 05-27-69, Cl. 162-237.

Lockheed Aircraft Corporation: *See—*
Hancock, John P., 3,446,223.
Karlak, Robert F., 3,446,643.
Smith, Richard L., 3,446,650.
Thornburg, Francis L., and Turnley, George E., Jr., 3,446,177.

Lockshaw, William Paul, to International Telephone and Telegraph Corporation. Sweep generator having a field-effect transistor between the timing and discharge circuits. 3,447,099, 05-27-69, Cl. 331-111.

Loeb, Sidney, Wasilewski, Stanley, Selover, Edward, and Balla, Andre, to University of California, The Regents of the. Desalination assembly and its method of manufacture. 3,446,359, 05-27-69, Cl. 210-490.

Loewe, Hans: *See—*
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Loffler, Walther. Container for liquids and means for discharging liquids therefrom. 3,445,867, 05-27-69, Cl. 004-288.

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Logus, Anthony T., to Pettibone Mullisen Corporation. Selective steering with single valve. 3,446,307, 05-27-69, Cl. 180-079.2

Loiacono, Gabriel M., and Nassau, Kurt, to Bell Telephone Laboratories, Incorporated. Growth of lithium niobate crystal. 3,446,603, 05-27-69, Cl. 023-301.

Lomakka, Gosta Mattias: *See—*
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Long, Charles-Jean: *See—*
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Lopez, John A., and Hallstrom, James R., to Shell Oil Company. Epoxy resin traffic paint compositions. 3,446,762, 05-27-69, Cl. 260-018.

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Lord, Walter V.: *See—*
Brown, Paul M., Hopper, Nolan D., Kampf, Richard S., and Lord, Walter V. 3,446,134.

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Louviere, Allen J., and Nicholson, Leonard S. Underwater survey. 3,447,124, 05-27-69, Cl. 340-004.

Love, Robert G.: *See—*
Moeller, R. E., Love, Robert G., and Pittman, Forrest C. 3,446,667.

Lowe, Charles Thomas. Hinges, butt type. 3,445,883, 05-27-69, Cl. 016-128.

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Loxley, Thomas E., Sloop, James L., and Wieland, Michael S., to United States of America, Navy. Multiple missile velocity measuring apparatus. 3,447,077, 05-27-69, Cl. 324-070.

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Wiese, Herbert F., 3,446,735.

Lucas, Joseph, (Industries) Limited: *See—*
Freeman, Frank George, 3,446,472.

Lucas, Roy N.: *See—*
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Ludwig, Herbert, deceased (by Koch, Friedrich Loewe, Hans, joint executors), to Desma-Werke Gesellschaft mit beschrankter Haftung. Method of producing footwear. 3,446,887, 05-27-69, Cl. 264-244.

Luedtke, William David. Disposable coffee drip brewer. 3,446,624, 05-27-69, Cl. 099-071.

Luksas, Anthony J.: *See—*
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Lyons, Mark F., and Weidenbaum, Bernhardt, to United States of America, Atomic Energy Commission. Method of operating a nuclear reactor. 3,446,703, 05-27-69, Cl. 176-037.

Maas, Dieter: *See—*
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Macha, August. Device for facilitating self-introduction of medicinal drops in eyes. 3,446,209, 05-27-69, Cl. 128-233.

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Chi, Chang W., and Macriss, Robert A. 3,446,031.

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Magagnoli, Remo, and Coraluppi, Enzo, to Ferrania, S.p.A. Process for the preparation of color images using 2-ureido phenolic couplers. 3,446,622, 05-27-69, Cl. 096-055.

Magda, Robert J., and Giordano, Anthony, Jr., to Auto-Lawn, Inc. Roller cart for lawn treatment. 3,446,165, 05-27-69, Cl. 111-011.

Mageli, Orville Leonard, and Bolton, Douglas John, to Wallace & Tierman Inc. Esters of 1,1,3,3-tetramethylbutyl hydroperoxide. 3,446,831, 05-27-69, Cl. 260-453.

Magid, Louis: *See—*
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Cavalli, Arnold, and Magid, Louis 3,446,899.

Magid, Louis, to Hoffmann-La Roche Inc. Stabilization of vitamin C tablets. 3,446,894, 05-27-69, Cl. 424-176.

Magnusson, Karl G., to Sundstrand Corporation, mesne. Oil burner valve. 3,446,231, 05-27-69, Cl. 137-108.

Maguire, Hugh T., to United States of America, Army, and/or the Administrator of the Federal Aviation Administration. Weather outline contour generator. 3,447,153, 05-27-69, Cl. 343-005.

Maier, Gary W., and Jehn, David H., to Dun-Hot, Inc. Packaging machine for filling and closing a receptacle. 3,445,988, 05-27-69, Cl. 053-282.

Mail, Isaac Paul, and Copple, William E., to Combustion Engineering, Inc. Gas bubble generating and distributing system. 3,446,488, 05-27-69, Cl. 261-077.

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Mallory, P. R., & Co., Inc.: *See—*
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Dotto, Gianni A., 3,447,110.
Vogt, Harold W., Jr., 3,446,922.
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Maly, Neil A.: *See—*
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Menapace, Henry R., and Maly, Neil A. 3,446,862.

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Manetta, Sam. Packaging device. 3,445,985, 05-27-69, Cl. 053-124.

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Mann, Owen A.: *See—*
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Manning, Loran E., to Goodyear Tire & Rubber Company, The. Hose. 3,446,247, 05-27-69, Cl. 138-119.

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Marconi Company Limited, The: *See—*
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Marcotte, Alphonse U.: *See—*
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Marcovitch, Jacob, to Rotary Profile Anstalt. Profiling of annular workpieces. 3,446,048, 05-27-69, Cl. 072-126.

Marcus, Mitchell P.: *See—*
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Marker, Hannes. Sole support for safety ski bindings. 3,446,511, 05-27-69, Cl. 280-011.35

Markham, Harold A. Surgical clamp. 3,446,211, 05-27-69, Cl. 128-322.

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Marks, Ronald H., Goodman, Lawrence R., Stokes, Luther E., and Millard, Roy H., to American Can Company, mesne. Fabric forming apparatus. 3,446,041, 05-27-69, Cl. 066-125.

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Marquis, David M., to Chevron Research Company. Straight-chain alkyl aryl sulfonate detergent compositions. 3,446,743, 05-27-69, Cl. 252-161.

Marsh, Harold G., to Fansteel Metallurgical Corporation, mesne. Dispersion-strengthened nickel-chromium foil. 3,446,679, 05-27-69, Cl. 148-011.5

Marshall, Kenneth H. Jig to be used in dentistry. 3,445,935, 05-27-69, Cl. 032-040.

Marshall, Louis. Automatic control of gas absorption unit. 3,446,709, 05-27-69, Cl. 196-132.

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Maruyama, Minoru: *See—*
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Marvin Glass & Associates: *See—*
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Maslennikov, Vladilen Andrianovich, and Khinich, Isak Yakovlevich. Con crusher with non-eccentric drive. 3,446,445, 05-27-69, Cl. 241-209.

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Mason, Raymond J., to Minarik Electric Company. D. C. motor speed control circuit. 3,447,055, 05-27-69, Cl. 318-331.

Matel, Inc.: *See—*
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Matsumi, Shunji: *See—*
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Maxfield, Perry L., to Phillips Petroleum Company. Nickel compounds. 3,446,871, 05-27-69, Cl. 260-683.15

Maxham, Daniel W., to Uniroyal, Inc. Belt fabric. 3,446,252, 05-27-69, Cl. 139-420.

May, Hugh B., to Simpson Manufacturing Company. Tool wear-broken tool indicator. 3,446,058, 05-27-69, Cl. 073-037.5

May, Patrick L., and Beyer, Ralph E., to International Harvester Company. Automatic bale wagon. 3,446,369, 05-27-69, Cl. 214-006.

May, Richard D. Waste disposal system. 3,446,356, 05-27-69, Cl. 210-117.

Mayer, John F., to Navan Incorporated. Deformable sealing ring having integral spacer flange. 3,446,508, 05-27-69, Cl. 277-180.

McAnelly, John K., and Warner, William D. Method for preparing a bromelain solution for ante-mortem injection. 3,446,626, 05-27-69, Cl. 099-107.

Mc Cabe, Harry D.: *See—*
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McCaully, Ronald J., to American Home Products Corporation. Process for the preparation of 1,3-dihydro-2H-1, 4-benzodiazepin-2-ones. 3,446,800, 05-27-69, Cl. 260-239.3

McCormick, William S.: *See—*
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McCray, Herbert S., to Bobrick Corporation, The. Soap dispenser with severable stop strip. 3,446,405, 05-27-69, Cl. 222-309.

McCullough, Edward E., and Dorsey, Edward G., Jr., to Thiokol Chemical Corporation. Rocket nozzle support and pivoting system. 3,446,437, 05-27-69, Cl. 239-265.35

McCutchen, Robert R.: *See—*
Staebler, Paul J., Crawford, James L., Fangman, Charles N., and McCutchen, Robert R. 3,447,012.

McDaniel, Gordon M.: *See—*
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McDonald, William L.: *See—*
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Arrance, Frank C., and Berger, Carl, 3,446,669.
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McGee, Arthur L., and Irving, Donald William, to FMC Corporation. Scanner lockout mechanism. 3,446,255, 05-27-69, Cl. 144-002.

McGrail, Patrick Terrence: *See—*
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McHale, William L.: *See—*
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McHarg, Robert E., to Universl Oil Product Company. Separation of pyrolysis gases. 3,446,870, 05-27-69, Cl. 260-681.5

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McKay, Thomas L., to Whittaker Corporation, mesne. Insert driver. 3,446,101, 05-27-69, Cl. 081-053.

McLean, Leonard A., to Atlantic Coast Line Railroad Company. Brake rigging modification for composition brake shoes. 3,446,319, 05-27-69, Cl. 188-206.

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McMillan, Robert W., to Martin-Marietta Corporation. Single-switch gain changer. 3,447,095, 05-27-69, Cl. 330-144.

McPherson, Wilbur A., and Hamilton, Robert W., to Gulf Oil Corporation. Method of sparging fluids into rolling beds of particulate solids. 3,446,486, 05-27-69, Cl. 259-015.

McQuay-Norris Manufacturing Company: *See—*
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Mechanism for releasing and quickly reengaging: *See—*
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Meier, John A., to Dick, A. B., Company. Article feeding construction. 3,446,500, 05-27-69, Cl. 271-062.

Meier, Rudolf H., to Philco-Ford Corporation. Stabilized sight system employing autocollimation of gyro-stabilized light beam to correct yaw and pitch orientation of coupled sight line and servo system mirrors. 3,446,980, 05-27-69, Cl. 250-231.

Meijer, Hermanus, to Shell Oil Company. Apparatus for depositing a layer of flowable material underwater. 3,446,027, 05-27-69, Cl. 061-063.

Meinert, Norbert: *See—*
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Melnikov, Nikolai Nikitovich: *See—*
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Menapace, Henry R., and Maly, Neil A., to Goodyear Tire & Rubber Company, The. Codimerization process. 3,446,862, 05-27-69, Cl. 260-666.

Menapace, Henry R., Maly, Neil A., Benner, Gereld S., and Hillegass, Donald V., to Goodyear Tire & Rubber Company, The. Cyclodimerization process. 3,446,861, 05-27-69, Cl. 260-666.

Merck & Co., Inc.: *See—*
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Messer, Hans, to Messer Griesheim GmbH. Process for heat working metals. 3,446,678, 05-27-69, Cl. 148-009.

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Method for preparing inorganic hydrides of: *See—*
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Metivier, Robert. Cycling system for respirator. 3,446,207, 05-27-69, Cl. 128-145.8

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Meyer, Engelbert A., to Warren Fastener Corporation. Molding assembly and adaptor. 3,445,979, 05-27-69, Cl. 052-718.

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Miano, Paul P. Caster wheel. 3,445,882, 05-27-69, Cl. 016-021.

Michal, Eugene J., and Nilsen, Arnold E., to National Lead Company. Titanium dioxide concentrate and method for producing the same. 3,446,590, 05-27-69, Cl. 023-202.

Michel, Raymond S., to United Medical Laboratories, Inc. Package for mailing biological samples to laboratories for special tests. 3,446,342, 05-27-69, Cl. 206-047.

Michels, Julian Getz, to Norwich Pharmacal Company, The. 3-Hydroxymethyl-1-(5-nitrofurfurylideneamino) hydantoin. 3,446,802, 05-27-69, Cl. 260-240.

Michelson, Anatol, to Bliss, E. W., Company. Apparatus for continuous casting. 3,446,270, 05-27-69, Cl. 164-282.

Midland-Ross Corporation: *See—*
Thome, William Leonard, 3,446,273.

Mifuji Iron Works Co., Ltd.: *See—*
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Mifune, Keiji: *See—*
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Mihajlov, Vsevolod S.: *See—*
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Miles Laboratories, Inc.: *See—*
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Miles Laboratories Incorporated: *See—*
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Millard, Roy H.: *See—*
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Miller, Avy L., to Teledyne, Inc. Compact high capacity gas burner. 3,446,566, 05-27-69, Cl. 431-349.

Miller, Floyd B., Janich, Martin B., and McWilliams, John A. Bulk beverage shipping container and protective support therefor. 3,446,394, 05-27-69, Cl. 220-097.

Miller, James A.: *See—*
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Miller, Norman H. Maintenance lift. 3,446,366, 05-27-69, Cl. 214-001.

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Kosaka, Shinya, and Sasaguri, Kenzi, 3,447,056.

Omori, Koichiro. Collapsible paperboard carton. 3,446,414, 05-27-69, Cl. 229-028.

Ono, Hiromu: *See—*
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Opipari, Anthony William, to Celanese Coatings Company. High solids coating compositions. 3,446,769, 05-27-69, Cl. 260-031.4

Orlova, Tatjana Ivanovna, and Scherbakova, Nadezhda Vasiljevna. Method of manufacture of transparent yellow azo pigment. 3,446,640, 05-27-69, Cl. 106-288.

Orshansky, Elias, Jr., to URS Corporation. Split-torque hydromechanical transmission. 3,446,093, 05-27-69, Cl. 074-687.

Ortlieb, Alfred: *See—*
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Osby Pumpindustri: *See—*
Andersson, Hilding Gustav Vincent, 3,446,151.

Osher, Benjamin B., to Kleer-Vu Industries, Inc. Card holder for wallets. 3,446,260, 05-27-69, Cl. 150-039.

Othmer, Donald F. Method for producing pure water from sea water and other solutions by flash vaporization and condensation. 3,446,712, 05/27/69, Cl. 203-011.

Otto, Ferdinand P.: *See—*
Herd, Richard S., and Otto, Ferdinand P. 3,446,736.

Outboard Marine Corporation: *See—*
Trapp, Robert L., 3,446,303.

Overdurf, John Clyde, Jr.: *See—*
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Overstreet, Robert L., Jr., to Bell Telephone Laboratories, Incorporated. Pulse train repetition rate divider that divides by a fractional number. 3,446,947, 05-27-69, Cl. 235-150.3.

Owens-Illinois, Inc.: *See—*
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Janakirama-Rao, Bhogaraju V., 3,446,695.
Prendergast, John R., 3,446,611.
Shick, Philip E., 3,446,698.

Pachner, Leo C., to Shoe Form Co., Inc. Fishing reel with combined line take-up and drag. 3,446,453, 05-27-69, Cl. 242-084.5

Pacific Pipeline Construction Company: *See—*
Anderson, Everett R., 3,446,367.

Palfreeman, John Siegfried, to U. S. Philips Corporation, mesne. Apparatus for reversing the sequence of pulses in a pulse group. 3,446,967, 05-27-69, Cl. 250-199.

Pall, David B., Belfield, Robert Earle, Rosenberg, David J., and Vogel, Arthur C., to Certain-Feed Saint Gobain Insulation Corporation. Method and apparatus for forming tubular fibrous insulating articles. 3,446,684, 05-27-69, Cl. 156-184.

Palmer, Joseph P., to Sylvania Electric Products, Inc. Indicator apparatus for signal receiving tuning means. 3,446,180, 05-27-69, Cl. 116-124.1

Pan American Hydroponics, Inc.: *See—*
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Pangborn Corporation, The: *See—*
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Paniccia, Sally L.: *See—*
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Panoff, Robert, and Rockwell, Theodore, III, to Westinghouse Electric Corporation. Nuclear reactor containment system. 3,446,171, 05-27-69, Cl. 114-000.5

Panopix Research Inc.: *See—*
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Pantaleo, Carles A.: *See—*
Granata, Peter C., Jr., Andrychowski, Edward P., and Pantaleo, Carles A. 3,446,324.

Panzer, Jerome, Longosz, Edward J., Staffin, Gerald D., and Goodson, Robert M., to Esso Research and Engineering Company. Friction reducing additive comprising metal soap solubilized in oil by an N-containing dispersant. 3,446,737, 05-27-69, Cl. 252-034.7

Papay, Andrew George: *See—*
Papayannopoulos, Andreas G., and Papay, Andrew George, now by judicial change of name 3,446,739.

Papayannopoulos, Andreas G., and Papay, Andrew George, now by judicial change of name, to Mobil Oil Corporation. Hydrocarbon lubricating compositions containing mixtures of an alkyl phosphite and fatty acid esters for imparting limited-slip properties. 3,446,739, 05-27-69, Cl. 252-049.8

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Parke, Davis & Company: *See—*
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Letsinger, Robert M., and Parmerlee, James K. 3,446,942.

Parsen, Edward M.: *See—*
Wahl, Franklin W., 3,445,954.

Parsont, William, and Wilsin, Rosalie S. 1/10 to Parsont, Michael J. Trouser adjusters. 3,445,862, 05-27-69, Cl. 002-237.

Pascucci, Ronald W. Basketball re-play device. 3,446,504, 05-27-69, Cl. 273-001.5

Pasedach, Heinrich: *See—*
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Patterson-Kelley Co., Inc., The: *See—*
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Morgan, Lemuel J., and Lowe, Leonard F., 3,446,939.
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Paulus, Peter V., to Standard Products Company, The. Resilient corner gasket. 3,445,965, 05-27-69, Cl. 049-479.

Paxton, Jerre H. Roll of flexible plastic bags in partible sequential continuity, the individual bags having respectively echeloned sheet plastic closure facilities. 3,446,344, 05-27-69, Cl. 206-059.

Peltz, John Robert, and Stoldt, Clayton L., to Sylvania Electric Products Inc. Intermittent drive mechanism. 3,446,086, 05-27-69, Cl. 074-112.

Pelz, Edward C., Jr., and Guertler, Rudolf W., to International Harvester Company. Double injection system with one nozzle. 3,446,440, 05-27-69, Cl. 239-453.

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Perelman, Melvin, Jones, Reuben G., and Mizsak, Stephen A., to Lilly, Eli, and Company. Certain 3-hydroxy 1,2,5-thiadiazoles and a process for preparing them. 3,446,813, 05-27-69, Cl. 260-302.

Perilhou, Jean: *See—*
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Perlman, Morris. Semiautomatic wire-fed dual top stop production and securement machine for slide fasteners. 3,445,912, 05-27-69, Cl. 029-207.5

Permutit Company Limited, The: *See—*
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Perry, Barbour L.: *See—*
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Birmingham, Henry P., Perry, Barbour Lee, and Baldwin, Alan W. 3,447,129.

Perry, R. & Company Limited: *See—*
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Persson, Bror Gothe. Resilient chair support, especially for seats in motor vehicles. 3,446,527, 05-27-69, Cl. 296-065.

Peters, Wayne J. Collapsible cover for luggage compartments in compact vehicles. 3,446,526, 05-27-69, Cl. 296-037.

Peterson, Don M.: *See—*
Gibson, Clyde E., and Peterson, Don M. 3,446,520.

Peterson, George E., to Bell Telephone Laboratories, Incorporated. Optical $LiNbO^3$ modulator. 3,446,966, 05-27-69, Cl. 250-199.

Petracek, Francis J.: *See—*
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Pettit, Frank P., to Projects General Corporation of America. Suspended monorail system. 3,446,158, 05-27-69, Cl. 104-095.

Peugh, James A. Multi-frequency phase shifter. 3,447,125, 05-27-69, Cl. 340-005.

Pfaffman, George D., and Armstrong, Robert G., to Park-Ohio Industries, Inc. Apparatus for hardening gear teeth. 3,446,495, 05-27-69, Cl. 266-004.

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Pfizer, Chas., & Co., Inc.: *See—*
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Stephens, Charles R., Jr., and Allingham, Robert P., 3,446,629.

Philco-Ford Corporation: *See—*
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Bogert, Howard Z., and Miner, Jay G., 3,447,136.
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Phillips Petroleum Company: *See—*
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Sanford, Richard A., and Miller, Maurice L., 3,446,077.
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Sissons, Frank M., Jr., and Goering, Gordon, 3,446,710.
Wiley, Bruce F., 3,447,127.

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Phillips, William N., to Leco, Inc. High-lift elevating mechanism. 3,446,379, 05-27-69, Cl. 214-512.

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Physical Science Corporation: *See—*
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Physitech, Incorporated: *See—*
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Pinkham, Jesse R.: *See—*
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Pino, Piero, and Braca, Guiseppe, to Lonza Ltd. Preparation of trimeric ruthenium tetracarbonyl. 3,446,591, 05-27-69, Cl. 023-203.

Piquerez, Ervin. Apparatus for extracting watch glasses. 3,445,913, 05-27-69, Cl. 029-210.

Pisaroni, Giuseppe. Automatic machine for manufacturing footwear. 3,445,872, 05-27-69, Cl. 012-008.3

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Platt, Stephen A. Continuous filmstrip apparatus. 3,446,551, 05-27-69, Cl. 353-021.

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Brand, John R., and Plunkett, Bradley J. 3,446,904.

Podesta', Armando, and Vignati, Carlo, to Cebal GP. Metallic cap provided with a separate bottom disc. 3,446,381, 05-27-69, Cl. 215-040.

Poehlman, Robert F., to Modine Manufacturing Company. Vehicle radiator core assembly. 3,446,276, 05-27-69, Cl. 165-119.

Pohlemann, Heinz, Spoor, Herbert, and Becker, Ernst, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Electrodeposition of a copolymer containing basic nitrogen atoms. 3,446,723, 05-27-69, Cl. 204-181.

Polaroid Corporation: *See—*
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Popov, Boris Andreevich: *See—*
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Poska, Forrest L.: *See—*
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Potter, Bronson M. Alerting device having oscillations of negative resistance circuit controlled by mechanical resonance of transducer. 3,447,151, 05-27-69, Cl. 340-384.

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Powers & Eaton Industries, Inc.: *See—*
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PPG Idustries, Inc.: *See—*
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Precision Metalsmiths, Inc.: *See—*
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Prendergast, John R., to Owens-Illinois, Inc. Apparatus for centrifugally casting glass articles. 3,446,611, 05-27-69, Cl. 065-302.

Press, Irving D., to Resistofler Corporation. Reinforced hose. 3,446,248, 05-27-69, Cl. 138-133.

Prevallet, David N.: *See—*
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Price, John Clifford, to International Standard Electric Corporation. Digit pulse retiming arrangement for a binary code generator. 3,447,090, 05-27-69, Cl. 328-164.

Pridy, Whetstine B. Apparatus for straightening elongate metal members. 3,446,054, 05-27-69, Cl. 072-389.

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Procter & Gamble Company, The: *See—*
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Produits Chimiques Pechiney-Saint-Gobain: *See—*
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Pryer, Walter Reading, to Imperial Chemical Industries Limited. Rigid compositions comprising polyvinyl chloride, calcium carbonate and an oxide or hydroxide. 3,446,765, 05-27-69, Cl. 260-023.

Pryor, Harry H., Kessler, Arthur R., Blacklock, Arthur G., Neumann, Charles G., Short, William H., and Modjeski, Richard N., to UMC Industries, Inc. Hot beverage merchandizer. 3,446,137, 05-27-9, Cl. 099-289.

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Puljer, Philip F.: *See—*
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Pullman Incorporated: *See—*
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Pungor, Erno, Havas, Jeno, Toth, Klara, and Madarasz, Geza, to Metrimpex Magyar Muszeripari Kulkereskedemi Vallalat. Heterogeneous selective membranes. 3,446,726, 05-27-69, Cl. 204-296.

Puskas, Imre, and Fields, Ellis K., to Standard Oil Company (Indiana). Polyalkylbiphenyls and process of preparing same. 3,446,864, 05-27-69, Cl. 260-668.

Quickfit & Quartz Limited: *See—*
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Quist, Eric G.: *See—*
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Rachlin, Albert Israel: *See—*
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Raichle, Ludwig, Werminghausen, Bernhard, and Unterstenhoefer, Leo, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Elastic surfaces for sportsgrounds, playgrounds and footpaths. 3,446,122, 05-27-69, Cl. 094-007.

Rammelt, Peter-Paul: *See—*
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Ramos, Thomas. Method of making resinous epoxy prepolymers and curing of same. 3,446,756, 05-27-69, Cl. 260-002.

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Randel, Mortimer A. Bolt-lock means for vending machines or the like. 3,446,046, 05-27-69, Cl. 070-101.

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Rausch, John J.: *See—*
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Raviv, Samuel, Rabinovitz, Elsa, and Malkiely, Shimon, to State of Israel Ministry of Defence, The. Separation of the core of a uranium fuel element from its envelope. 3,446,713, 05-27-69, Cl. 204-001.5

Raychem Corporation: *See—*
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Rayfield, James Arthur F., and Whitehurst, Joe R., to Warner & Swasey Company, The. Creel stop motion responsive to sliver weight variances. 3,445,894, 05-27-69, Cl. 019-000.25

Reader, Paul D., Kaufman, Harold R., and Kerslake, William R., to United States of America, National Aeronautics and Space Administration. Ion thrustor cathode. 3,447,015, 05-27-69, Cl. 313-231.

Recas, Francis, to Societe Anonyme Generale Alimentaire (GASA). Apparatus for the continuous treatment of confectionery ingredients. 3,446,136, 05-27-69, Cl. 099-234.

Red Owl Stores, Inc.: *See—*
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Redfield, William H.: *See—*
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Reinhall, Rolf Bertil: *See—*
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Reinmuth, Ernst F., and Ter Haar, Leonard W., to Shell Oil Company. Gasification with water-containing feed. 3,446,609, 05-27-69, Cl. 048-215.

Reist, Walter, to Ferag, Fehr & Reist AG. Apparatus for separating sheets or like articles from a pile. 3,446,498, 05-27-69, Cl. 271-044.

Reitz, Albert. Fish-holding device. 3,445,885, 05-27-69, Cl. 017-008.

Reliance Electric and Engineering Co., The: *See—*
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Remington Arms Company, Inc.: *See—*
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Renaudin, Camille. Fastener for encasing measuring instruments. 3,446,466, 05-27-69, Cl. 248-027.

Replica Associates, Inc.: *See—*
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Republic Steel Corporation: *See—*
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Research Corporation: *See—*
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Research Engineering & Manufacturing, Inc.: *See—*
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Resistofier Corporation: *See—*
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Reuschel, Konrad, and Schink, Norbert, to Siemens Aktiengesellschaft. Method for the production of silicon of high purity. 3,446,653, 05-27-69, Cl. 117-106.

Revlon, Inc.: *See—*
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Kamen, Melvin E., 3,446,900.

Rex Chainbelt, Inc.: *See—*
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Rexall Drug and Chemical Company: *See—*
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Reynolds, R. J., Tobacco Company: *See—*
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Rheem Manufacturing Company: *See—*
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Riblett, Harry C., Jr., to Bliss, E. W., Company. Aircraft launching system. 3,446,461, 05-27-69, Cl. 244-063.

Ricciardi, Ronald J. Flow indicator for divided solid material provided with indicia responsive photoelectric means. 3,446,979, 05-27-69, Cl. 250-231.

Richter, Edmund, to Spinnfaser Aktiengesellschaft. Process for purifying air. 3,446,573, 05-27-69, Cl. 023-004.

Richter, Sidney B.: *See—*
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Berliner, Jordan P., and Richter, Sidney B. 3,446,832.

Riedel, Joannchristoph. Apparatus for the continuous production of a mat of glass filaments. 3,446,610, 05-27-69, Cl. 065-009.

Riggs & Lombard, Inc.: *See—*
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Rinecker, Franz G., to American Velcro, Inc. Flexible mouth container. 3,446,420, 05-27-69, Cl. 229-062.

Ringler, John S., to Bliss, E. W., Company. Sheet material handling apparatus. 3,446,499, 05-27-69, Cl. 271-054.

Risdom Manufacturing Company, The: *See—*
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Ritchie, Donald W.; and: *See—*
United States of America,, National Aeronautics and Space Administration, Administrator, 3,446,676.

Rizner, John S., to Varco Incorporated. Transfer coating and paper. 3,446,647, 05-27-69, Cl. 117-036.1

Roach, Benjamin H., to Ryder Supply Company. Silage distributing apparatus. 3,446,372, 05-27-69, Cl. 214-017.

Robbins, Edward S., Jr. Portable seamless continuous trough for liquid and support therefor. 3,446,325, 05-27-69, Cl. 193-025.

Robbins, Jim, Seat Belt Co.: *See—*
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Roberts, Reginald F., Jr.: *See—*
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Roberts, Thomas E., Jr., and Houston, Robert K., to FMC Corporation. Positioning mechanism. 3,446,256, 05-27-69, Cl. 144-002.

Roberts, William Elwyn. Electrophonic musical instrument. 3,446,905, 05-27-69, Cl. 084-001.22

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Rogallo, Francis M. Control devices for flexible wing aircraft. 3,446,458, 05-27-69, Cl. 244-043.

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Heyner, Gerhard, Rogowsky, York, Jotten, Robert, Muttelsee, Winfried, and Foerst, Reiner 3,447,066.

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Rombau, Paul A., to Produits Chimiques Pechiney-Saint-Gobain. Process for purification of ytterbium. 3,446,576, 05-27-69, Cl. 023-022.

Romiguiere, Claude E., to Societe Thomson-Varian. High-frequency tube apparatus with output direct- coupled-resonator filter. 3,447,019, 05-27-69, Cl. 315-005.43

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Rose, Harold. Fusible interlining fabric. 3,446,658, 05-27-69, Cl. 117-037.

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Rosenstein, Ludwig, and Gorin, Manuel H. Water purification process using a liquid hydrocarbon as a heat transfer medium. 3,446,711, 05-27-69, Cl. 203-010.

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Rubin, Julius, to Thermice Corporation. Method and apparatus for quick freezing individual food items. 3,446,030, 05-27-69, Cl. 062-063.

Ruddock, Kenneth A., to Spectra-Physics, Inc. Optical ranging system using a beat frequency responsive photomultiplier. 3,446,971, 05-27-69, Cl. 250-207.

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Saba, A., to Electronic Engineering Company of California. Method of using a solder contact fluid. 3,445,919, 05-27-69, Cl. 029-471.1

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Sala, Gregory J. Hair grooming comb. 3,446,216, 05-27-69, Cl. 132-116.

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Throckmorton, Morford C., and Saltman, William M. 3,446,788.

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Sandbank, Carl Peter, and Butler, Michael Brian Neilson, to International Standard Electric Corporation. Scanned line radiation source using a reverse biased P-N junction adjacent a gunn diode. 3,447,044, 05-27-69, Cl. 317-234.

Sandefur, Douglas M., to Sandefur Engineering Co., Inc. Slide and bumper strip for assembly tables. 3,446,326, 05-27-69, Cl. 193-038.

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Sandstrom, Clifford L., to Honeywell Inc. Condition responsive controlled rectifier circuit. 3,447,041, 05-27-69, Cl. 317-148.5

Sanford, Richard A., and Miller, Maurice L., to Phillips Petroleum Company. Sampling system. 3,446,077, 05-27-69, Cl. 073-421.5

Sankey, David J.: *See—*
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Saveca, Arthur L. Spring actuated ball projecting device. 3,446,199, 05-27-69, Cl. 124-016.

Saw, Clifford O. Telephone operated optoelectronic volume control. 3,446,976, 05-27-69, Cl. 250-217.

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Schlumberg Technology Corporation: *See—*
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Schmidt, Karl Heinz, and Bildat, Benno, to Schmidt, Karl Heinz. Device for the synchronized shifting of motor vehicle transmissions. 3,446,097, 05-27-69, Cl. 074-844.

Schmidt, Robert C., to Varian Associates. High power multicavity amplifier having enlarged drift tube gap defining portions to inhibit electronic feedback. 3,447,018, 05-27-69, Cl. 315-005.29

Schmidt, Walter, to Loewe Opta G.m.b.H. Arrangement for varying the focus of a flash lamp in photographic electronic flash units. 3,446,951, 05-27-69, Cl. 240-001.3

Schneebeli, Jean Pierre: *See—*
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Schneider, Kurt, Pasedach, Heinrich, and Pommer, Horst, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Production of 2-hydroxy-2,3-dihydrocitral. 3,446,851, 05-27-69, Cl. 260-602.

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Schober, Erwin: *See—*
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Schoch, Thomas J., Stella, Donald F., and Wolfmeyer, Howard J., to Corn Products Company. Congealed confections. 3,446,628, 05-27-69, Cl. 099-134.

Scholz, Werner, to Telefunken Patentverwertungsgesellschaft mbH. Transit time demodulator for phase quadrature modulated color signals. 3,446,913, 05-27-69, Cl. 178-005.4

Schoonover, Richard H. A., to Katrak Vehicles Company. Vehicle drive system. 3,446,302, 05-27-69, Cl. 180-009.2

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Schultz, Robert G., to Monsanto Company. Substituted pi-allyl palladium chloride complexes. 3,446,825, 05-27-69, Cl. 260-429.

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Schwarz, Eckhard Christian August, to Du Pont de Nemours, E. I., and Company. Linear condensation polymers of m- phenylenediamine and aldehydes. 3,446,773, 05-27-69, Cl. 260-047.

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Searles, John J., to Ford Motor Company. Automatic power transmission mechanism with dual range drive controls. 3,446,098, 05-27-69, Cl. 074-869.

Seaton, Stuart L., to United States of America, National Aeronautics and Space Administration. Method for measuring the characteristics of a gas. 3,446,558, 05-27-69, Cl. 356-104.

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Sederquist, Richard A.: *See—*
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Serio, Anthony W., deceased (by Serio, Dolores M., executrix). Dispenser. 3,446,403, 05-27-69, Cl. 222-158.

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Severance, Glen R., to Whirlpool Corporation. Speed control for a laundry machine. 3,446,043, 05-27-69, Cl. 068-012.

Shackelford, Charles L., to Wagner Electric Corporation, mesne. Disk contacts and flat annular shield arrangement in gas filled switch. 3,446,927, 05-27-69, Cl. 200-144.

Shand, Aeneas J., to Miles Laboratories Incorporated. Method and composition for the detection of urobilinogen in fluids. 3,446,599, 05-27-69, Cl. 023-230.

Sharpe, Peter S., to Brule Incinerator Corporation. Modular incinerator construction. 3,446,163, 05-27-69, Cl. 110-008.

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Sherrill, Joseph H., and Pinkham, Jesse R., to Reynolds, R. J., Tobacco Company. Tubular frame package and blank therefor. 3,446,413, 05-27-69, Cl. 229-023.

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Shick, Philip E., to Owens-Illinois, Inc. Method of impregnating and digesting cellulosic materials in a horizontal digestor. 3,446,698, 05-27-69, Cl. 162-019.

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Shields, Eugene H. Swimming pool construction. 3,445,866, 05-27-69, Cl. 004-172.

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Sierra, Octavio Vasquez: *See—*
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Simko, Aladar O., to Ford Motor Company. Integrated fuel injection and ignition distributor assembly. 3,446,198, 05-27-69, Cl. 123-140.

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Skinner, Kenneth R., and Vickery, Monte L., to General Motors Corporation. Motor vehicle signaling system. 3,447,130, 05-27-69, Cl. 340-080.

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Sommerud, Rolf Gunnar, Holmboe, Christian Fredrik, and De Lorme, James F., to International Telephone and Telegraph Corporation. Phase detector for harmonically related signals. 3,447,081, 05-27-69, Cl. 324-085.

Soper, Arthur John Compton, to Creed and Company, Limited. Apparatus for reading information from information bearing media. 3,446,944, 05-27-69, Cl. 235-061.11

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Design Patents

1 : 214,269	6 : 214,292	17 : 214,257	24 : 214,271	36 : 214,299	42 : 214,287
4 : 214,286	214,293	214,279	26 : 214,260	39 : 214,268	47 : 214,267
6 : 214,259	214,294	214,282	214,265	214,280	48 : 214,258
214,263	214,300	214,290	36 : 214,261	40 : 214,288	214,298
214,264	12 : 214,266	214,296	214,262	42 : 214,255	55 : 214,275
214,278	214,276	18 : 214,289	214,274	214,273	214,297
214,291	17 : 214,256				

Plant Patents

12 : 2,889					

DEFENSIVE PUBLICATIONS APPLICATIONS

Reference is by Serial No. (Notice of Apr. 11, 1968, 849 O.G. 1221)

10 : 782,001	34 : 793,188	36 : 789,377	36 : 801,536	47 : 767,845	47 : 794,416
26 : 641,140	36 : 783,313	: 794,405	: 801,566	: 776,311	: 802,748

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
May 27, 1969 Volume 862 Number 4

TRADEMARKS

NOTICES

Erratum

In the OFFICIAL GAZETTE of February 4, 1969, at page TM 32, under Registrations Published Under Sec. 12(c) "Reg. No. 250,241, GETS-IT and design" should be deleted.

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 253,654 (TRAILWAYS), National Trailways Bus System, Bi-monthly periodical; **Reg. No. 517,542**, same, Passenger motorbus transportation service; **Reg. No. 519,783**, same; **Reg. No. 813,672**, same, Transportation by motor bus of passengers, baggage, newspapers, and express, to indicate services rendered by the members of applicant; **Reg. No. 814,184** (NATIONAL TRAILWAYS BUS SYSTEM AND DESIGN), same, Association services—namely, services in promoting the welfare of member companies by such means as: providing for the use of joint bus depots; coordinating bus schedules for the convenience of the traveling public; conforming the color schemes, color patterns, trademarks, emblems and slogans to be used by member companies; establishing the sale of through interline tickets and the checking of baggage for through passengers of member companies; establishing and enforcing a safety program and safety practices; setting standard for the maintenance of physical equipment of member companies; advertising and coordinating the advertising of the services of member companies afforded the traveling public; setting up meetings and conferences of member companies and various committees; and compiling and disseminating to member companies information relating to improved practices, services and economies; **Reg. No. 814,185** (TRAILWAYS), same; **Reg. No. 814,186** (NATIONAL TRAILWAYS BUS SYSTEM AND DESIGN), same, Transportation by motor bus of passengers, baggage, newspapers, and express, to indicate services rendered by the members of applicant, filed Dec. 7, 1966, D.C., District of Columbia (Washington), Doc. 3228–66, *National Trailways Bus System* v. *Trailways of Canada Limited*. Consent order of dismissal, July 8, 1968.

Reg. No. 806,324 (WINDJAMMER), Guild Mills Corporation, Cotton textile fabrics sold in the piece or cut lengths, filed Feb. 27, 1969, D.C., C.D. Calif. (Los Angeles), Doc. 69–385–F, *Charter Fabrics, Inc.* v. *Robert Kaufman Co., Inc.*

Reg. No. 519,783. (See Reg. No. 352,654.)

Reg. No. 534,765 (HOTPOINT), Hotpoint Inc., Electric heating and cooking appliances—namely, electric ovens, electric stoves, electric grills, electric cookers, electric hotplates, electric heaters, electric water heaters, electric ranges, electric food warmers, electric kettles, electric broilers, electric waffle bakers, and electric griddles; **Reg. No. 599,902**, same, General Electric Company, Air conditioners embodying mechanical refrigeration apparatus and dehumidifiers embodying mechanical refrigeration apparatus; **Reg. No. 751,704**,

CONDITION OF TRADEMARK APPLICATIONS AS OF MARCH 31, 1969

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]	14,617
Date of oldest new application	February 20, 1968
Date of oldest amended application (filing date)	June 4, 1963

C. M. WENDT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application: New	Oldest Application: Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	6-21-68	6-4 -68
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	6-12-68	5-24-68
(III) P. S. BALL, Classes 19, 21, 25, 26, 31, 34, 35, 36	9-3 -68	1-21-66
(IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 26, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	2-20-68	6-1 -65
Renewals (All Classes)	1-21-69	
Sec. 12(c) Publications (All Classes)	2-5 -69	

Applications filed during the month of March 1969—2,850

Registrations Issued ----- 424—No. 869,854 to No. 870,277
Renewals Issued ----- 150

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $20.50 per annum, foreign mailing $5.75 additional; single copies, 40 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C. 20231.

same, Electric refrigerating machines and parts therefor; Reg. No. 751,640, same, Laundry washing machines and dryers; Reg. No. 751,666, same, Machines for cutting or grinding garbage or the like; Reg. No. 751,671, same, Electric dishwashers, filed Feb. 4, 1969, D.C., N.D.N.Y. (Utica), Doc. 69–CV–38. *Albert B. Ulichny, doing business as Hotpoint Service* v. *General Electric Company et. al.*

Reg. No. 562,570 (REPRESENTATION OF CAMEO), Cameo Curtains Inc. Window curtains composed of marquisette fabric and of voile fabric; Reg. No. 539,954 (CAMEO), same, filed Mar. 5, 1969, D.C., S.D.N.Y., Doc. 69–869, *Cameo Curtains Inc.* v. *Franklin Textile Corp.*

Reg. No. 562,570. (See Reg. No. 539,954.)

Reg. No. 580,902. (See Reg. No. 534,765.)

Reg. No. 715,907 (BUDGET RENT-A-CAR), Rent-A-Car Services Corporation, Rental and leasing of motor vehicles, filed June 21, 1968, D.C., E.D. Tenn. (Chattanooga), Doc. 5303, *Budget Rent-A-Car Corp of America* v. *Budget Rent-A-Car of Chattanooga, Inc.* Defendant permanently enjoined, Mar. 10, 1969.

Reg. No. 722,570 (TYPOSITOR, ETC.), Visual Graphics Corporation, Photographic lettering compositor, filed Oct. 3, 1968, D.C., E.D. Mich. (Detroit), Doc. 31805, *Visual Graphics Corp.* v. *Louis and Mildred Glassheim, doing business as Photo Typestor Sales & Service.* Stipulation and orders (2) for permanent injunction, Feb. 28, 1969.

Reg. No. 517,542. (See Reg. No. 352,654.)

Reg. No. 751,571. (See Reg. No. 534,765.)

Reg. No. 751,666. (See Reg. No. 534,765.)

Reg. No. 751,640. (See Reg. No. 534,765.)

Reg. No. 751,764. (See Reg. No. 534,765.)

Reg. No. 772,272 (PSI AND DESIGN), Programming and Systems, Inc., Instruction in the operation of data processing, including the operation of computer systems, and professional guidance in such operation, and advising in the applications of data processing systems, filed Feb. 4, 1969, D.C., S.D.N.Y., Doc. 69–C–458, *Programming and Systems, Inc.* v. *Leonard B. Goldman et ano. P.S.I. of Puerto Rico.*

Reg. No. 807,466. (See Reg. No. 838,895.)

Reg. No. 807,466 (ASPERGESIC AND DESIGN), Stephen M. Duschock, Liquid analgesic; Reg. No. 858,527 (ASPERGESIC), Polamer Drug Co., Inc., Analgesic tablets, filed Nov. 25, 1968, D.C.N.J. (Newark), Doc. C–1232–68, *Polamer Drug Co., Inc.* v. *Generica Corporation of America and Robert Daniels & Company, Inc.* Consent judgment for permanent injunction, Feb. 17, 1969.

Reg. No. 813,559. (See Reg. No. 838,895.)

Reg. No. 813,672. (See Reg. No. 352,654.)

Reg. No. 814,184. (See Reg. No. 352,654.)

Reg. No. 815,167. (See Reg. No. 838,895.)

Reg. No. 838,062. (See Reg. No. 838,895.)

Reg. No. 838,895 (KENTUCKY FRIED CHICKEN), Kentucky Fried Chicken Corporation, Freshly prepared chicken and chicken with gravy, chicken parts (gizzards and livers), fish and shrimp, biscuits, potatoes, salads of a vegetable and poultry nature, baked beans, and Bar-B-Q (Chicken and pork); Reg. No. 815,167, same, Restaurant services; Reg. No. 813,559 (COL. SANDERS RECIPE KENTUCKY FRIED CHICKEN), same, frozen and fresh prepared chicken and gravy, packaged and sold in retail trade, prepared potatoes, chicken parts (gizzards and livers), fish and shrimp, biscuits, baked beans, barbecue (chicken and pork), and salads; Reg. No. 838,062, same Restaurant services; Reg. No. 807,000 (KENTUCKY PLANTATION), same, barbecue sauce; Reg. No. 839,658 (KENTUCKY PLANTATION AND DESIGN), same, Table syrup, filed Feb. 14, 1969, D.C.N.J. (Newark), Doc. 172–69, *Kentucky Fried Chicken Corporation* v. *Kentucky Style Chicken.*

Reg. No. 839,658. (See Reg. No. 838,895.)

Reg. No. 849,828 (MUSART), Discos Musart, S.A., Phonograph records, filed Feb. 7, 1969, D.C., C.D. Calif. (Los Angeles), Doc. 69–241–CC, *Discos Musart, S.A.* v. *Mus-Art Corporation of America.*

Reg. No. 858,527. (See Reg. No 807,466.)

Reg. No. 863,444 (AMERICAN RACING EQUIPMENT AND DESIGN), American Racing Equipment, Wheels cast from magnesium or aluminum and hub caps for wheels for motor vehicles, filed Feb. 26, 1969, D.C., C.D. Calif. (Los Angeles), Doc. 69–361–F, *American Racing Equipment* v. *Newhouse Automotive Industries.*

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 250,917. Allied Fence Corp., Houston, Tex., assignee of Allied Chain Link Fence Co., Inc., Houston, Tex. Filed July 25, 1966.

ALLIED

Class 12—Construction Materials

For Wood Fennces (Int. Cl. 19).
First use in about 1955.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Wire and Metal Fences (Int. Cl. 6).
First use in about 1946.

SN 251,257. Agfa-Gevaert, Inc., Teterboro, N.J., assignee of Fotorite, Inc., Chicago, Ill. Filed July 29, 1966.

FOTORITE

Owner of Reg. Nos. 772,243, 797,189, and 836,274.

Class 6—Chemicals and Chemical Compositions

For Developing and Stabilizing Chemicals for Use in the Stabilization Process of Photosensitive Material (Paper and Film) (Int. Cl. 1).

Class 26—Measuring and Scientific Appliances

For Photosensitive Material (Paper and Film) of the Stabilization Type in Sheet and Roll Form for Use With Desk-Top Processing Units (Int. Cl. 1).

First use June 13, 1961.

SN 264,627. Work Wear Corporation, Cleveland, Ohio. Filed Feb. 13, 1967.

WW WORK WEAR

The expression "Work Wear" is disclaimed separate and apart from the mark as shown. Owner of Reg. No. 819,542.

Class 39—Clothing

For Work Clothing, Including Shirts, Pants, Coveralls, Jackets, Coats, Parkas, Shop Aprons and Smocks, Flying Suits, Women's Dresses, Blouses and Slacks and Linen Aprons and Uniforms (Int. Cl. 25).

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Industrial Towels, Roller or Continuous Towels and Table and Bed Linens (Int. Cl. 24).

First use Sept. 1, 1966.

SN 268,647. Raleigh Industries Limited, Nottingham, England. Filed Apr. 10, 1967.

RODEO

Class 19—Vehicles

For Motor Bicycles and Mopeds (Int. Cl. 12).

Class 22—Games, Toys, and Sporting Goods

For Juvenile Bicycles and Tricycles (Int. Cl. 12).

First use 1962; in commerce 1962.

SN 273,547. Ultra Carbon Corporation, Bay City, Mich. Filed June 12, 1967.

"F"

Owner of Reg. Nos. 527,573 and 781,164.

Class 1—Raw or Partly Prepared Materials

For Purified Graphite Plate and Rod Stock (Int. Cl. 1).
First use Apr. 27, 1967.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Jigs and Fixtures Made of Purified Graphite for Use in the Preparation of Semi-Conductor Devices (Int. Cl. 7).
First use May 22, 1967.

SN 279,368. The Cleveland Twist Drill Company, Cleveland, Ohio. Filed Aug. 30, 1967.

BAY STATE

Owner of Reg. No. 826,064.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Tools and Tool Sets—Namely, Screw Plates, Taps, Tap Wrenches, Reamers, Inserts, Chasers, Dies, Die Stocks, Collets, Holders, and Parts Thereof (Int. Cls. 7 and 8).

Class 26—Measuring and Scientific Appliances

For Measuring Devices—Namely, Gage Sets, Plug Gages, Ring Gages, Pipe Gages, Thread Gages, Roll Gages, Snap Gages, Gage Components and Thread Measuring Wires (Int. Cl. 9).
First use at least as early as 1908.

SN 284,081. The Dow Chemical Company, Midland, Mich. Filed Nov. 3, 1967.

MORAF

Class 13—Hardware and Plumbing and Steam-Fitting

For Pipe and Piping Products, Made of Plastic or of Plastic and Metal—Namely, Pipe, Nipples, Flanges, Spacers, Blinds, Valves, Sight Flows, Strainers, Traps, Drains, Sinks, and Fittings Consisting of Elbows, Tees, Crosses, Couplings, Unions, Bushings, Plugs, and Caps (Int. Cl. 17).
First use Mar. 25, 1966.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Pumps and Valve Wrenches (Int. Cls. 7 and 8).
First use at least as early as October 1967.

Class 35—Belting, Hose, Machinery Packing, and Non-metallic Tires

For Gaskets (Int Cl. 17).
First use at least as early as Oct. 19, 1967.

SN 286,054. Hudson National, Inc., New York, N.Y. Filed Dec. 4, 1967.



Class 44—Dental, Medical, and Surgical Appliances

For Convalescent Aids—Namely, Urinals, Bed Pans, Vibratory Massagers, Bath Tub Safety Rails, Commode Frames, Colostomy Pouches, Wheel Chairs, Crutches, Canes, Hospital Type Beds (Int. Cls. 10 and 12).

Class 100—Miscellaneous

For Rental Services of Convalescent Aids—Namely, Urinals, Bed Pans, Vibratory Massagers, Bath Tub Safety Rails, Commode Frames, Wheel Chairs, Crutches, Canes, Hospital Type Beds (Int. Cl. 42).

First use Jan. 18, 1967.

SN 287,008. Dortmund-Hoerder Huettenunion A.G., Dortmund, Germany. Filed Dec. 15, 1967.



The term "Vakuumstahl" is disclaimed apart from the mark. Owner of German Reg. No. 772,241, dated July 30, 1962; and U.S. Reg. Nos. 600,635, 614,322, and others.

Class 12—Construction Materials

For Piling (Int. Cl. 19).

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Metal Pipes, Chains, Screws, Bolts, and Metal Pins (Int. Cl. 6).

Class 14—Metals and Metal Castings and Forgings

For Steels, Sheet Metals, Anchors, Forgings, Rails and Wire (Int. Cl. 6).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Roller Bearings, Piston Rods, Drills, Machinery Gears and Shafts (Int. Cl. 7).

SN 290,188. Diana Stores Corporation, North Bergen, N.J. Filed Feb. 2, 1968.

SNUGGLE TIME

Class 39—Clothing

For Waterproof Pants, Infants' Hosiery, and Infants' Tights (Int. Cl. 25).

Class 42—Knitted, Netted, and Textile Fabrics, and

For Receiving Blankets and Crib Sheets (Int. Cl. 24).

First use May 1967.

SN 293,662. Andree Biallot, Ltd., New York, N.Y. Filed Mar. 20, 1968.

FANFARON

The translation of the trademark is "a braggart."

Class 51—Cosmetics and Toilet Preparations

For Toiletries—Namely, Perfume, Solid Perfume, Bath Oil, Toilet Water, Body Lotion, and Body Powder (Int. Cl. 3).

Class 52—Detergents and Soaps

For Toilet Soap (Int. Cl. 3).

First use June 1, 1967.

SN 294,071. Morito & Co., Ltd., Higashi-ku, Osaka, Japan. Filed Mar. 25, 1968.



Class 25—Locks and Safes

For Locks (Int. Cl. 6).

Class 40—Fancy Goods, Furnishings, and Notions

For Footwear and Clothing Accessories—Namely, Eyelets, Eyelet Rings, Rivets, Dotting Press Buttons, Hooks, Trouser Hooks, Slide Fasteners, Trousers Buckles, Press Studs, Belt Buckles, Press Buckles, Trousers Hook and Bar, Braid, Shoe Buckles, D-Rings, Shoe Laces, and Elastic Webbing and Braid (Int. Cl. 26).

First use prior to Aug. 25, 1959.

SN 295,698. Byk-Gulden Lomberg, Konstanz, Germany. Filed Apr. 16, 1968.

BYK

Owner of German Reg. No. 341,221, dated Oct. 16, 1925; and U.S. Reg. No. 284,546.

Class 6—Chemicals and Chemical Compositions

For Chemical Products for Industrial and Scientific Use, Such as Chemical Additives and Adjuvants for the Paint, Lacquer, and Adhesive Industry (Int. Cl. 1).

Class 18—Medicines and Pharmaceutical Preparations

For Human and Veterinary Medicines and Pharmaceutical Drugs and Preparations Such as Thyreostatic Agents, Antibiotics, Vitamins and Their Combinations, Agents for the Treatment of Skin Diseases, Medicines for the Treatment of Cardiac and Circulatory Disorders, Hypnotic Agents and Sedatives, Antitympanitic Agents, Diagnostic Agents, Psychopharmacological Drugs, Antacids, Antirheumatic, Antiphlogistic, Analgesic, Antipyretic, and Anorexigenic Agents, Bacteriostatic and Bactericidal Chemotherapeutic Agents, Antileukorrheal Agents, Geriatrics, Spasmolytic, Anti-Emetic, Parasympathicolytic, and Neuroleptic Agents, Medicines for the Treatment of Asthma and Asthmatic Conditions, Choleretic Agents, X-Ray Contrast Agents, Laxatives, Antiallergic Medicines, Ferment and Enzyme Preparations, Hormone Preparations, Iron Preparations, Anticoagulants, Vaccine, Sera, and Immunizing Agents, Narcotics, Roburants, Antiseptics and Disinfectants, Hemostatic and Astringent Agents, Medicines Useful in Gynecology, in Pediatry, in the Treatment of Gastro-Intestinal Diseases and Disorders, in Ophthalmology, in Urology, Tonic Agents, Diuretic Agents, Medicines for the Treatment of Throat, Nose, and Ear Diseases (Int. Cl. 5).

SN 296,031. Losenhausen Maschinenbau Aktiengesellschaft, Schluterstrabe, Germany. Filed Apr. 19, 1968.

LOS-LOSENHAUSEN

Owner of German Reg. No. 838,111, dated Oct. 17, 1967; and U.S. Reg. Nos. 671,141 and 684,029.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Vibrators, in Particular Internal and External Vibrators and Soil Compactors (Int. Cl. 7).

Class 26—Measuring and Scientific Appliances

For Material Testing Machines and Balancing Machines (Int. Cl. 9).

SN 296,160. Huck Manufacturing Company, Detroit, Mich. Filed Apr. 22, 1968.

HUCKRIMP

Owner of Reg. No. 727,397.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Fastening Devices Including Bolts, Nuts and Collars (Int. Cl. 6).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Tools Employed in the Installation of said Fasteners (Int. Cl. 8).

First use Apr. 5, 1968.

SN 296,510. Belson Manufacturing Co., Inc., North Aurora, Ill. Filed Apr. 25, 1968.

BELSON

Owner of Reg. No. 720,855.

Class 22—Games, Toys, and Sporting Goods

For Basketball Baskets and Backboards Used as Park Equipment (Int. Cl. 28).
First use Mar. 25, 1968.

Class 32—Furniture and Upholstery

For Seating Bleachers and Grandstands, Picnic Tables, Park Benches, and Bike Racks Used as Park Equipment (Int. Cl. 20).
First use Mar. 18, 1968.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Camp Stoves and Grills Used as Park Equipment (Int. Cl. 11).
First use Mar. 18, 1968.

SN 296,737. Swiss Laboratory, Inc., Bedford Heights, Ohio Filed Apr. 29, 1968.

SWISS FORMULAE

Owner of Reg. No. 748,973 and others.

Class 12—Construction Materials

For Plastic Filling, Repairing and Sealing Materials for Industrial, Household, Farm, Aircraft, Railroad, Automotive, and Marine Applications as Well as Putty (Int. Cls. 2 and 17).

Class 16—Protective and Decorative Coatings

For Plastic Undercoating Materials (Int. Cl. 2).

Class 34—Heating, Lighting, and Ventilating Apparatus

For Welding Supplies—Namely, Flux, Metal Solder, Tinning Compound, Brazing and Welding Metals (Int. Cls. 1 and 6).

First use at least as early as Jan. 10, 1940.

SN 297,238. American District Telegraph Company, New York, N.Y. Filed May 3, 1968.

TELATTACK

Owner of Reg. No. 718,883.

Class 100—Miscellaneous

For Central Station Burglar Alarm Service (Int. Cl. 35).

Class 103—Construction and Repair

For Installation, Inspection, Maintenance and Trouble-Call Service for Burglar and Intrusion Detection Systems and Equipment (Int. Cl. 37).

First use in or about April 1967.

SN 297,491. Clairol Incorporated, New York, N.Y. Filed May 7, 1968.

BIG SURF

Class 51—Cosmetics and Toilet Preparations

For Hair Coloring, Hair Lightener, Hair Conditioner, Hair Groom, Nail Polish, Lipstick, Rouge, Moisturizing Lotion, Compact Face Powder, Moisture Foundation Make-Up, Skin Freshener and Cleanser (Int. Cl. 3).

Class 52—Detergents and Soaps

For Hair Shampoo (Int. Cl. 3).

First use Apr. 16, 1968.

SN 298,451. Earl H. Jamison, Lahaska, Pa. Filed May 17, 1968.

PEDDLER'S VILLAGE

Class 2—Receptacles

For Paper Shopping Bags (Int. Cl. 16).

Class 30—Crockery, Earthenware, and Porcelain

For Ceramic Drinking Mugs (Int. Cl. 21).

First use Dec. 19, 1964.

SN 299,324. Can Pack Corporation, Philadelphia, Pa. Filed May 29, 1968.

CAST WAX

Class 2—Receptacles

For Cardboard Boxes (Int. Cl. 16).

Class 37—Paper and Stationery

For Cardboard in Unformed Condition (Int. Cl. 16).

First use during April 1968.

SN 299,900. Essex Chemical Corporation, Clifton, N.J. Filed June 7, 1968.



Class 12—Construction Materials

For Caulking Composition for Expansion Points, Glazing, Caulking and Bedding; a Caulking Composition for Ceramic Tile, Glass, Wood, Metal, Porcelain and Painted Surfaces (Int. Cl. 17).

Class 16—Protective and Decorative Coatings

For Protective Coating Composition for Use in Preventing Water Seepage in All Types of Masonry and Preventing Staining, Spalling and Paint Blistering on Interior Surfaces (Int. Cl. 2).

First use Aug. 15, 1967.

SN 306,237. G.K.N. Screws & Fasteners Limited, Warley, Worcestershire, England. Filed Aug. 29, 1968.

spat SYSTEM

Without surrendering any of its common law rights, applicant disclaims the term "System" apart from the mark in its entirety. Owner of British Reg. Nos. 877,484, dated Mar. 26, 1965; 882,215 and 882,216, dated July 22, 1965.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Nuts, Bolts, Screws, Rivets, and Fastening Devices (Int. Cl. 6).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Power Operated and Non-Power Operated Tools for Tightening and Releasing Threaded Fasteners (Int. Cls. 7 and 8).

SN 306,290. T. D. Williamson, Inc., Tulsa, Okla. Filed Aug. 29, 1968.



Owner of Reg. No. 682,628.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Flanges, Pipe Nipples, Plugs for Use on Pipelines and Other Flow Conduits; Plugs for Plugging the Ends of Pipelines and Other Flow Conduits; Pipeline Pigs and Cups Therefor; Split Tees for Attaching to Pipelines or Other Flow Conduits and Plugs for Such Split Tees; Bushings for Providing an Electrically Nonconductive Seal Between One Pipe Passing Through Another Pipe; Insulators for Supporting One Pipe Inside Another and Electrically Insulating Such Pipes From One Another; Valves; Plastic Pipe Fittings and Devices for Indicating the Passage of a Pig Through a Pipeline (Int. Cls. 6 and 17).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Machines for Preventing Flow Through a Conduit by Inserting a Plugging Element Through a Lateral Opening in the Conduit; Machines for Tapping Openings in Pipelines and Other Flow Conduits and Cutters for Such Machines (Int. Cl. 7).

First use on or about Feb. 15, 1968.

SN 309,512. Dennison Manufacturing Company, Framingham, Mass. Filed Oct. 14, 1968.

BUTTONEER

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Hand Tool for Attaching Buttons (Int. Cl. 8).

Class 40—Fancy Goods, Furnishings, and Notions

For Fasteners for Attaching Buttons to Fabrics (Int. Cl. 26).

First use July 5, 1968.

SN 312,541. Peacock Buick, Inc., Falls Church, Va. Filed Nov. 19, 1968.

PEACOCK

Class 101—Advertising and Business

For Retail Automobile Agency Services (Int. Cl. 35).

Class 103—Construction and Repair

For Service and Maintenance of Automobiles (Int. Cl. 37).

First use October 1961.

SN 312,948. S. C. Johnson & Son, Inc., Racine, Wis. Filed Nov. 25, 1968.

EXPOSE

Class 6—Chemicals and Chemical Compositions

For Disinfectant and Sanitizing Preparations (Int. Cl. 5).

Class 52—Detergents and Soaps

For All-Purpose Cleaning Preparation (Int. Cl. 3).

First use on or about Sept. 10, 1968.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 283,344. Kawaguchi Rubber Industrial Co., Ltd., Katsushika-ku, Tokyo, Japan. Filed Oct. 25, 1967.

LONSEAL

Owner of Japanese Reg. No. 435,760, dated Nov. 30, 1953.

For Vinyl Sheets, Vinyl Films and Vinyl Leather (Int. Cls. 17 and 18).

First use Jan. 1, 1951; in commerce Jan. 1, 1966.

SN 304,251. Redeturf, Inc., Albany, Oreg. Filed Aug. 2, 1968.



For Sod (Int. Cl. 31).

First use Apr. 17, 1968.

SN 317,991. Dow Badische Company, Williamsburg, Va. Filed Jan. 31, 1969.

ZYLAR

For Synthetic Textile Fiber (Int. Cl. 22).

First use Oct. 2, 1968.

SN 317,992. Dow Badische Company, Williamsburg, Va. Filed Jan. 31, 1969.

DARAK

For Synthetic Textile Fiber (Int. Cl. 22).

First use Jan. 16, 1969.

SN 318,004. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Jan. 31, 1969.

EMPOR

For Artificial Leather for Use in the Shoe Industry as a Shoe Upper Material (Int. Cl. 18).

First use Dec. 19, 1968.

Class 2—Receptades

SN 298,750. Earl M. McKelvey, Cupertino, Calif. Filed May 21, 1968.

MAIL-SAFE

For Mail Box (Int. Cl. 21).

First use Nov. 7, 1967.

SN 305,250. Rubbermaid Incorporated, Wooster, Ohio. Filed Aug. 15, 1968.



For Articles Made of Rubber Composition, Rubber-Like Composition or Plastic Composition—Namely, Material Storage Boxes, Containers and Bins, Tote Bins, Buckets, Wastebaskets, Barrels and Refuse Containers and Receptacles (Int. Cls. 20 and 21).

First use Apr. 5, 1968.

SN 312,298. Inland Steel Company, Chicago, Ill. Filed Nov. 15, 1968.

MONOVAC

For Containers and Receptacles—Namely, Shipping Containers, Pails, and Drums (Int. Cl. 6).

First use Oct. 4, 1968.

SN 312,768. The General Tire & Rubber Company, Akron, Ohio. Filed Nov. 21, 1968.



For Utility Bowls for Foods for Domestic Use, Made of Synthetic Resin; Boxes Made of Synthetic Resin; Serving Trays Made of Plastic Materials; and Tumblers Made of Plastic Materials (Int. Cl. 21).

First use Oct. 10, 1968.

SN 313,092. Charles T. Evans, d.b.a. Safety Motivations, Newtown, Pa. Filed Nov. 26, 1968.

SAFETRIX

For Paper Bags (Int. Cl. 16).

First use on or about Oct. 17, 1968.

SN 313,515. Phillips Petroleum Company, Bartlesville, Okla. Filed Dec. 3, 1968.

CONVOCAN

For Cartons, and Covers for Same Formed of Plastic and/or Fibrous Materials for Packaging Primarily Food Products (Int. Cl. 20).

First use at least as early as Feb. 16, 1968.

SN 313,559. Comet Packaging Corporation, Bronx, N.Y. Filed Dec. 4, 1968.

PIC "N" PAC

For Polyethylene Bags Wound on Rolls (Int. Cl. 16).

First use Nov. 11, 1968.

SN 314,602. Olinkraft, Inc., West Monroe, La. Filed Dec. 13, 1968.



For Multiwall Bags (Int. Cl. 16).
First use Aug. 5, 1968.

Class 5 — Adhesives

SN 293,109. Carolina Company, Inc., d.b.a. The Carolina Soap & Candle Makers, Southern Pines, N.C. Filed Mar. 13, 1968.

CAROLINA

Owner of Reg. Nos. 769,043 and 779,591.
For Sealing Wax Used To Seal Letters and Documents (Int. Cl. 16).
First use in or about January 1964.

Class 6 — Chemicals and Chemical Compositions

SN 280,114. Northern Petrochemical Company, Omaha, Nebr. Filed Sept. 11, 1967.

SUCROX

For Surface Active Agents and Compositions for Use in Industrial Detergents, Cosmetics, Shampoos, and Washing Surface Active Compositions (Int. Cl. 1).
First use Aug. 22, 1967.

SN 280,207. Citroil Aromatics, Inc., New York, N.Y. Filed Sept. 13, 1967.

Citroil

For Essential Oils and Aromatic Chemicals Used in the Manufacture of Soft Drinks (Int. Cl. 3).
First use Nov. 8, 1968.

SN 282,172. Brulin & Company, Inc., Indianapolis, Ind. Filed Oct. 10, 1967.

LIQWEEDATE

For Herbicide and Weed and Brush Killer (Int. Cl. 5).
First use Aug. 1, 1967.

SN 284,197. Henkel & Cie G.m.b.H., Dusseldorf, Germany. Filed Nov. 6, 1967.

SILAN

Owner of German Reg. No. 523,647, dated May 13, 1938.
For Laundry Softening Agent (Int. Cl. 3).

SN 284,561. Alco Chemical Co., Artesia, Calif. Filed Nov. 13, 1967.

HO-NO-MO

For Herbicide (Int. Cl. 5).
First use Oct. 29, 1966.

SN 287,245. Becton, Dickinson and Company, East Rutherford, N.J. Filed Nov. 29, 1967.

TAXO

Owner of Reg. No. 717,057.
For Laboratory Reagent Differentiation Discs for Microbiological Determinations (Int. Cl. 1).
First use at least as early as January 1957.

SN 290,499. Lancaster Chemical Company, Carlstadt, N.J. Filed Feb. 7, 1968.

CATIMULS

For Cationic Emulsifying Agent for Use as a Surfactant in Asphalt (Int. Cl. 1).
First use Jan. 10, 1968.

SN 290,538. Sandoz, Inc., Hanover, N.J. Filed Feb. 7, 1968.
Owner of Reg. Nos. 315,685, 611,992, and 645,593.

SANDOPLAST

For Dyestuff Preparations for the Coloring of Plastic Materials and Enamels (Int. Cl. 2).
First use Jan. 31, 1968.

SN 307,735. Geigy Chemical Corporation, Ardsley, N.Y. Filed Sept. 19, 1968.

FRAMOLIN

For Chemical Ingredient Used in the Manufacture of Herbicides (Int. Cl. 1).
First use Aug. 23, 1968.

SN 307,930. Flow Laboratories Incorporated, Rockville, Md. Filed Sept. 23, 1968.

AUTO-POW

For Tissue Culture Media (Int. Cl. 5).
First use Aug. 14, 1968.

SN 316,060. Sucrest Corporation, New York, N.Y. Filed Jan. 8, 1969.

DEX - TAB

For Dry Free-Flowing Granular Product Containing Dextrose, Sugar and Starch for Use as a Binding Agent in the Manufacture of Pharmaceutical Preparations (Int. Cl. 1).
First use Aug. 10, 1968.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 306,449. Armalonvest Inc., Franklin, Ohio. Filed Sept. 3, 1968.

ARMALONVEST

For Armored Vests for Protection Against Missiles From Firearms (Int. Cl. 13).
First use on or about May 22, 1968.

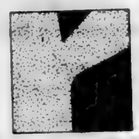
Class 10 — Fertilizers

SN 272,397. Organic Compost Corporation, Germantown, Wis. Filed May 25, 1967.

DAIRY ORGANIC COMPOST

Applicant asserts no exclusive rights to the words "Organic Compost."
For Cattle Manure Compost (Int. Cl. 1).
First use Aug. 11, 1952.

SN 305,245. Radiant Color Company, Richmond, Calif. Filed Aug. 15, 1968.



The stippling shown in the drawing is not actually part of the mark, but is used to indicate shading only.
For Organic Fluorescent Colorants for Accelerating Germination and Increasing Plant Growth (Int. Cl. 1).
First use About Aug. 14, 1967.

SN 312,775. International Minerals and Chemical Corporation, Skokie, Ill. Filed Nov. 21, 1968.

NITRO·K

For Fertilizers (Int. Cl. 1).
First use Oct. 8, 1968.

SN 312,776. International Minerals and Chemical Corporation, Skokie, Ill. Filed Nov. 21, 1968.

NITRO-MAG

For Fertilizers (Int. Cl. 1).
First use Nov. 12, 1968.

SN 313,322. Metropolitan Waste Conversion Corporation, Wheaton, Ill. Filed Nov. 29, 1968.

METRO

For Compost (Int. Cl. 1).
First use Oct. 25, 1968.

Class 12 — Construction Materials

SN 293,628. Karl Kristian Kobs Krøyer, Viby J, Denmark. Filed Mar. 19, 1968.

SYNOPAL

Owner of Danish Reg. No. 269/61–36, dated Mar. 18, 1961.
For White Synthetic Rock-Like Road Construction Materials (Int. Cl. 19).

SN 294,447. American Steel Bar Joists, Inc., Oak Park, Ill. Filed Mar. 29, 1968.



For Steel Bar Joists (Int. Cl. 6).
First use June 1, 1965.

SN 300,370. Rabec, Incorporated, Fairview Park, Ohio. Filed June 13, 1968.

RABEC SEALRITE

No claim of exclusive right is made to the word "Sealrite" apart from the mark as shown.
For Jalousie Windows (Int. Cl. 19).
First use Apr. 20, 1963.

SN 300,607. Molded Fiber Glass Body Company, Ashtabula, Ohio. Filed June 17, 1968.

MFG PLY/GLASS

For Reinforced Plastic Encapsulated Panels (Int. Cl. 19).
First use in or about January 1968.

SN 305,774. Windecker Research, Inc., Midland, Tex. Filed Aug. 22, 1968.

FTBALOY

For Reinforced Plastic Materials Used in the Construction of Airframe-Type Structural Members (Int. Cl. 19).
First use at least as early as Nov. 16, 1967.

SN 308,085. Boise Cascade Corporation, Boise, Idaho. Filed Sept. 24, 1968.

DURO-TRON 5

Owner of Reg. No. 586,840.
For Exterior Siding for Residential and Non-Residential Construction and Repair (Int. Cl. 19).
First use July 24, 1968.

SN 308,812. Reliable Electric Company, Franklin Park, Ill. Filed Oct. 3, 1968.

STRANDLOK

Owner of Reg. Nos. 561,307 and 673,312.
For End Anchors for Cables Used in Stressing Concrete Slabs and Beams (Int. Cl. 6).
First use May 22, 1967.

SN 309,706. Weyerhaeuser Company, Tacoma, Wash. Filed Oct. 15, 1968.

CHANNELWOOD

For Prefinished Wood Paneling (Int. Cl. 19).
First use June 24, 1968.

SN 309,996. Solite Corporation, Richmond, Va. Filed Oct. 18, 1968.

SOLITE

Owner of Reg. Nos. 501,508, 781,608, and others.
For Lightweight Structural Concrete, Lightweight Concrete, and Concrete (Int. Cl. 19).
First use June 1964.

SN 310,195. V. E. Anderson Mfg. Co., Owensboro, Ky. Filed Oct. 22, 1968.

Owner of Reg. No. 715,973.
For Windows and Doors Made of Metal, Wood, Combination of Wood and Metal, and Combination of Wood, Metal and Plastic (Int. Cls. 6 and 19).
First use Aug. 8, 1968.

SN 310,789. Kubo Greenhouses, Inc., New York, N.Y. Filed Oct. 29, 1968.

KUBO

For Prefabricated Greenhouses (Int. Cl. 19).
First use July 1967.

SN 311,000. American Olean Tile Company, Inc., Lansdale, Pa. Filed Oct. 31, 1968.

AMERICAN

Owner of Reg. No. 696,581.
For Ceramic Tile (Int. Cl. 19).
First use Feb. 18, 1957.

SN 312,475. Johns-Manville Corporation, New York, N.Y. Filed Nov. 18, 1968.

THE HIGHLANDS

For Asphalt Roofing Shingles (Int. Cl. 19).
First use at least on or about June 22, 1967.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 286,938. International Horseshoe Co., Inc., d.b.a. Multi-Products Co., Lodi, Calif. Filed Dec. 14, 1967.



Applicant asserts trademark rights in the "feather design on the nailhead" for horseshoe nails, the diagram on the drawing is a fragmented one showing the mark "in situ" and no claim to the entire nail is made.
For Horseshoe Nails (Int. Cl. 6).
First use Sept. 1, 1967.

SN 290,357. Walker Crosweller and Company Limited, Cheltenham, Gloucestershire, England. Filed Feb. 5, 1968.

KELTA

For Shower Bath Appliances and Fittings for Shower Baths (Int. Cl. 11).
First use July 1967.

SN 305,191. The Allen Manufacturing Company, Hartford, Conn. Filed Aug. 15, 1968.

SPOT-LOK

For Threaded Fasteners (Int. Cl. 6).
First use May 16, 1968.

SN 316,936. Elco Tool and Screw Corporation, Rockford, Ill. Filed Jan. 21, 1969.

Owner of Reg. No. 762,175.
For Screws, Bolts, Nuts, Washers, Plugs, Rivets, Pins, and Cold-Headed and Cold-Formed Metal Specialty Items (Int. Cl. 6).
First use November 1961.

Class 14—Metals and Metal Castings and Forgings

SN 316,966. American Smelting and Refining Company, New York, N.Y. Filed Jan. 21, 1969.

FMD

For Aluminum, Brass, Bronze, Lead Base and Tin Base Alloys in Ingots and Bars (Int. Cl. 6).
First use December 1938.

Class 15—Oils and Greases

SN 296,254. Standard Oil Company, Flemington, N.J. Filed Apr. 23, 1968.

EDCO

For Petroleum and Petroleum Products—Namely, Industrial Oils and Greases, Petroleum and Mineral Waxes, Lubricants, Hydrocarbon Fuels, Petroleum Illuminants and Crude Oil (Int. Cl. 4).
First use Dec. 5, 1967.

SN 303,929. Howard Salten, Forest Hills, N.Y. Filed July 30, 1968.

PESYA

For Candles (Int. Cl. 4).
First use Mar. 15, 1967.

SN 305,737. Hastings Manufacturing Company, Hastings, Mich. Filed Aug. 22, 1968.

Torque

For Chemical Additives for Lubricating Oils for Internal Combustion Engines (Int. Cl. 1).
First use Aug. 9, 1968.

SN 306,176. The Standard Oil Company, Cleveland, Ohio. Filed Aug. 28, 1968.

FACTOPET

Owner of Reg. Nos. 651,650 and 788,945.
For Petrolatum for Use as an Industrial Lubricant (Int. Cl. 4).
First use July 11, 1968.

SN 306,177. The Standard Oil Company, Cleveland, Ohio. Filed Aug. 28, 1968.

FACTOPURE

Owner of Reg. Nos. 190,708 and 797,449.
For Lubricating Oil (Int. Cl. 4).
First use July 11, 1968.

SN 306,179. The Standard Oil Company, Cleveland, Ohio. Filed Aug. 28, 1968.

FACTOKOTE

Owner of Reg. Nos. 190,708 and 785,059.
For Lubricant With Rust Preventive Properties for Industrial Use (Int. Cl. 4).
First use July 11, 1968.

SN 306,180. The Standard Oil Company, Cleveland, Ohio. Filed Aug. 28, 1968.

FACTOFILM

Owner of Reg. Nos. 190,708 and 784,280.
For Lubricant for Industrial Use (Int. Cl. 4).
First use July 17, 1968.

SN 306,181. The Standard Oil Company, Cleveland, Ohio. Filed Aug. 28, 1968.

FACTOCOOL

Owner of Reg. Nos. 190,708 and 562,733.
For Metal Working Oil (Int. Cl. 4).
First use July 17, 1968.

SN 306,183. The Standard Oil Company, Cleveland, Ohio. Filed Aug. 28, 1968.

FACTOWAY

Owner of Reg. Nos. 190,708 and 790,918.
For Lubricant for Industrial Use (Int. Cl. 4).
First use July 11, 1968.

SN 306,184. The Standard Oil Company, Cleveland, Ohio. Filed Aug. 28, 1968.

FACTOCYL

Owner of Reg. Nos. 190,708 and 531,508.
For Lubricating Oil (Int. Cl. 4).
First use July 11, 1968.

SN 306,185. The Standard Oil Company, Cleveland, Ohio. Filed Aug. 28, 1968.

FACTOVIS

Owner of Reg. Nos. 190,708 and 651,650.
For Lubricating Oil (Int. Cl. 4).
First use July 11, 1968.

SN 306,186. The Standard Oil Company, Cleveland, Ohio. Filed Aug. 28, 1968.

FACTRAN

Owner of Reg. Nos. 190,708 and 639,239.
For Grease (Int. Cl. 4).
First use July 11, 1968.

Class 16—Protective and Decorative Coatings

SN 308,598. Mary Carter Industries, Inc., d.b.a. M.C.I. Co., Tampa, Fla. Filed Oct. 1, 1968.



For Paints, Varnishes, and Enamels (Int. Cl. 2).
First use Aug. 1, 1968.

SN 313,292. Harris Paint Company, Tampa, Fla. Filed Nov. 29, 1968.

GALVA-METAL

For Rust Inhibitive Undercoating for Metal Surfaces, Specifically for Steel, Iron, Tin, Aluminum, Galvanized Iron and Other Zinc Coated Surfaces, as Well as Wood (Int. Cl. 2).
First use on or about Oct. 2, 1967.

Class 17—Tobacco Products

SN 293,806. Conwood Corporation, Memphis, Tenn. Filed Mar. 21, 1968.

LJUNGLÖFS 16 97

For Snuff (Int. Cl. 34).
First use Feb. 26, 1968.

SN 310,183. Brown & Williamson Tobacco Corporation, Louisville, Ky. Filed Oct. 22, 1968.

FLAIR

For Cigarettes (Int. Cl. 34).
First use on or about Sept. 26, 1968.

SN 310,184. Brown & Williamson Tobacco Corporation, Louisville, Ky. Filed Oct. 22, 1968.

SIERRA

For Cigarettes (Int. Cl. 34).
First use on or about Sept. 26, 1968.

SN 310,185. Brown & Williamson Tobacco Corporation, Louisville, Ky. Filed Oct. 22, 1968.

LAREDO

For Cigarettes (Int. Cl. 34).
First use on or about Sept. 26, 1968.

SN 310,186. Brown & Williamson Tobacco Corporation, Louisville, Ky. Filed Oct. 22, 1968.

VENTURA

For Cigarettes (Int. Cl. 34).
First use on or about Sept. 26, 1968.

SN 316,390. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed Jan. 13, 1969.

BRISK

For Cigarettes (Int. Cl. 34).
First use Dec. 18, 1968.

SN 316,505. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed Jan. 14, 1969.

NOMAD

For Cigarettes (Int. Cl. 34).
First use Dec. 18, 1968.

SN 316,506. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed Jan. 14, 1969.

CLAIM

For Cigarettes (Int. Cl. 34).
First use Dec. 18, 1968.

SN 316,507. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed Jan. 14, 1969.

PAGEANT

For Cigarettes (Int. Cl. 34).
First use Dec. 18, 1968.

Class 18—Medicines and Pharmaceutical Preparations

SN 305,888. Johnson & Johnson, New Brunswick, N.J. Filed Aug. 26, 1968.

SINACTIN

For Analgesic Tablets (Int. Cl. 5).
First use May 7, 1968.

SN 308,736. American Home Products Corporation, New York, N.Y. Filed Oct. 3, 1968.

POUNDS AWAY

For Preparation for Appetite Control (Int. Cl. 5).
First use Sept. 23, 1968.

SN 309,811. American Home Products Corporation, New York, N.Y. Filed Oct. 17, 1968.

THIOZET

For Anthelmintic Preparation for Veterinary Use (Int. Cl. 5).
First use Sept. 30, 1968.

SN 314,168. Air Reduction Company, Incorporated, New York, N.Y. Filed Dec. 11, 1968.

AIRCO

Owner of Reg. No. 146,156 and others.
For Anesthetics and Medical Gases—Namely, Cyclopropane, Ethylene, Ethyl Chloride, Ethyl Vinyl Ether, Trifluoroethyl Vinyl Ether, Trichloroethylene, Nitrous Oxide, Oxygen, Carbon Dioxide, Oxygen-Carbon Dioxide Mixtures; Helium, Helium-Oxygen Mixtures; Hexafluorodiethyl Ether a Convulsive Agent for Convulsive Shock Therapy (Int. Cl. 5).
First use at least as early as 1918.

SN 315,782. Osto Pharmaceutical Company, Elizabeth, N.J. Filed Jan. 3, 1969.

OSTOPRED

For Adrenocortical Steroid Tablets (Int. Cl. 5).
First use Dec. 12, 1968.

SN 317,179. Beecham Group Limited, d.b.a. Beecham Research Laboratories, Brentford, Middlesex, England. Filed Jan. 22, 1969.

AMPICLOX

Owner of British Reg. No. 856,886, dated Nov. 11, 1963.
For Antibiotic Preparations (Int. Cl. 5).

SN 317,187. Parke, Davis & Company, Detroit, Mich. Filed Jan. 22, 1969.

BASOQUIN

For Antimalarial Preparation (Int. Cl. 5).
First use on or before Aug. 21, 1968.

SN 317,189. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Jan. 22, 1969.

QUINAZIL

For Bronchodilator Preparation (Int. Cl. 5).
First use Dec. 27, 1968.

Class 19—Vehicles

SN 299,819. Aluminum Goods Limited, Toronto, Ontario, Canada. Filed June 6, 1968.

HURON

Priority claimed under Sec. 44(d) on Canadian application filed Dec. 15, 1967; Reg. No. 158,954, dated Oct. 25, 1968.
For Truck Bodies and Truck Body Kits (Int. Cl. 12).

SN 300,483. Rockwell-Standard Company, Pittsburgh, Pa. Filed June 14, 1968.

HYDRA FAIL-SAFE

Applicant disclaims the term "Fail-Safe" apart from the mark as shown. Owner of Reg. No. 761,242.
For Auxiliary Actuators for Fluid-Powered Vehicle Brakes (Int. Cl. 12).
First use May 7, 1968.

SN 301,622. Bennie B. Herboldsheimer, d.b.a. Benaire, Potter, Nebr. Filed June 28, 1968.

BENAIRE

For Evaporative Coolers for Vehicle Cabs (Int. Cl. 11).
First use on or about June 1, 1968.

SN 304,722. Walthour & Hood Company, Atlanta, Ga. Filed Aug. 8, 1968.

Walco

For Bicycles (Int. Cl. 12).
First use Feb. 26, 1925.

SN 308,455. Beech Aircraft Corporation, Wichita, Kans. Filed Sept. 30, 1968.

DUKE

Owner of Reg. No. 418,379.
For Airplanes and Parts Therefor (Int. Cl. 12).
First use Aug. 8, 1968.

SN 309,889. Penn Yan Boats, Inc., Penn Yan, N.Y. Filed Oct. 17, 1968.

TUNNEL DRIVE

For Boats (Int. Cl. 12).
First use at least as early as Sept. 19, 1968.

SN 311,192. W. H. Miner, Inc., Chicago, Ill. Filed Nov. 1, 1968.

SHOCK BUSTERS

For Shock Absorbers, Such as Draft Gears, Snubbers and Buffers for Railway Vehicles (Int. Cl. 12).
First use Oct. 8, 1968.

SN 316,805. Motor Coach Corporation, Nappanee, Ind. Filed Jan. 16, 1969.

OMEGA

For Motor Coaches and Motorized Mobile Home Trailers (Int. Cl. 12).
First use Dec. 13, 1968.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 258,153. Rogers Corporation, Rogers, Conn. Filed Nov. 7, 1966.

POSITERM

For Flexible Circuit Cable Assemblies Including Flat Flexible Circuitry, Laminar Bus Assemblies, Connectors and Plugs (Int. Cl. 9).
First use on or about Sept. 30, 1966.

SN 277,061. National Marine Service Incorporated, St. Louis, Mo. Filed July 28, 1967.

TUGMONITOR

For System for the Monitoring of and Regulation or Automatic Control of Conditions Relating to the Operation of a Vessel (Int. Cl. 9).
First use May 4, 1967.

SN 288,552. Stratford Retreat House, White Plains, N.Y. Filed Jan. 10, 1968.

COLOR WHIZ

The term "Color" is claimed only in connection with the mark as shown.
For Television Antennas (Int. Cl. 9).
First use Sept. 12, 1967.

SN 289,916. Rangaire Corporation, Cleburne, Tex. Filed Jan. 30, 1968.

Chambers

For Electric Dishwashers and Electric Garbage Disposers (Int. Cl. 7).
First use May 1, 1965.

SN 292,336. Plessey Airborne Corporation, Hillside, N.J., assignee of Airborne Accessories Corporation, Hillside, N.J. Filed Mar. 4, 1968.

ultraIARM

For Electronic Devices for Over-Temperature Protection, or for Sensing or Controlling Temperature (Int. Cl. 9).
First use Aug. 31, 1967.

SN 295,157. Optimation, Inc., Sun Valley, Calif. Filed Apr. 8, 1968.

For Electronic Apparatus—Namely, Oscillators, Amplifiers, A.C. to A.C. Power Supplies and Parts Therefor (Int. Cl. 9).
First use Feb. 28, 1968.

SN 296,823. Gilbert Electronics, Inc., Jonesboro, Ark. Filed Apr. 29, 1968.

FLINTROL

For Electric Control Equipment for Flying Insects and Consisting of a Controlled-Spectrum Fluorescent Light Source, an Electrical Grid Section, Charged With High Voltage Which Electrocutes the Insects Upon Contact, a Removable Tray To Contain the Insects, and Parts Therefor (Int. Cl. 9).
First use Mar. 6, 1968.

SN 298,996. Alert Stamping & Mfg. Co., Inc., Bedford Heights, Ohio. Filed May 24, 1968.

ALERT

For Electric Cord Reels (Int. Cl. 9).
First use December 1964.

SN 299,675. ITT Blackburn Corporation, St. Louis, Mo. Filed June 4, 1968.



The drawing is lined for the color gray, but color is not claimed as a feature of the mark.
For Electrical Connectors (Int. Cl. 9).
First use Apr. 19, 1968.

SN 301,556. Samuel Steckman, Fort Lee, N.J. Filed June 27, 1968.

HYTRON

For Electron Tubes and Transistors and Rectifiers (Int. Cl. 9).
First use Apr. 2, 1968.

SN 303,878. T.N.E. Incorporated, Jefferson County, Mo. Filed July 30, 1968.

TNEDAX

For Electrical and Electronic Equipment—Namely, Electric Motors, Vibration Detectors, Automatic Cut Off Units, Electronic Controllers, Specialty Circuits; and Electronic Sensors for Monitoring the Operation of Electrically Operable Equipment; and Parts Therefor (Int. Cl. 9).
First use July 11, 1968.

SN 305,660. Majestic Creations, Inc., Richmond Hill, N.Y. Filed Aug. 21, 1968.

ROYAL MAJESTIC

For Wall and Table Electric Lamps (Int. Cl. 11).
First use May 22, 1968.

SN 307,857. Olsen Magnetic, Inc., Mount Vernon, Ill. Filed Sept. 20, 1968.

OLMAG

For Lamianted Magnetic Cores for Electromagnetic Inductive Devices Such as Transformers, Inductances and Ballasts (Int. Cl. 9).
First use Aug. 27, 1968.

SN 309,315. Union Carbide Corporation, New York, N.Y. Filed Oct. 9, 1968.

UCAR

Owner of Reg. No. 837,046.
For Graphite Electrodes and Connecting Pins Therefor (Int. Cl. 9).
First use on or about Jan. 3, 1968.

SN 309,479. Ted L. Ridings, d.b.a. T. R. Imports, Nashville, Tenn. Filed Oct. 11, 1968.



For Combination Transistor Radio-Guitars (Int. Cl. 9).
First use Oct. 1, 1967.

SN 309,804. Winegard Company, Burlington, Iowa. Filed Oct. 16, 1968.

COLOR-WEDGE

For Television Antennas (Int. Cl. 9).
First use Sept. 12, 1968.

SN 316,504. Natvar Corporation, Woodbridge, N.J. Filed Jan. 14, 1969.

DURAGLAS

For Electrical Insulation Material in Sheet and Tape Form (Int. Cl. 17).
First use Sept. 25, 1968.

Class 22—Games, Toys, and Sporting Goods

SN 266,428. Theodore W. Johnson and Ralph Silvola (joint venture), d.b.a. Educational Playhouse Company, Detroit, Mich. Filed Mar. 10, 1967.

ALLFUN

For Educational Playhouses (Int. Cl. 28).
First use Feb. 24, 1967.

SN 272,843. Citizens Bank and Trust Company, Wadsworth, Ohio, assignee of Edward L. Mobley, Jr., d.b.a. The Edward Mobley Co., Wadsworth, Ohio. Filed June 1, 1967.

BAA-BAA

For Fanciful Character Reproduced in the Form of a Squeeze Type Toy Animal (Int. Cl. 28).
First use May 23, 1966.

SN 277,893. Daz-E-Mae Lure Company, Oklahoma City, Okla. Filed Aug. 9, 1967.

DAZ-E-MAE

For Fishing Lures (Int. Cl. 28).
First use April 1955.

SN 278,205. Lawrence Allan Gilmore, d.b.a. Sure-Lure Baits, Mission City, British Columbia, Canada. Filed Aug. 14, 1967.

KAM-LURE

Priority claimed under Sec. 44(d) on Canadian application filed Mar. 2, 1967; Reg. No. 159,700, dated Dec. 6, 1968.
For Fishing Lures (Int. Cl. 28).

SN 278,250. Gerald K. Stevens, Burbank, Calif. Filed Aug. 14, 1967.

CYCLE PAL

The term "Cycle" is disclaimed apart from the mark as shown.
For Children's Tricycles, Tricycle Sidecars, and Attachment Apparatus Therefor (Int. Cl. 12).
First use Jan. 14, 1967.

SN 284,367. Gladding Corporation, South Otselic, N.Y. Filed Nov. 8, 1967.

THE CLASSIC SQUARE

Owner of Reg. No. 153,180.
For Fishing Lines (Int. Cl. 28).
First use Aug. 22, 1912.

SN 287,923. Larami Corporation, Philadelphia, Pa. Filed Jan. 2, 1968.

FUNNY FLYER

Applicant disclaims the word "Flyer" apart from the association as shown.
For Toy Airplanes Incorporating Humorous Designs (Int. Cl. 28).
First use Nov. 11, 1967.

SN 295,391. Venus Esterbrook Corporation, New York, N.Y. Filed Apr. 10, 1968.

CRAZY COLORS

Applicant disclaims exclusive rights to the term "Colors" apart from the mark.
For Children's Creative Design Sets (Int. Cl. 28).
First use Feb. 15, 1968.

SN 302,118. Pedigo Pork Rind Company, Inc., Bowling Green, Ky. Filed July 5, 1968.

PEDI-GO-GO

Owner of Reg. No. 829,054.
For Fish Bait (Int. Cl. 28).
First use on or about June 10, 1968.

SN 302,648. Sun Corporation, Barberton, Ohio. Filed July 12, 1968.

HOPPITY HOP

For Play Balls (Int. Cl. 28).
First use June 12, 1968.

SN 306,738. Pictorial Publishers, Inc., Indianapolis, Ind. Filed Sept. 6, 1968.

ROLL-A-WORD

For Equipment Sold as a Unit for Playing an Educational Game (Int. Cl. 28).
First use July 29, 1968.

SN 308,978. Mattel, Inc., Hawthorne, Calif. Filed Oct. 7, 1968.

POWER-LIMBS

For Space Toy Comprising Stilts for the Legs of a Doll and Arms Attached to the Stilt Structure To Function as Extended Arms Relative to the Doll Body (Int. Cl. 28).
First use Aug. 30, 1968.

SN 311,786. Kenner Products Company, Cincinnati, Ohio. Filed Nov. 12, 1968.

BUBBL-JET

For Bubble Blowing Toys (Int. Cl. 28).
First use Feb. 26, 1965.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 282,194. Harold D. Johnson, d.b.a. Ideas for Industry, Sycamore, Ill. Filed Oct. 10, 1967.



The drawing is lined for the colors blue and silver, the colors do not form an essential part of the mark.
For Spray Guns (Int. Cl. 7).
First use Nov. 7, 1966.

SN 282,840. Triple Kleen Corporation, Gadsden, Ala. Filed Oct. 18, 1967.

TRIPLE-KLEEN

Owner of Reg. No. 787,115.
For Portable, High Pressure Water/Detergent Spray Unit for Cleaning Motors and Metal Parts (Int. Cl. 7).
First use Apr. 18, 1966.

SN 283,802. J. A. Henckels Zwillingswerk AG, Solingen, Germany. Filed Oct. 31, 1967.

TWIN

Owner of German Reg. No. 701,580, dated Apr. 5, 1957; and U.S. Reg. Nos. 649,403, 768,620 and 773,473.
For Cutlery of Non-Precious Metal—Namely, Table Flatware, Cake, Salad, Meat and Serving Forks and Serving Spoons; Kitchen Knives, Electricians' Knives, Erasing Knives, Hunting Knives, Industrial Knives, Pocket Knives and Woodworking Knives; Ice Tongs, Sugar Tongs and Food Serving Tongs; Cake Lifters; Ladles; Scissors; Hammers; Cleavers; Household Steels; Nutcrackers Corkscrews; Cigar Trimmers; Cigar Box Openers; Bottle Openers; Letter Openers; Magnetic Knife Holders; Knife Sharpeners, Razors and Razor Blades; Hair Cutters and Woodcarving Tools (Int. Cls. 8, 16, 21, and 34).

SN 283,803. J. A. Henckels Zwillingswerk AG, Solingen, Germany. Filed Oct. 31, 1967.

TWINWORKS

Owner of German Reg. No. 111,575, dated Oct. 22, 1908; and U.S. Reg. Nos. 658,117, 773,474, and others.
For Cutlery of Non-Precious Metal—Namely, Table Flatware, Cake, Salad, Meat and Serving Forks and Serving Spoons; Kitchen Knives, Electricians' Knives, Erasing Knives, Hunting Knives, Industrial Knives, Pocket Knives and Woodworking Knives; Ice Tongs, Sugar Tongs and Food Serving Tongs; Cake Lifters; Ladles; Scissors; Hammers; Cleavers; Household Steels; Nutcrackers; Corkscrews; Cigar Trimmers; Cigar Box Openers, Bottle Openers; Letter Openers; Magnetic Knife Holders; Knife Sharpeners; Razors and Razor Blades; Hair Cutters and Woodcarving Tools (Int. Cls. 8, 16, 21, and 34).

SN 284,205. The Johnson-March Corporation, Philadelphia, Pa. Filed Nov. 6, 1967.

INCIN-A-GUARD

For Gas Scrubber—Namely, an Apparatus for Removing Dust From Gas or Air by a Combination of Hydraulic, Centrifugal and Aero-Dynamic Means (Int. Cl. 11).
First use Mar. 31, 1967.

SN 286,379. Sperry Rand Corporation, New York, N.Y. Filed Dec. 6, 1967.

SPERRY RAND

For Fluid Power Systems and Components—Namely, Transmissions; Pumps; Motors; Cylinders; Control Panels; Storage Accumulators; Switches, Power Take-Offs; Ratio Speed Changers; Winches; and Parts Therefor (Int. Cl. 7).
First use Aug. 16, 1967.

SN 288,984. Sullivan Machinery Company, Inc., Michigan City, Ind. Filed Jan. 16, 1968.

SULLISCREW

For Air Compressors of the Flood Cooled Rotary Screw Type (Int. Cl. 7).
First use Jan. 23, 1966.

SN 301,282. Toro Manufacturing Corporation, Minneapolis, Minn. Filed June 24, 1968.

ROADMASTER

For Mowers (Int. Cl. 7).
First use at least as early as 1936.

SN 302,059. Econ-O-Line Manufacturing Company, Houston, Tex. Filed July 5, 1968.

ECON-O-LINE

For Automatic Bagging and Packaging Machines (Int. Cl. 7).
First use Sept. 8, 1967.

SN 302,875. Compackager Corporation, Washington, D.C., assignee, by mesne assignment, of Washington Incinerator Sales and Service, Inc., Alexandria, Va. Filed July 16, 1968.

COMPACKAGER

For Trash Compacting Machines (Int. Cl. 7).
First use at least as early as June 19, 1968.

SN 303,026. AMP Incorporated, Harrisburg, Pa. Filed July 18, 1968.

PICABOND

Owner of Reg. No. 832,129.
For Hand Tools To Apply Electrical Connectors (Int. Cl. 8).
First use April 1966.

SN 303,053. Keystone Automotive Warehouse, Inc., Kansas City, Mo. Filed July 18, 1968.



For Parts for Vehicles—Namely, Carburetors (Int. Cl. 12).
First use July 8, 1968.

SN 303,511. Davis Manufacturing, Inc., Wichita, Kans. Filed July 24, 1968.

FLEETLINE

For Earthworking Trenchers and Parts Thereof (Int. Cl. 7).
First use Dec. 13, 1967.

SN 303,534. Lee Metal Products Co., Inc., Philipsburg, Pa. Filed July 24, 1968.

ALROY

For Metallic Kettles Incorporating an Agitator for Stirring Materials Such as Explosives and Cosmetics at Ambient or Elevated Temperatures (Int. Cl. 7).
First use Jan. 30, 1967.

SN 303,538. Mor-Win Products, Inc., Los Angeles, Calif. Filed July 24, 1968.



Owner of Reg. No. 744,127.
For Devices Used in Consumption of Foods and Beverages—Namely, Plastic Knives, Forks, Spoons, Cocktail Picks, Sandwich Picks, Stir Rods, and Steak Markers (Int. Cls. 8 and 21).
First use Aug. 31, 1964.

SN 304,272. Wheel Trueing Tool Company, Detroit, Mich. Filed Aug. 2, 1968.



For Diamond Tools—Namely, Dressing Tools, Turning and Boring Tools, Radius Forming Tools, Drills and Drill Bits, Saw and Saw Blades, and Portable Drilling Machines (Int. Cl. 7).
First use July 2, 1968.

SN 305,378. Precision Diamond Tool Company, Elgin, Ill. Filed Aug. 19, 1968.

CRYSTAL-CLAD

For Abrading and Dressing Tools—Namely, Blocks and Wheels for Dressing Surface and Tool Grinders, Circular Saws, Core Drills, Routers, and Hole Saws (Int. Cl. 7).
First use Aug. 8, 1968.

SN 306,505. Oliver Corporation, Chicago, Ill. Filed Sept. 3, 1968.

ROTO-FLO FEED

For Forage Crops Harvesting Machinery (Int. Cl. 7).
First use Dec. 22, 1959.

SN 307,677. The Singer Company, New York, N.Y. Filed Sept. 18, 1968.

STYLIST

Owner of Reg. No. 310,667.
For Sewing Machines, Their Parts and Attachments (Int. Cl. 7).
First use July 24, 1968.

SN 307,747. The Lug-All Company, Haverford, Pa. Filed Sept. 19, 1968.

LUG-ALL

Owner of Reg. No. 552,776.
For Winches and Hoists (Int. Cl. 7).
First use Apr. 7, 1949.

SN 309,246. Emme di Emme Ltd., Modena, Italy. Filed Oct. 9, 1968.

RESY

For Hedge and Grass Clippers (Int. Cl. 7).
First use May 24, 1966; in commerce January 1968.

SN 311,037. International Patent Developments Limited, Nassau, New Providence, Bahamas. Filed Oct. 31, 1968.

ROTOSTOCK

Owner of British Reg. No. B886,572, dated Nov. 5, 1965.
For Gearing Systems for Power Operated Rotary Tools and Cutting Tools for Use Therewith (Int. Cl. 7).

SN 311,708. Verson Manufacturing Company, Dallas, Tex. Filed Nov. 8, 1968.

CONVERTIPAC

For Transmissions and Gear Boxes for Mechanical Press Brakes, Presses, and Shears (Int. Cl. 7).
First use Feb. 28, 1968.

Class 26—Measuring and Scientific Appliances

SN 271,664. Tinius Olsen Testing Machine Company, Willow Grove, Pa. Filed May 16, 1967.

LOCAP

For Physical Testing Machines Used in Testing Specimens for Tension, Compression or Flexure (Int. Cl. 9).
First use October 1949.

SN 278,333. Whitman Publishing Company, Racine, Wis. Filed Aug. 15, 1967.

WHITMAN

Owner of Reg. Nos. 697,472, 721,356, and others.
For Magnifying Lenses, and Stamp Collectors' Perforation Gages (Int. Cl. 9).
First use January 1964.

SN 280,896. Thermo King Corporation, Minneapolis, Minn. Filed Sept. 21, 1967.

THERMOGUARD

Owner of Reg. Nos. 522,496, 811,277, and others.
For Thermostat for Controlling Apparatus for Heating and/or Cooling a Space (Int. Cl. 9).
First use Jan. 31, 1966.

SN 281,115. Raytek, Inc., Mountain View, Calif. Filed Sept. 25, 1967.

CIRCUIT RYDER

For Radiometric Thermometers (Int. Cl. 9).
First use Feb. 9, 1967.

SN 285,389. Better Packages, Inc., Shelton, Conn. Filed Nov. 22, 1967.

COLOR TAPECULATOR

Applicant disclaims the word "Color" apart from the mark as shown.
For Color Coordinated Tape Measuring Scale for Use in Coordinating the Length of a Carton to the Length of the Sealing Tape Which Is Fed by a Tape Dispensing Machine (Int. Cl. 9).
First use July 1963.

SN 288,039. Tecnifax Corp., Holyoke, Mass. Filed Jan. 3, 1968.

ERASA/DURE

For Sensitized Reproduction Papers (Int. Cl. 1).
First use Oct. 12, 1967.

SN 289,961. Becton, Dickinson and Company, East Rutherford, N.J. Filed Jan. 31, 1968.

YANKEE PT

Owner of Reg. Nos. 599,650 and 635,540.
For Disposable Pipettes for Use in Laboratory Testing Procedures (Int. Cl. 9).
First use on or about Dec. 18, 1967.

SN 302,737. General Dynamics Corporation, Rochester, N.Y. Filed July 15, 1968.

HYDROSHOCK

For Underwater Acoustic Energy Source for Testing and Measuring Purposes (Int. Cl. 9).
First use at least as early as Feb. 19, 1968.

SN 303,115. J. Ulano & Company, Inc., Brooklyn, N.Y. Filed July 19, 1968.

BLUE POLY-2

For Presensitized Film for Use in Screen Printing (Int. Cl. 1).
First use in or about 1966.

SN 303,116. J. Ulano & Company, Inc., Brooklyn, N.Y. Filed July 19, 1968.

BLUE POLY-3

For Presensitized Film for Use in Screen Printing (Int. Cl. 1).
First use in or about 1966.

SN 304,299. Barnes Engineering Company, Stamford, Conn. Filed Aug. 5, 1968.

IRCAT

For Radiometric Clear Air Turbulence Sensor for Detecting Atmospheric Disturbances (Int. Cl. 9).
First use Feb. 5, 1968.

SN 305,557. Linear Corporation, Los Angeles, Calif. Filed Aug. 20, 1968.

LINEAR

For Signal Transmitters and Signal Receivers for Remote Radio Controlled Devices Such as Garage Door Openers, Burglar Alarms, Warning and Detection Devices (Int. Cl. 9).
First use on or about May 29, 1961.

SN 305,711. B-R Importing Co., Inc., New York, N.Y. Filed Aug. 22, 1968.

MILBEN

For Telescopes, Microscope-Projector, Microscope Kits Comprised of a Microscope, Prepared Slides, Tweezers, a Needle, Scissors, Scalpel, a Spatula, and a Magnifying Glass; Microscopes, and Related Optical Accessories—Namely, Slide Making Kits Comprised of Blank Slides, Cover Glasses, Cover Slips for Covering Specimens on Slides, and a Jar of Balsam; Prepared Slides, Staining Set for Making Slides, and Binoculars (Int. Cl. 9).
First use May 1958.

SN 307,985. H. Daroff & Sons, Inc., Philadelphia, Pa. Filed Sept. 23, 1968.

Accu-Mark

For Trouser Measuring Devices (Int. Cl. 9).
First use on or about Feb. 10, 1968.

SN 308,608. Durolith Corporation, Easton, Md. Filed Oct. 1, 1968.

DUROMATE

For Automatic Lithographic Plate Developing Machines (Int. Cl. 9).
First use Sept. 1, 1968.

SN 308,935. Tronac, Inc., Orem, Utah. Filed Oct. 4, 1968.

TRONAC

For Electronic Temperature Controls for Fluid Systems (Int. Cl. 9).
First use May 1, 1959.

SN 309,078. Picker Corporation, White Plains, N.Y. Filed Oct. 11, 1968.

MINIMASS

For Spectrometer Apparatus and Parts Therefor (Int. Cl. 9).
First use June 11, 1968.

SN 311,825. Ciba Limited, Basle, Switzerland. Filed Nov. 12, 1968.

CIBACHROME-PRINT

Owner of Swiss Reg. No. 229,892, dated Jan. 29, 1968; and U.S. Reg. No. 753,583.
For Photographic Films and Sensitized Photographic Papers (Int. Cl. 1).

SN 311,905. Modutec Incorporated, Norwalk, Conn. Filed Nov. 12, 1968.

MODUTEC

For Ammeters and Voltmeters (Int. Cl. 9).
First use Sept. 20, 1968.

SN 314,292. Felsenthal Instruments Company, Melrose Park, Ill. Filed Dec. 12, 1968.

DIAL-A-CON

For Hand-Operated Computers and/or Calculators (Int. Cl. 9).
First use November 1968.

SN 317,921. PPG Industries, Inc., Pittsburgh, Pa. Filed Jan. 30, 1969.

SOLARBRONZE

Owner of Reg. No. 754,160.
For Ophthalmic and Optical Glass (Int. Cl. 9).
First use at least as early as July 30, 1968.

SN 318,506. Kleer-Vu Industries, Inc., New York, N.Y. Filed Feb. 6, 1969.

OP

Owner of Reg. No. 848,816.
For Microfilm Processing Equipment (Int. Cl. 9).
First use Sept. 15, 1965.

Class 27 — Horological Instruments

SN 307,460. General Time Corporation, Stamford, Conn. Filed Sept. 16, 1968.

RICHWOOD

For Clocks (Int. Cl. 14).
First use June 15, 1962.

SN 312,558. Brac AG, Solothurn, Switzerland. Filed Nov. 19, 1968.

TERRAMAR

For Watches and Parts Thereof (Int. Cl. 14).
First use Jan. 15, 1967.

Class 28 — Jewelry and Precious-Metal Ware

SN 307,616. National Ring and Leather Corporation, Mansfield, Ohio. Filed Sept. 18, 1968.

NRL

For Finger Rings and Jewelry (Int. Cl. 14).
First use at least as early as Jan. 1, 1950.

Class 29 — Brooms, Brushes, and Dusters

SN 278,332. Whitman Publishing Company, Racine, Wis. Filed Aug. 15, 1967.

WHITMAN

Owner of Reg. Nos. 697,472, 721,356, and others.
For Artist Paint Brushes (Int. Cl. 16).
First use June 20, 1966.

Class 30 — Crockery, Earthenware, and Porcelain

SN 290,065. Ashcraft Distributors, Inc., Birmingham, Ala. Filed Feb. 1, 1968.

Fashion Royale

For China Dinnerware (Int. Cl. 21).
First use Nov. 27, 1967.

Class 31 — Filters and Refrigerators

SN 294,965. North Star Specialties Company, Minneapolis, Minn. Filed Apr. 4, 1968.

AIR SENTRY

Exclusive use of the word "Air" is disclaimed apart from the mark.
For Industrial Air Filtering and Dust Collecting Units for Use With Grinders, Sanders, Shavers, and Other Industrial Machinery and Processes for Keeping Floors and Machines Clean and Minimizing Respiratory Ailments (Int. Cl. 11).
First use Feb. 9, 1965.

SN 297,397. Velcon Filters, Inc., San Jose, Calif. Filed May 6, 1968.

VELCON

For Filter Separator Apparatus for Removing Water Contaminants From Hydrocarbon Fluids (Int. Cl. 11).
First use Apr. 18, 1968.

SN 300,836. Crescent Metal Products, Inc., Cleveland, Ohio. Filed June 13, 1968.

CRES-COR

Owner of Reg. Nos. 606,950 and 619,930.
For Cooling Units Containing a Reusable Refrigerant, Used by Freezing or Refreezing and Inserting in the Spaces To Be Cooled (Int. Cl. 34).
First use Sept. 15, 1955.

SN 309,563. Filterite Corporation, Timonium, Md. Filed Oct. 14, 1968.

UNI-SEAL

For Fluid Filters, Housings and Casings Therefor Including Oil Filters for Internal Combustion Engines (Int. Cls. 7 and 11).
First use Sept. 14, 1968.

SN 310,682. National Aquarium Supplies & Accessories, Inc., Orange, N.J. Filed Oct. 28, 1968.

Filt-R-Mic

For Fish Tank Filters (Int. Cl. 11).
First use July 18, 1968.

Class 32 — Furniture and Upholstery

SN 288,127. Sprague & Carleton, Inc., Houston, Tex. Filed Jan. 4, 1968.

DOWRY

For Protective Finish Sold as a Component of Applicant's Furniture—Namely, Living Room, Dining Room, and Bedroom Furniture (Int. Cl. 20).
First use Dec. 18, 1967.

SN 288,128. Sprague & Carleton, Inc., Houston, Tex. Filed Jan. 4, 1968.

SAYBROOK

For Protective Finish Sold as a Component of Applicant's Furniture—Namely, Living Room, Dining Room, and Bedroom Furniture (Int. Cl. 20).
First use Dec. 18, 1967.

SN 288,129. Sprague & Carleton, Inc., Houston, Tex. Filed Jan. 4, 1968.

THYME-LITE

For Protective Finish Sold as a Component of Applicant's Furniture—Namely, Living Room, Dining Room, and Bedroom Furniture (Int. Cl. 20).
First use Oct. 25, 1967.

SN 288,130. Sprague & Carleton, Inc., Houston, Tex. Filed Jan. 4, 1968.

OLD THYME

For Protective Finish Sold as a Component of Applicant's Furniture—Namely, Living Room, Dining Room, and Bedroom Furniture (Int. Cl. 20).
First use Oct. 25, 1967.

SN 288,131. Sprague & Carleton, Inc., Houston, Tex. Filed Jan. 4, 1968.

ACCENTS AMERICANA

For Framed Pictures and Mirrors (Int. Cls. 16 and 20).
First use Dec. 11, 1967.

SN 288,132. Sprague & Carleton, Inc., Houston, Tex. Filed Jan. 4, 1968.

OLD MILL

For Protective Finish Sold as a Component of Applicant's Furniture—Namely, Living Room, Dining Room, and Bedroom Furniture (Int. Cl. 20).
First use Dec. 18, 1967.

SN 288,134. Sprague & Carleton, Inc., Houston, Tex. Filed Jan. 4, 1968.

SPRAGUE'S CROSSING

For Furniture—Namely, Living Room, Dining Room, and Bedroom Furniture (Int. Cl. 20).
First use Oct. 18, 1967.

SN 288,136. Sprague & Carleton, Inc., Houston, Tex. Filed Jan. 4, 1968.

COUNTRY CABINET MAKER

For Furniture—Namely, Living Room, Dining Room, and Bedroom Furniture (Int. Cl. 20).
First use Dec. 18, 1967.

SN 288,239. Steelcase, Inc., Grand Rapids, Mich. Filed Jan. 5, 1968.

STEELCASE

Owner of Reg. No. 534,526.
For Office Furniture—Namely, Chairs, Desks, Sofas, Tables, Stands, Filing Cabinets, Miscellaneous Cabinets, Hat Racks, Filing Trays, Credenzas and Bookcases (Int. Cl. 20).
First use on or about Nov. 27, 1967.

SN 307,206. Henkel-Harris Co., Inc., Winchester, Va. Filed Sept. 12, 1968.

VIRGINIA GALLERIES Jamestown Colony COLLECTION Furniture by HENKEL HARRIS Winchester, Virginia

Applicant disclaims the words "Collection" and "Furniture by Henkel-Harris, Winchester, Virginia." Owner of Reg. No. 744,493.
For Living Room Furniture, Dining Room Furniture, Bed Room Furniture, and Occasional Tables (Int. Cl. 20).
First use May 6, 1968.

Class 33 — Glassware

SN 299,088. Anchor Hocking Glass Corporation, Lancaster, Ohio. Filed May 27, 1968.

MOD 32

For Table Glassware—Namely, Tumblers, Goblets, Dessert Dishes, Drinking Glasses, and Similar Articles (Int. Cl. 21).
First use on or about Jan. 4, 1968.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 289,914. Rangaire Corporation, Cleburne, Tex. Filed Jan. 30, 1968.

Chambers

For Hot and Cold Water Dispenser Unit Which Both Heats and Cools Water for Providing Either Cold or Hot Water for Making Beverages or Drinking (Int. Cl. 11).
First use May 1, 1965.

SN 295,111. Carrier Corporation, Syracuse, N.Y. Filed Apr. 8, 1968.



For Warm Air Furnaces, Cooling Coils and Gas and Electric Air Conditioners (Int. Cl. 11).
First use Mar. 19, 1968.

SN 300,722. Modern Maid, Inc., Chattanooga, Tenn. Filed June 18, 1968.

PERMA CLEAN

For Gas and Electric Ovens, and Gas and Electric Range Tops (Int. Cl. 11).
First use December 1967.

SN 311,285. Molecular Research, Inc., Palm Beach Gardens, Fla. Filed Nov. 4, 1968.

ALUMAIRE

For Air Conditioners (Int. Cl. 11).
First use Feb. 2, 1968.

SN 311,415. Standard Oil Company of California, San Francisco, Calif. Filed Nov. 5, 1968.



Owner of Reg. No. 819,092.
For Burners for Oil Fired Furnaces (Int. Cl. 11).
First use Apr. 7, 1965.

SN 311,669. E. Sam Dick Company Inc., Seattle, Wash. Filed Nov. 8, 1968.

AZEOVAIRE

For Liquid Petroleum Gas Vaporizers (Int. Cl. 11).
First use September 1966.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 294,185. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed Mar. 26, 1968.

NEOTHANE

Owner of Reg. Nos. 689,536, 696,923, and 749,131.
For Molded and Extruded Rubber Items Useful in the Installation of Railroad Rails—Namely, Metal Clad Bushings, Metal Clad End Posts, Base Piece Insulations, Head Piece Insulations and Washer Plates (Int. Cl. 17).
First use Feb. 17, 1968.

SN 295,332. Harmo Tire & Rubber Corporation, Detroit, Mich. Filed Apr. 10, 1968.

EL CRIADO

The term "El Criado" in Spanish means, "the servant."
For Vehicle Tires (Int. Cl. 12).
First use Oct. 9, 1967.

SN 309,127. Uniroyal, Inc., New York, N.Y. Filed Oct. 7, 1968.

ALLEY CAT

For Pneumatic Tires (Int. Cl. 12).
First use Sept. 4, 1968.

SN 313,828. McCreary Tire & Rubber Company, Indiana, Pa. Filed Dec. 6, 1968.

SCOT SUPER HAWK

For Vehicle Tires (Int. Cl. 12).
First use November 1968.

SN 314,245. Monsanto Company, St. Louis, Mo. Filed Dec. 11, 1968.

FLEX-MASTER

For Garden Hose (Int. Cl. 17).
First use Jan. 12, 1967.

SN 314,337. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed Dec. 12, 1968.

V-LASTIC

For Power Transmission Belts and Belting for Industrial, Automotive and Home Use (Int. Cl. 7).
First use Nov. 8, 1968.

SN 314,339. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed Dec. 12, 1968.

SCOR

For Power Transmission Belts and Belting for Industrial, Automotive and Home Use (Int. Cl. 7).
First use Oct. 31, 1968.

Class 36 — Musical Instruments and Supplies

SN 298,867. Kustom Electronics, Inc., Chanute, Kans., by change of name from Ross, Inc., Chanute, Kans. Filed May 22, 1968.

Kustom ▸100◂

Owner of Reg. No. 844,110.
For Musical Sound Equipment, Specifically Amplifiers and Loudspeaker Equipment for Electric Guitars (Int. Cl. 9).
First use on or about Feb. 15, 1968.

SN 298,868. Kustom Electronics, Inc., Chanute, Kans., by change of name from Ross, Inc., Chanute, Kans. Filed May 22, 1968.

Kustom ▸200◂

Owner of Reg. No. 844,110.
For Musical Sound Equipment, Specifically Amplifiers and Loudspeaker Equipment for Electric Guitars (Int. Cl. 9).
First use on or about Feb. 15, 1968.

SN 298,869. Kustom Electronics, Inc., Chanute, Kans., by change of name from Ross, Inc., Chanute, Kans. Filed May 22, 1968.

Kustom ▸400◂

Owner of Reg. No. 844,110.
For Musical Sound Equipment, Specifically Amplifiers and Loudspeaker Equipment for Electric Guitars (Int. Cl. 9).
First use on or about Feb. 15, 1968.

SN 305,502. Twentieth Century-Fox Film Corporation, New York, N.Y. Filed Aug. 19, 1968.

20th RECORDS

Applicant disclaims the word "Records" apart from the mark as shown.
For Phonograph Records and Prerecorded Magnetic Tapes (Int. Cl. 9).
First use in or before August 1963; 1958 as to "20th Fox."

SN 307,842. Infonics, Inc., Los Angeles, Calif. Filed Sept. 20, 1968.

INFONICS

For Tape Recorders (Int. Cl. 9).
First use Sept. 30, 1966.

SN 309,273. Mayfair Electronics Company, Chicago, Ill. Filed Oct. 9, 1968.

VOICE MAGIC

Applicant disclaims the word "Voice" apart from the mark as shown.
For Tape Recorders (Int. Cl. 9).
First use on or about Aug. 20, 1968.

SN 309,403. Sears, Roebuck and Co., Chicago, Ill. Filed Oct. 10, 1968.

THREAD-O-MATIC

For Take-Up Reel for Use in Tape Recorders (Int. Cl. 9).
First use on or about Nov. 8, 1965.

SN 309,977. MCA Inc., Universal City, Calif. Filed Oct. 18, 1968.

SHAMLEY

For Phonograph Records (Int. Cl. 9).
First use Aug. 8, 1968.

SN 311,400. Panton, Nakladatelstvi Svazu cs. Skladatelu, Prague, Czechoslovakia. Filed Nov. 5, 1968.

Owner of Czechoslovakian Reg. No. 157,569, dated July 13, 1967.
For Phonograph Records and Tape Recorders (Int. Cl. 9).

SN 318,420. Hammond Corporation, Deerfield, Ill. Filed Feb. 5, 1969.



Owner of Reg. No. 857,499.
For Upright, Spinet and Grand Pianos (Int. Cl. 15).
First use Aug. 23, 1968.

SN 318,565. Nashboro Record Co., Inc., Nashville, Tenn. Filed Feb. 6, 1969.

NASCO

Owner of Reg. No. 673,877.
For Phonograph Records (Int. Cl. 9).
First use June 1, 1957.

Class 37—Paper and Stationery

SN 278,331. Whitman Publishing Company, Racine, Wis. Filed Aug. 15, 1967.

WHITMAN

Owner of Reg. Nos. 697,472, 721,356, and others.
For Crayons; Coloring Pencils; Marking Pens; Scrap Books; Gift-Wrapping Paper; Chalk; Writing, Sketching Drawing, Painting, Coloring and Score Pads; Artist Boards; Creative Art Construction Paper; and Tallies (Int. Cl. 16).
First use 1953.

SN 284,993. Chase Bag Company, New York, N.Y. Filed Nov. 16, 1967.

ELASTOLAM

For Extrusion Coated Sheet Plastic Material, and/or Laminated Paper, Plastic, Aluminum Foil and Plastic in Roll Form for Use in Making Containers (Int. Cl. 16).
First use Sept. 1, 1966.

SN 290,670. Gunther Wagner Pelikan-Werke, Hannover, Germany. Filed Feb. 8, 1968.

MARKANA

Owner of German Reg. No. 475,306, dated May 2, 1935.
For Writing Implements—Namely, Fountain Pens, Ball Point Pens and Fiber Tip Pens (Int. Cl. 16).

SN 295,476. Topco Associates, Inc., Skokie, Ill. Filed Apr. 11, 1968.



Owner of Reg. Nos. 707,806, 843,075, and others.
For Notebook Filler Paper, Theme Books and Note Books, Typing Paper Pads, Steno Pads, Index Cards, Loose Leaf Binders, Envelopes, Paper Towels, Clear Plastic Wrap, Facial Tissue and Toilet Tissue (Int. Cl. 16).
First use Mar. 11, 1966.

SN 296,443. The Monarch Marking System Company, Miamisburg, Ohio. Filed Apr. 24, 1968.



For Blank Tags, Tickets and Labels Sold in Roll Form (Int. Cl. 16).
First use May 1962.

SN 298,318. Brown Company, New York, N.Y. Filed May 16, 1968.

PLANISHEEN

For Thermo Planished Clay Coated Paperboard for Use in Making Folding Box Blanks (Int. Cl. 16).
First use Sept. 1, 1967.

SN 298,431. Consolidated Packaging Corporation, Chicago, Ill. Filed May 17, 1968.

ULTRA-COR

For Corrugated Sheets (Int. Cl. 16).
First use Feb. 8, 1968.

SN 299,240. The Lynn Pacific Corporation, d.b.a. Pacific Paper Products, Union City, Calif. Filed Apr. 25, 1968.



For Poly-Wrapped Fillers, Theme Books, Notebooks, Steno Books, Writing Tablets, Pencil Tablets, Airmail Tablets, Linen Tablets, Letter-Legal Tablets, Pads, Art Tablets, Construction Paper and Typing Tablets (Int. Cl. 16).
First use Apr. 1, 1965.

Class 38—Prints and Publications

SN 278,336. Whitman Publishing Company, Racine, Wis. Filed Aug. 15, 1967.

WHITMAN

Owner of Reg. Nos. 697,472, 721,356, and others.
For Books, Prints, and Publications—Namely, Coin and Stamp Catalogues, Books, Albums; Coin Reference Series Books; Coin Folders; Stamp Album Filler Sheets; Stamps of Both the Philatelic and Non-Philatelic Type; Juvenile Books; Creative Drawing Books; Painting and Coloring Books; Paintless Paint Books; Activity Books; Art Creative and Art Instruction Books; Play Books; and Game Books (Int. Cl. 16).
First use 1953.

SN 288,841. Midwood Industries, Inc., Long Island City, N.Y. Filed Jan. 15, 1968.

DATA-SLIDE

For Slide Charts Containing Information as to the Characteristics of Welding Fittings and Flanges (Int. Cl. 16).
First use Nov. 17, 1967.

SN 289,502. Grocers Publishing Co., Inc., New York, N.Y. Filed Jan. 24, 1968.

SNACK FOODS MERCHANDISER

For Trade Newspaper (Int. Cl. 16).
First use Jan. 15, 1964.

SN 311,190. The Villager, Inc., Philadelphia, Pa. Filed Nov. 1, 1968.

THE VILLAGER

Owner of Reg. Nos. 702,965, 841,021, and others.
For Newspaper (Int. Cl. 16).
First use September 1968.

SN 313,765. Scientific Communications, Inc., Chicago, Ill. Filed Dec. 2, 1968.

DENTAL HIGHLIGHTS

For Newspaper Published Periodically (Int. Cl. 16).
First use on or about Sept. 4, 1968.

SN 317,424. National Periodical Publications, Inc., New York, N.Y. Filed Jan. 24, 1969.

SECRET SIX

For Comic Magazines (Int. Cl. 16).
First use Feb. 1, 1968.

SN 317,912. Hertz System, Inc., New York, N.Y. Filed Jan. 30, 1969.



Owner of Reg. Nos. 569,760, 841,039, and others.
For Publications—Namely, House Magazines and Bulletins, Travel Books, and Informational Brochures on Cars and Car Leasing (Int. Cl. 16).
First use at least as early as the fall of 1966; 1924 as to the mark "Hertz."

SN 317,913. Hertz System, Inc., New York, N.Y. Filed Jan. 30, 1969.

HERTZ

Owner of Reg. Nos. 569,760, 841,039, and others.
For Publications—Namely, House Magazines and Bulletins, Travel Books, and Informational Brochures on Cars and Car Leasing (Int. Cl. 16).
First use at least as early as Sept. 25, 1959; 1924 on related goods.

Class 39—Clothing

SN 288,744. Maidenform, Inc., New York, N.Y. Filed Jan. 15, 1968.

FLORADORABLE

For Foundation Garments and Lingerie (Int. Cl. 25).
First use Dec. 8, 1967.

SN 289,102. La Industrial de Punto C.A., Caracas, Venezuela. Filed Jan. 18, 1968.



For Children's Wear—Namely, Pants, Pantalets, Undershirts, T-Shirts, Socks, Swaddling Bands, Suits, Overalls, Trousers, Ensembles, Swimwear and Beachwear (Int. Cl. 25).
First use at least as early as Apr. 12, 1962; in commerce at least as early as July 1967.

SN 289,382. Breezy Point Actionwear, Inc., New York, N.Y. Filed Jan. 23, 1968.

Breezy Point

For Men's, Boys', Women's, and Girls' Jackets (Int. Cl. 25).
First use Dec. 1, 1967.

SN 289,401. Henri-Lloyd Limited, Little Hulton, Worsley, near Manchester, England. Filed Jan. 23, 1968.



The lining on the drawing does not represent color.
For Weather-Proof Protective Trousers, Jackets, Shorts, Suits, Caps, and Hoods for Yachting, Fishing, Shooting and Sports (Int. Cl. 25).
First use Oct. 14, 1963.

SN 290,432. Stuart C. Nelson, Los Angeles, Calif. Filed Feb. 5, 1968.



STUART C. NELSON
CALIFORNIA

Applicant disclaims the word "California" apart from the mark as shown.
For Men's and Women's Wearing Apparel—Namely, Slacks, Jackets, Sport Jackets, Sweaters, Sport Shirts, Nylon Jackets, Dresses, Skirts, Blouses, Capris, and Swimwear (Int. Cl. 25).
First use Aug. 3, 1967.

SN 291,240. Adolfo Inc., New York, N.Y. Filed Feb. 16, 1968.

ADOLFO

For Ladies' and Men's Hats, Scarves, Ladies' Coats, Suits, Sweaters, Dresses, Trousers and Blouses, and Men's Ties (Int. Cl. 25).
First use Apr. 30, 1962.

SN 291,475. Allied Millinery Company, Inc., New York, N.Y. Filed Feb. 20, 1968.

Christopher John

The name "Christopher John" is fanciful and does not identify a particular living individual.
For Ladies' Hats (Int. Cl. 25).
First use Feb. 1, 1968.

SN 291,826. Barringer Knitting Mills Incorporated, Philadelphia, Pa. Filed Feb. 26, 1968.

Kenwyn

For Ladies' and Women's Sweaters (Int. Cl. 25).
First use Aug. 12, 1958.

SN 295,066. John Weitz Designs, Inc., New York, N.Y. Filed Apr. 5, 1968.

PLANECOAT

For Ladies' and Men's Coats (Int. Cl. 25).
First use in or before March 1968.

SN 304,917. Henry H. Greene, New York, N.Y. Filed Aug. 12, 1968.

DELLA

For House Caps Worn by Females (Int. Cl. 25).
First use on or about Nov. 20, 1966.

SN 306,540. Matsam Corp., New Bedford, Mass. Filed Sept. 4, 1968.

DAN MATTHEWS

The mark "Dan Matthews" is fictitious and does not identify a particular living individual.
For Men's and Boys' Clothing—Namely, Shirts and Hosiery (Int. Cl. 25).
First use July 1968.

SN 310,438. Benson Shoe Company, Lynn, Mass. Filed Oct. 24, 1968.

EVENING STAR

For Women's Shoes (Int. Cl. 25).
First use at least as early as about 1961.

SN 311,907. Monroe Manufacturing Co., Monroe, La. Filed Nov. 12, 1968.

CHAPARRAL

For Men's Slacks (Int. Cl. 25).
First use Feb. 16, 1968.

SN 315,862. Vanity Fair Mills, Inc., Wyomissing, Reading, Pa. Filed Jan. 6, 1969.

CLING THING

For Foundation Garments—Namely, Girdles, Pantie Girdles, and Brassieres (Int. Cl. 25).
First use Dec. 4, 1968.

Class 40—Fancy Goods, Furnishings, and Notions

SN 246,487. Scru-Fix Limited, Birmingham, Warwick, England. Filed May 24, 1966.

Scru-fix

Priority claimed under Sec. 44(d) on British Reg. No. B890,639, dated Feb. 12, 1966.
For Buttons (Int. Cl. 26).

SN 265,470. Fashion Tress, Inc., Miami Beach, Fla. Filed Feb. 27, 1967.

IF YOUR OWN HAIR WON'T FASHION TRESS WILL

For Ladies Wigs and Hair Pieces (Int. Cl. 26).
First use on or about Jan. 1, 1967.

SN 288,583. American Beauty Wig Corporation, d.b.a. American Beauty Wigs, Miami, Fla. Filed Jan. 11, 1968.

AMERICAN BEAUTY WIGS

Applicant disclaims the word "Wigs" apart from the mark as shown.
For Women's Wigs and Other Hair Pieces (Int. Cl. 26).
First use Feb. 16, 1966.

SN 300,540. Mickie Steiger, Inc., Chicago, Ill. Filed June 17, 1968.

GLAMOUR LASH

Applicant disclaims the word "Lash" apart from the mark as shown.
For False Eyelashes (Int. Cl. 26).
First use at least as early as May 1967.

SN 307,729. Cereal Soaps Company, Inc., East Northport, N.Y. Filed Sept. 19, 1968.

DERBAC

Owner of Reg. Nos. 199,534, 507,672, and others.
For Combs (Int. Cl. 21).
First use during June 1923.

SN 308,108. Helene Curtis Industries, Inc., Chicago, Ill. Filed Sept. 24, 1968.

MODAC 53

For Hair Pieces—Namely, Wigs (Int. Cl. 26).
First use on or about Sept. 5, 1968.

SN 308,865. The Boye Needle Company, Chicago, Ill. Filed Oct. 4, 1968.

BIG BOYE

Owner of Reg. Nos. 505,254, 557,804, and others.
For Large Size Knitting Needles (Int. Cl. 26).
First use during or before September 1967.

SN 309,257. Holiday Magic, San Rafael, Calif. Filed Oct. 9, 1968.

MAGI-LASH

For False Eyelashes (Int. Cl. 26).
First use Oct. 20, 1967.

SN 311,783. The Glemby Company, Inc., New York, N.Y. Filed Nov. 12, 1968.

Chevolon

For Synthetic Fibre Sold Only as a Component Part of Wigs, Wiglets, Falls, Braids, Chignons and Other Hair Pieces (Int. Cl. 26).
First use July 17, 1968.

Class 41—Canes, Parasols, and Umbrellas

SN 306,520. Telesco Brophey Limited, Montreal, Quebec, Canada. Filed Sept. 3, 1968.

tele-mini

For Umbrellas (Int. Cl. 18).
First use Jan. 25, 1968; in commerce Jan. 25, 1968.

SN 306,522. Telesco Brophey Limited, Montreal, Quebec, Canada. Filed Sept. 3, 1968.

STAR

Owner of Canadian Reg. No. 150,461, dated Apr. 28, 1967.
For Umbrellas (Int. Cl. 18).

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 251,967. J. P. Stevens & Co., Inc., New York, N.Y. Filed Aug. 8, 1966.

WOOL PRESS

For Woolen and Woolen Blended Fabrics Which Have Been Treated by a Permanent Crease Process (Int. Cl. 24).
First use at least as early as July 18, 1966.

SN 281,915. Panhandler, Inc., Memphis, Tenn. Filed Oct. 5, 1967.

TWIN TERRY

The right to the exclusive use of the word "Terry" is disclaimed apart from the mark as shown.
For Hand-Protecting Pads, Gloves, Mitts, and Pot Holders (Int. Cl. 21).
First use Oct. 2, 1967.

SN 285,247. Mohasco Industries, Inc., d.b.a. The Firth Carpet Company, Amsterdam, N.Y. Filed Nov. 20, 1967.

WEATHERALL

For Carpets (Int. Cl. 27).
First use July 5, 1966.

SN 288,663. Alamac Knitting Mills, Inc., New York, N.Y. Filed Jan. 12, 1968.

STOCKINIT

For Knitted Fabric of a Jersey Stitch and Having a Bulky Appearance for Men's, Women's and Children's Garments (Int. Cl. 24).
First use December 1967.

SN 291,420. Phillips-Van Heusen Corporation, New York, N.Y. Filed Feb. 19, 1968.

VANTRON

Owner of Reg. No. 545,995.
For Fabrics in the Piece Made of Polyester and Cotton, and Mixtures Thereof (Int. Cl. 24).
First use Jan. 15, 1968.

SN 294,979. Strachman Associates, Inc., New York, N.Y. Filed Apr. 4, 1968.

Persiatex

For Woven Fabrics Imitating Fur (Int. Cl. 24).
First use Jan. 28, 1968.

SN 298,260. J. P. Stevens & Co., Inc., New York, N.Y. Filed May 15, 1968.

HOUSE & HEARTH

For Textile Carpets and Rugs (Int. Cl. 27).
First use Apr. 19, 1968.

SN 299,788. Plymouth Rubber Company, Inc., Canton, Mass. Filed June 5, 1968.

SUPPL-SOFT

For Piece Goods of Fabric-Backed Plastic Material for Use in the Manufacture of Articles of Wearing Apparel (Int. Cl. 24).
First use May 6, 1968.

SN 300,706. Howard Uniforms Inc., New York, N.Y. Filed June 18, 1968.

JAGUAR JERSEY

The word "Jersey" is disclaimed apart from the mark as shown.
For Textile Fabrics in the Piece, Composed of Polyester and Nylon (Int. Cl. 24).
First use June 4, 1968.

SN 306,631. Bontec Corp., Stamford, Conn. Filed Sept. 5, 1968.

POWERSPAN

For Nylon-Rubber Stretch Fabric (Int. Cl. 24).
First use Aug. 23, 1968.

SN 306,700. United Merchants and Manufacturers, Inc., New York, N.Y. Filed Sept. 5, 1968.

COHAMETRIC COLLECTION

Applicant disclaims exclusive right to use of the word "Collection" except in association with and as part of the mark as shown.
For Natural, Synthetic, and/or Man-Made Fiber Fabrics Adapted To Be Made Up Into Draperies, Upholstery, Slipcovers, Luggage and Ladies' Apparel—Namely, Dresses (Int. Cl. 24).
First use on or about June 18, 1968.

SN 306,755. Collins & Aikman Corporation, New York, N.Y. Filed Sept. 6, 1968.

MITYMESH

For Tricot Scrim Fabric (Int. Cl. 24).
First use Jan. 13, 1968.

SN 307,104. The General Tire & Rubber Company, Akron, Ohio. Filed Sept. 11, 1968.

FASTBAC

For Sponge Rubber Carpet Cushion Backing (Int. Cl. 27).
First use April 1968.

SN 307,201. W. T. Eckersley, d.b.a. W. T. Eckersley Co., Hollywood, Calif. Filed Sept. 12, 1968.

SNOOTY HOOTY

For Pillow Covers (Int. Cl. 24).
First use Aug. 26, 1968.

SN 307,390. Nujute Incorporated, New York, N.Y. Filed Sept. 16, 1968.

HUETEX

For Treated Textile Decorative Fabrics in the Piece, Suitable for Use in Making Wearing Apparel and Draperies, Upholstery, Wall Coverings and Other Home Furnishing Articles (Int. Cl. 24).
First use Aug. 26, 1968.

SN 313,161. Coin Sales Corporation, New York, N.Y. Filed Nov. 27, 1968.

EUROC*O*I*NED

Owner of Reg. Nos. 771,953 and 867,617.
For Textile Fabrics, Including Laminated Textile Fabrics for Use in Wearing Apparel, Furnishings, Upholstery and Industrial Products (Int. Cl. 24).
First use at least by Nov. 19, 1968.

Class 43—Thread and Yarn

SN 306,007. Fred Witaker Company, Philadelphia, Pa. Filed Aug. 26, 1968.

KURLTEX

For Spun Yarns and Continuous Filament Yarns, To Which a Curl Has Been Imparted (Int. Cl. 23).
First use in or about August 1966.

SN 307,665. Oregon Worsted Company, Portland, Oreg. Filed Sept. 18, 1968.

POPPY

For Knitting Worsted Virgin Wool Yarn (Int. Cl. 23).
First use at least as early as Dec. 22, 1961.

SN 307,689. Toyo Rayon Kabushiki Kaisha, d.b.a. Toyo Rayon Co., Ltd., Chuo-ku, Tokyo-to, Japan. Filed Sept. 18, 1968.

LUMIYARN

For Thread and Yarn (Int. Cl. 23).
First use December 1960; in commerce August 1966.

Class 44—Dental, Medical, and Surgical Appliances

SN 266,912. Oxygen Equipment and Service Company, Chicago, Ill. Filed Mar. 16, 1967.

VACUMITTENT

For Intermittent Vacuum Regulators for Use in Hospitals (Int. Cl. 10).
First use 1960.

SN 282,803. William C. Jones, d.b.a. Jones Medical Instrument Company, Chicago, Ill. Filed Oct. 18, 1967.

PULMONAIRE

Owner of Reg. No. 738,721.
For Spirometers for Use in Diagnosing Pulmonary Disorders (Int. Cl. 10).
First use on or before Feb. 11, 1964.

SN 298,590. The Garrett Corporation, Los Angeles, Calif. Filed May 20, 1968.

GARRETT

Owner of Reg. Nos. 650,447, 850,591, and others.
For Blood Pressure Measuring Systems and Components, Plethysmographs, Electro-Oculograph Measuring Systems (Int. Cl. 10).
First use Oct. 16, 1964.

SN 310,253. Solar Laboratories, Inc., Inglewood, Calif. Filed Oct. 22, 1968.

SOLARCAST

For Bandage Material Adapted To Be Applied to a Human or Animal Member and Hardens To Form a Cast, Splint or Supporting Structure (Int. Cl. 5).
First use Sept. 27, 1968.

SN 311,673. Espe Fabrik Pharmaceutischer Praparate GmbH, Seefeld, Upper Bavaria, Germany. Filed Nov. 8, 1968.

SCUTAN

Priority claimed under Sec. 44(d) on German application filed June 20, 1968; Reg. No. 851,387, dated Nov. 6, 1968.
For Materials for Dental Uses—Namely, Plastics in Paste or Powder Form for the Construction of Crowns, Bridges, Dentures or Other Dental Prostheses, Tooth-Filling and Insulating Agents, Materials for Making Impressions, and Tooth Enamel (Int. Cl. 5).
First use Aug. 27, 1968; in commerce Sept. 12, 1968.

SN 316,108. Medical Supply Company, Rockford, Ill. Filed Jan. 8, 1969.

TAMMI

For First-Aid Training Manikins (Int. Cl. 10).
First use Nov. 13, 1968.

SN 316,377. Fairfield Surgical & Medical Electronics, Inc., Stamford, Conn. Filed Jan. 13, 1969.

FAIRFIELD

For Medical Equipment—Namely, Apparatus for Positioning Surgical and Medical Instruments, Doppler Measuring Instruments and Cystoscopes (Int. Cl. 10).
First use Dec. 4, 1968.

SN 316,378. Fairfield Surgical & Medical Electronics, Inc., Stamford, Conn. Filed Jan. 13, 1969.

FETONE

For Medical Equipment—Namely, Doppler Measuring Instruments (Int. Cl. 10).
First use Dec. 4, 1968.

SN 316,380. Fairfield Surgical & Medical Electronics, Inc., Stamford, Conn. Filed Jan. 13, 1969.

CONTOUR-OPTIC

For Medical Equipment—Namely, Cystocopes (Int. Cl. 10).
First use Dec. 4, 1968.

Class 45—Soft Drinks and Carbonated Waters

SN 284,309. Ju-C-Orange of America, Lebanon, Pa. Filed Nov. 7, 1967.

Pennsylvania Dutch

For Birch Beer and Syrup for Making the Same (Int. Cl. 32).
First use May 1, 1942.

Class 46—Foods and Ingredients of Foods

SN 266,349. National Institutional Food Distributor Associates, Inc., Smyrna, Ga. Filed Mar. 9, 1967.

Chef-Pac

The drawing is lined for the colors red and blue, but no claim is made to color. The representation of the chef's head shown in the drawing does not represent any particular living individual. The map representation of the United States is disclaimed apart from the mark as shown. Owner of Reg. No. 710,022.
For Starch Based Puddings and Pie Fillings—Namely, Starch Based Chocolate, Vanilla, Coconut, Butterscotch, Banana, Lemon, and Orange Pie Fillings; Ice Cream, Syrups for Food Flavoring and Foot Topping Purposes, Spices, Relishes, Pickles, Soup Bases, Soups, Worcestershire Sauces, Salad Dressings, Mayonnaise, Broth, Bread Crumb Mix, Meatless Gravy and Gravy Bases, Cheese, Food Coloring; Seasonings—Namely, Chili Powder, Ginger, Paprika and Pickling Spice, Cocoa, Coconut Flakes, Tea, Mustard, Catsup, Olives, Meat Tenderizers, Jelly, Fresh and Frozen Canned Fruits, Fresh Frozen and Canned Vegetables (Int. Cls. 2, 29, 30, and 31).
First use on or about Sept. 22, 1961.

SN 269,649. Dr. Hillers A.G. Nähr- und Heilmittelwerk, d.b.a. Dr. Hillers AG, Solingen, Germany. Filed Apr. 20, 1967.

DR. HILLERS

For Peppermint Candy, Hard Candy, and Eating Chocolate With Filling (Int. Cl. 30).
First use Sept. 25, 1925; in commerce Dec. 21, 1927.

SN 278,315. National Biscuit Company, New York, N.Y. Filed Aug. 15, 1967.

SHAKES A LA MODE

For Instant Milk Shake Mix With Freeze Dried Ice Cream (Int. Cl. 30).
First use May 15, 1967.

SN 281,452. Chip Steak Company, Oakland, Calif. Filed Sept. 29, 1967.

Ranch Hand

Owner of Reg. No. 596,863.
For Frozen Meat Products—Namely, Chip Steaks, Beef Steaks, Veal Steaks, Pork Steaks, Sirloin Steaks, Barbequed Beef, Breaded Beef, Veal and Pork, Hamburger Patties, Pizza Patteies and Sausage; and Frozen Fully Cooked Meat Products—Namely, Sliced Beef and Gravy, Barbequed Ribs, Beef Patties, Veal Patties, and Taco Patties (Int. Cl. 29).
First use Aug. 31, 1967.

SN 283,264. Monfort Packing Company, Greeley, Colo. Filed Oct. 24, 1967.



For Meat and Meat Products—Namely, Beef, Lamb, and Mutton, Which Are in a Fresh, Canned and Frozen Form (Int. Cl. 29).
First use Apr. 15, 1967.

SN 284,728. Pure Milk Company, d.b.a. Barber Pure Milk Company, Birmingham, Ala. Filed Nov. 13, 1967.



The words "Milk" and "Ice Cream" are disclaimed apart from the mark as shown.
For Fresh Milk, Chocolate Milk, Powdered Buttermilk, Fresh Buttermilk, Fresh Skim Milk, Fresh "Pro-Teen" Milk (2 Percent Butterfat), Chocolate Drink (With a Fresh Milk Base), Milk Shake Mix (With a Fresh Milk Base), Whipping Cream, Fresh "Half and Half" (Half Cream and Half Whole Milk), Ice Milk Mix (With a Fresh Milk Base), Ice Cream, Sherbets, and Ice Cream Sandwiches (Int. Cls. 29 and 30).
First use in or before 1936.

SN 290,660. Sloan's Specialties Inc., d.b.a. The Knot Shop, Drexel Hill, Pa. Filed Feb. 8, 1968.

KNOTS

For Pastries (Int. Cl. 30).
First use Nov. 4, 1967.

SN 293,293. Packet Research Corporation, Andover, Mass. Filed Mar. 14, 1968.

MINEX

For Individual Service Packets of Food and Condiments, Specifically, Salt, Pepper, Sugar, Artificial Sugar Substitute, Artificial Salt Substitute and Table Syrups (Int. Cls. 1 and 30).
First use Mar. 10, 1962.

SN 296,332. Mark Morris Associates, Topeka, Kans., assignee of Mar-Ko Company, Topeka, Kans. Filed Apr. 23, 1968.

MSD

For Food for Animals—Namely, Canidae (Int. Cl. 31).
First use on or about Apr. 18, 1968.

SN 299,689. Miami Provision Company, Miami, Fla. Filed June 4, 1968.



For Fresh and Frozen Meat and Fresh and Frozen Dressed Poultry (Int. Cl. 29).
First use Nov. 24, 1966.

SN 300,559. Cher-Make Sausage Company, Manitowoc, Wis. Filed June 17, 1968.



For Sausage and Other Prepared Meat Products (Int. Cl. 29).
First use Dec. 21, 1964.

SN 302,122. Prince Macaroni Manufacturing Company, Lowell, Mass. Filed July 5, 1968.

TORRONCINI

For Macaroni (Int. Cl. 30).
First use Nov. 30, 1951.

SN 304,965. Rene Foods, Incorporated, Daytona Beach, Fla. Filed Aug. 12, 1968.

JUS'

For Vacuum Packed Fried Chicken (Int. Cl. 29).
First use Feb. 1, 1967.

SN 305,978. Popcorn Products, Inc., Chicago, Ill. Filed Aug. 26, 1968.

HI-N-LO

For Popcorn Popping Oil (Int. Cl. 29).
First use July 30, 1968.

SN 306,105. Nissin Shokuhin Kaisha Ltd., Takatsuki, Japan. Filed Aug. 28, 1968.



Owner of Japanese Reg. No. 733,880, dated Feb. 20, 1967.
For Processed Noodles and Rice Mixes for Making Cooked Noodles, Fried Rice and Curried Rice (Int. Cl. 30).

SN 306,147. Iceland Products, Inc., Camp Hill, Pa. Filed Aug. 28, 1968.

SAMBA

Owner of Reg. No. 712,940.
For Frozen Fish and Frozen Prepared Fish (Int. Cl. 29).
First use Apr. 24, 1964.

SN 306,424. The Blue Channel Corporation, Port Royal, S.C. Filed Sept. 3, 1968.

BLUE CHANNEL

For Seafood—Namely, Frozen Crab Cakes and Crab Roe Pate (Int. Cl. 29).
First use June 21, 1968.

SN 306,641. Carnation Company, Los Angeles, Calif. Filed Sept. 5, 1968.

TUNOVA

For Cat Food (Int. Cl. 31).
First use Aug. 23, 1968.

SN 306,642. Carnation Company, Los Angeles, Calif. Filed Sept. 5, 1968.

MARINER

For Cat Food (Int. Cl. 31).
First use Aug. 23, 1968.

SN 307,852. Musco Olive Products Co., Inc., d.b.a. Musco Olive Products, Inc., Orland, Calif. Filed Sept. 20, 1968.



For Packaged Olives (Int. Cl. 29).
First use on or about Aug. 23, 1968.

SN 308,091. Charms Company, Bloomfield, N.J. Filed Sept. 24, 1968.



The words "Butter Scotch" are disclaimed apart from the mark as shown.
For Candy—Namely, Butter Scotch (Int. Cl. 30).
First use May 15, 1948; 1907 as to "Kerr's."

SN 308,468. Rowntree and Company Limited, York, England. Filed Sept. 30, 1968.



Owner of British Reg. No. 918,674, dated Dec. 18, 1967.
For Cocoa and Candies (Int. Cl. 30).

SN 308,679. Continental Coffee Company, Chicago, Ill. Filed Oct. 2, 1968.

MELLO-LITE

For Non-Dairy Product for Whitening Coffee and Tea and for Use in Cooking (Int. Cl. 29).
First use on or about June 17, 1965.

SN 308,807. Persian Garden Foods, Inc., Escalon, Calif. Filed Oct. 3, 1968.

PERSIAN GARDEN

For Almonds (Int. Cl. 29).
First use Aug. 15, 1968.

SN 308,810. Refined Syrups & Sugars, Inc., Yonkers, N.Y. Filed Oct. 3, 1968.

AMBERDEX

For Sugar Blends and Syrups (Int. Cl. 30).
First use at least as early as Aug. 22, 1968.

SN 308,811. Refined Syrups & Sugars, Inc., Yonkers, N.Y. Filed Oct. 3, 1968.

INVERDEX

For Sugar Blends and Syrups (Int. Cl. 30).
First use at least as early as Aug. 28, 1968.

SN 308,856. Mark Morris Associates, Topeka, Kans. Filed Oct. 4, 1968.

ORPHALAC

For Dietary Animal Food for Dogs and Cats (Int. Cl. 31).
First use on or about May 16, 1968.

SN 309,078. The Panipius Company, Rye, N.Y. Filed Oct. 7, 1968.

PANI-GLAZE

For Icing Powder (Int. Cl. 30).
First use Aug. 1, 1968.

SN 309,467. National Biscuit Company, New York, N.Y. Filed Oct. 11, 1968.

DIN'R

For Wafer Crackers (Int. Cl. 30).
First use Sept. 5, 1968.

SN 310,540. Carnation Company, Los Angeles, Calif. Filed Oct. 25, 1968.

BODYBUILD

For Fortified Milk Powder (Int. Cl. 29).
First use June 2, 1968.

SN 311,439. General Mills, Inc., Minneapolis, Minn. Filed Nov. 6, 1968.

DEW SWEET

The word "Sweet" is disclaimed apart from the mark as shown.
For Dehydrated Onions (Int. Cl. 29).
First use on or prior to Oct. 4, 1967.

SN 311,441. General Mills, Inc., Minneapolis, Minn. Filed Nov. 6, 1968.

FUN PACK

The word "Pack" is disclaimed apart from the mark as shown.
For Ready To Eat Breakfast Cereal (Int. Cl. 30).
First use on or prior to Sept. 30, 1968.

SN 311,443. General Mills, Inc., Minneapolis, Minn. Filed Nov. 6, 1968.

CARAMEL CONES

The word "Caramel" is disclaimed apart from the mark as shown. Owner of Reg. No. 846,360.
For Cereal Derived Ready To Eat Snack (Int. Cl. 30).
First use on or prior to July 19, 1968.

SN 311,522. Rico Sales Corporation, Aliceville, Ala. Filed Nov. 6, 1968.

TOP-PRO

For Fish Feed (Int. Cl. 31).
First use July 6, 1968.

SN 315,976. Safeway Stores, Incorporated, Oakland, Calif. Filed Jan. 7, 1969.

ZIPPY

For Fresh Packed Pickles, Processed Pickles, Relishes and Peppers (Int. Cls. 29 and 30).
First use Nov. 11, 1954.

SN 316,391. Schleider Foods, Inc., Baltimore, Md. Filed Jan. 13, 1969.



For Frozen Kosher Foods—Namely, Meat Knishes (Int. Cl. 30).
First use Aug. 30, 1968.

SN 316,395. Schleider Foods, Inc., Baltimore, Md. Filed Jan. 13, 1969.

FAMILY TRADITION MAKES IT BETTER

For Frozen Kosher Foods—Namely, Stuffed Kishke, Potato Pudding, Potato Knishes, Meat Kreplach, Meat Knishes, and Stuffed Cabbage (Int. Cls. 29 and 30).
First use May 18, 1965.

SN 316,943. Ralston Purina Company, St. Louis, Mo. Filed Jan. 21, 1969.

EXTRA PRO

For Dog Food (Int. Cl. 31).
First use Jan. 7, 1969.

SN 316,944. Ralston Purina Company, St. Louis, Mo. Filed Jan. 21, 1969.

TOP CONDITION

For Dog Food (Int. Cl. 31).
First use Jan. 7, 1969.

SN 316,946. Saticoy Foods Corporation, Saticoy, Calif. Filed Jan. 21, 1969.

CAL-SUN

For Diced Sweet Red Peppers (Int. Cl. 29).
First use Jan. 3, 1969.

SN 317,186. Mayfair Packing Company, d.b.a. Mayfair Packing Co., San Jose, Calif. Filed Jan. 22, 1969.

VIZIPAK

Owner of Reg. No. 256,460.
For Dried Fruits (Int. Cl. 29).
First use January 1966.

SN 317,999. General Mills, Inc., Minneapolis, Minn. Filed Jan. 31, 1969.

HEALTH SPA

For Ready-To-Eat Breakfast Cereal (Int. Cl. 30).
First use on or prior to Nov. 4, 1968.

SN 318,001. General Mills, Inc., Minneapolis, Minn. Filed Jan. 31, 1969.

MIGHTY-BITES

Owner of Reg. No. 844,677.
For Breakfast Cereal (Int. Cl. 30).
First use on or prior to Sept. 5, 1968.

Class 47 — Wines

SN 309,786. Ralph Pingitore, d.b.a. National Products Distributors, Portland, Oreg. Filed Oct. 16, 1968.

GOURMET

For Cooking Sherry, Cooking Red Wine and Cooking White Wine (Int. Cl. 33).
First use 1957.

Class 49 — Distilled Alcoholic Liquors

SN 291,996. Mr. Boston Distiller Inc., Boston, Mass. Filed Feb. 27, 1968.

YAVNOV

For Vodka (Int. Cl. 33).
First use Jan. 24, 1968.

SN 292,031. The Viking Distillery, Inc., d.b.a. The Viking Distillery, Albany, Ga. Filed Feb. 27, 1968.

STEAK HOUSE

For Whiskey (Int. Cl. 33).
First use December 1967.

SN 307,448. F & A Distributing Company, Bayonne, N.J. Filed Sept. 16, 1968.

CAPTAIN MIKE

For Rum (Int. Cl. 33).
First use 1962.

SN 307,509. Schenley Distillers, Inc., d.b.a. The Dant Distillery Company, New York, N.Y. Filed Sept. 16, 1968.

J. W. DANT

Owner of Reg. Nos. 320,981, 758,535, and others.
For Whiskey, Gin, Vodka, Alcoholic Cordials, and Prepared Alcoholic Cocktails (Int. Cl. 33).
First use in or about the year 1836 on whiskey.

SN 307,822. Austin, Nichols & Co., Incorporated, Maspeth, N.Y. Filed Sept. 20, 1968.



Owner of Reg. No. 513,549.
For Whiskey (Int. Cl. 33).
First use May 29, 1942.

Class 50 — Merchandise Not Otherwise Classified

SN 270,787. International Rubber Corporation, Boston, Mass. Filed May 5, 1967.

CARPETOP

For Mats and Matting Having a Pile Surface for Use on Floors and the Like (Int. Cl. 27).
First use at least as early as Feb. 15, 1967.

SN 301,523. General Crafts Corporation, Baltimore, Md. Filed June 27, 1968.

Flower Craft

For Kits for Making Artificial Flowers Including Paper, Glue, Wire, Florists' Base Material, Patterns and Decorative Embellishments (Int. Cl. 26).
First use June 14, 1968.

SN 304,769. R. E. Dietz Company, Syracuse, N.Y. Filed Aug. 9, 1968.

DIETZ

Owner of Reg. Nos. 98,643, 733,519, and others.
For Traffic Barricades and Traffic Cones (Int. Cl. 6).
First use Jan. 3, 1961.

SN 315,549. General Steel Industries, Inc., d.b.a. Flex-O-Lite Division, St. Louis, Mo. Filed Jan. 2, 1969.

FLEX-O-LITE

Owner of Reg. Nos. 563,749 and 708,308.
For Rolls of Reflective Pressure Sensitive Tape (Int. Cl. 17).
First use Oct. 16, 1967.

Class 51 — Cosmetics and Toilet Preparations

SN 220,168. Poul Nielsen, d.b.a. Stanwell Briar Pipes, Kyringe, near Ringsted, Denmark. Filed June 1, 1965.

STANWELL

Priority claimed under Sec. 44(d) on Danish application filed Mar. 19, 1965; Reg. No. 2,372, dated Sept. 11, 1965.
Owner of U.S. Reg. Nos. 616,401 and 748,336.
For Non-Medicated Bath Oils, Ethereal Oils for Use as a Cosmetic, Beauty Masks, Preparations for Cleaning the Mouth and Teeth, Cold Cream, Toilet Cream and Toilet Powder, Eau de Cologne, Lip Pomade, Lip Sticks, Nail Polishing Preparations, Perfume, After-Shave Lotion, Deodorant Skin Preparations, Rouge, Hair Tonic, Skin Cleaning Preparations (Int. Cls. 3 and 5).

SN 284,037. Rohto Pharmaceutical Co., Ltd., Ikuno-ku, Osaka, Japan. Filed Nov. 2, 1967.

ROHTO

Owner of Japanese Reg. No. 546,776, dated Jan. 14, 1960.
For Eye Lotion (Int. Cl. 3).

SN 286,945. Laboratoire Garnier, Societe Anonyme, Paris, France. Filed Dec. 14, 1967.

GARNIER cristal color

No claim is made to the word "Color." The lining on the drawing is not to indicate color. Owner of French Reg. No. 733,465, dated May 9, 1967.
For Hair Dye Shampoo (Int. Cl. 3).

SN 295,224. The Fuller Brush Company, East Hartford, Conn. Filed Apr. 9, 1968.

IF

For Spray Cologne (Int. Cl. 3).
First use March 1968.

SN 302,777. Textron Inc., Providence, R.I. Filed July 15, 1968.

BITTER LEMON

No claim is made to the word "Lemon" apart from the mark.
For Men's Cologne and After Shave Lotion (Int. Cl. 3).
First use Oct. 28, 1967.

SN 305,943. La Maur, Inc., d.b.a. The House of Style, Minneapolis, Minn. Filed Aug. 26, 1968.

TEXTRA

For Hair Conditioning and Setting Lotion (Int. Cl. 3).
First use July 3, 1968.

SN 307,084. Bristol-Myers Company, New York, N.Y. Filed Sept. 11, 1968.

QUENCH

For Lotion for Hands and Face (Int. Cl. 3).
First use May 28, 1968.

SN 309,380. Helene Curtis Industries, Inc., Chicago, Ill. Filed Oct. 10, 1968.

Q.O.N.

For Body Deodorant (Int. Cl. 5).
First use on or about Sept. 29, 1968.

SN 309,394. Nice-Pak Products, Inc., Mount Vernon, N.Y. Filed Oct. 10, 1968.

FOLDED FINGERBOWL

For Napkin Size Paper Cloth Saturated With Scented Skin Cleanser (Int. Cl. 3).
First use Feb. 26, 1958.
Subj. to Intf. with SN 318,499.

SN 309,848. Julio Lupus de Elorza, d.b.a. Marques de Elorza, New York, N.Y. Filed Oct. 17, 1968.

TAJ MAHAL

For Perfumes, Colognes and Toilet Waters (Int. Cl. 3).
First use Dec. 11, 1951.

SN 310,121. The Nestle-Lemur Company, New York, N.Y. Filed Oct. 21, 1968.

NESCARE

For Hair Conditioner (Int. Cl. 3).
First use Oct. 7, 1968.

SN 310,281. Dorothy Gray, Ltd., New York, N.Y. Filed Oct. 23, 1968.

ALGENE

For Cream, Emulsion, and Lotion for the Skin (Int. Cl. 3).
First use Aug. 9, 1968.

SN 310,875. Faberge, Inc., New York, N.Y. Filed Oct. 30, 1968.

X-PO

For Skin Lotion (Int. Cl. 3).
First use Oct. 12, 1968.

SN 310,878. Faberge, Inc., New York, N.Y. Filed Oct. 30, 1968.

EUPHORIA

For Bath Cream (Int. Cl. 3).
First use Oct. 12, 1968.

SN 311,789. Mercantile Stores Company, Inc., New York, N.Y. Filed Nov. 12, 1968.

MERVILLE

For Hair Spray, Creme Rinse, Bath Oil and Milk Bath (Int. Cl. 3).
First use Mar. 27, 1967.

SN 313,652. Ellen Kaye Laboratories, Inc., St. Paul, Minn. Filed Dec. 5, 1968.

TEXTUREX

For Hair Conditioning Ingredient Added and Constituting a Part of a Hair Setting Lotion for Improving the Body and Inhibiting Moisture Absorption (Int. Cl. 3).
First use Aug. 1, 1968.

SN 317,185. The Gillette Company, Boston, Mass. Filed Jan. 22, 1969.

STATIC

For After Shave Lotion (Int. Cl. 3).
First use Nov. 22, 1968.

SN 318,494. Alberto-Culver Company, Melrose Park, Ill. Filed Feb. 6, 1969.

SHAKE A LEG

For Skin Lotions (Int. Cl. 3).
First use July 11, 1968.

Class 52 — Detergents and Soaps

SN 282,599. Misco Industries, Inc., d.b.a. Misco-Care Co., Wichita, Kans. Filed Oct. 16, 1967.

MISCO-CARE

For Cleaning Preparations for Household, Industrial and Institutional Uses (Int. Cls. 1 and 3).
First use on or about July 25, 1967.

SN 286,075. American Grease Stick Company, Muskegon, Mich. Filed Dec. 4, 1967.

CHOKE-EASE

Owner of Reg. Nos. 533,714, 820,603, and others.
For Automatic Choke and Carburetor Cleaner Which Are Not Gasoline Additives (Int. Cl. 3).
First use at least as early as Oct. 9, 1967.

SN 303,468. Wynn Oil Company, Azusa, Calif. Filed July 23, 1968.

WYNN-SHIELD

Owner of Reg. No. 744,306.
For Automobile Window Cleaner (Int. Cl. 3).
First use June 26, 1968.

SN 303,669. General Foods Corporation, White Plains, N.Y. Filed July 26, 1968.

SOFT 'N BRIGHT

For Laundry Detergent (Int. Cl. 3).
First use June 20, 1968.

SN 303,670. General Foods Corporation, White Plains, N.Y. Filed July 26, 1968.

PROVE

For Laundry Detergent (Int. Cl. 3).
First use June 21, 1968.

SN 303,671. General Foods Corporation, White Plains, N.Y. Filed July 26, 1968.

BRIGHT 'N SOFT

For Laundry Detergent (Int. Cl. 3).
First use June 20, 1968.

SN 303,913. Heatbath Corporation, Indian Orchard, Mass. Filed July 30, 1968.

SOKLEEN

Owner of Reg. No. 782,614.
For Chemicals for Preparing Alkaline Soak Baths for Cleaning Ferrous and Non-Ferrous Metals (Int. Cl. 1).
First use July 10, 1968.

SN 303,914. Heatbath Corporation, Indian Orchard, Mass. Filed July 30, 1968.

DEOXIDE

Owner of Reg. No. 789,239.
For Cleaning Chemicals—Namely, Chemicals for Preparing Solutions for Deoxidizing, Desmutting and Removing Heat Scale From Aluminum and Aluminum Alloys (Int. Cl. 1).
First use June 17, 1968.

SN 304,724. Wig Outlet International, Inc., Dallas, Tex. Filed Aug. 8, 1968.

Wig Outlet INTERNATIONAL

The word "International" is disclaimed apart from the mark as shown.
For Wig Cleaner Concentrate (Int. Cl. 3).
First use July 22, 1968.

SN 305,562. Obrig Chemical Corp., Sarasota, Fla. Filed Aug. 20, 1968.

OBRITE

For Contact Lens and Eyeglass Cleaner (Int. Cl. 3).
First use Nov. 25, 1966.

SN 307,083. Bristol-Myers Company, New York, N.Y. Filed Sept. 11, 1968.

QUENCH

For Toilet Soap and Hair Shampoo (Int. Cl. 3).
First use May 28, 1968.

SN 317,079. Medical-Pharmaceutical Develpments Limited, Portslade, Brighton, England. Filed Jan. 21, 1969.

DECON 75

For Preparation for Cleaning Laboratory Equipment, Glass and the Like and for Decontaminating Radio-Active Materials and Articles (Int. Cl. 3).
First use April 1966; in commerce April 1966.

SN 318,499. Alberto-Culver Company, Melrose Park, Ill. Filed Feb. 6, 1969.

FOLDED FINGER BOWL

For Hand Cleanser (Int. Cl. 3).
First use June 17, 1968.
Subj. to Intf. with SN 309,394.

SERVICE MARKS

Class 100 — Miscellaneous

SN 260,086. Shakey's, Inc., Burlingame, Calif. Filed Dec. 5, 1966.

SMORGA-PIZZA

For Restaurant Services Featuring Pizzas (Int. Cl. 42).
First use Feb. 1, 1966.

SN 279,671. McDonald's Corporation, Chicago, Ill. Filed Sept. 5, 1967.

RONALD MCDONALD

The mark "Ronald McDonald" is not intended to identify any particular living individual.
For Drive-In Restaurant Services (Int. Cl. 42).
First use on or about Sept. 17, 1966.

SN 292,461. Alphanumeric, Incorporated, Lake Success, N.Y. Filed Mar. 5, 1968.

ALPHANUMERIC

For Photocomposition Services (Int. Cl. 42).
First use December 1967.

SN 292,556. Compendium Publishers International Corp., New York, N.Y. Filed Mar. 6, 1968.

SEARCH-DATA

Applicant disclaims the expression "Systemized Excerpts, Abstracts & Reviews of Chemical Headlines" apart from the mark as shown. Owner of Reg. No. 842,888.
For Providing Chemical Industrial Information From Computer Selected Data Responsive to Specified Inquiries (Int. Cl. 42).
First use January 1968.

SN 296,328. The Korman Corporation, Philadelphia, Pa. Filed Apr. 23, 1968.

LIVING IDEAS

For Home Construction Consultation Services, Real Estate Survey Services and Architectural Services (Int. Cl. 42).
First use Sept. 1, 1967.

SN 299,700. Self-Serv Food Corporation, Inc., Campbell, Calif. Filed June 4, 1968.



For Restaurant Services (Int. Cl. 42).
First use Feb. 1, 1956.

SN 301,059. The Georgetown Corporation, Georgetown, Colo. Filed June 21, 1968.

AMERICA'S NUMBER ONE FUN AND FOOD PLACE

For Restaurant Services (Int. Cl. 42).
First use on or about Jan. 1, 1967.

SN 304,162. Terry Corporation, Milwaukee, Wis. Filed Aug. 1, 1968.



For Restaurant and Carry-Out Food Service (Int. Cl. 42).
First use Nov. 7, 1966.

SN 304,164. Terry Corporation, Milwaukee, Wis. Filed Aug. 1, 1968.

CAP'N QUICK'S

For Restaurant and Carry-Out Food Service (Int. Cl. 42).
First use Nov. 7, 1966.

SN 305,030. Arkansas Power & Light Company, Little Rock, Ark. Filed Aug. 13, 1968.



Applicant disclaims exclusive right to use of "Arkansas" apart from the mark as shown.
For Providing Residential and Commercial Electricity (Int. Cl. 42).
First use Mar. 1, 1968.

SN 306,239. The Gorton Corporation, Gloucester, Mass. Filed Aug. 29, 1968.

JOHN BULL

For Restaurant Services, Especially of the Take-Out Type (Int. Cl. 42).
First use July 9, 1968.

SN 306,760. The Dinner Table, Inc., Salt Lake City, Utah. Filed Sept. 6, 1968.

THE DINNER TABLE

For Advising, Consulting and Design Services in Connection With the Establishment and Operation of Restaurants (Int. Cl. 42).
First use Aug. 17, 1968.

SN 315,950. The Niblick, Inc., Greensboro, N.C. Filed Jan. 6, 1969.

NIBLICK

For Restaurant Services (Int. Cl. 42).
First use during the month of October 1968.

SN 318,513. United States Franchise Corporation, San Francisco, Calif. Filed Feb. 6, 1969.



For Restaurant Services (Int. Cl. 42).
First use Apr. 29, 1968.

SN 318,514. United States Franchise Corporation, San Francisco, Calif. Filed Feb. 6, 1969.

YUMMERS

For Restaurant Services (Int. Cl. 42).
First use Apr. 29, 1968.

Class 101 — Advertising and Business

SN 176,990. American Industries, Inc., Atlanta, Ga. Filed Sept. 16, 1963.



Applicant disclaims the representation of the flag apart from the mark as shown.
For Import and Export Services Particularly Importation of Jute Burlap Backing, Jute Backing, Cotton Duck, Kraft Paper and Jute Cuttings; Exportation of Cotton, Cotton Combers and Other Textile Products (Int. Cl. 35).
First use May 30, 1962.

SN 246,612, Sieber & McIntyre, Inc., Chicago, Ill. Filed May 25, 1966.

MEDITAPE

For Promoting the Sale of Goods to the Medical Profession Through the Distribution of Sound Playback Devices and Periodically Distributed Recordings Carrying Messages From the Manufacturers of the Goods and/or Information of Value to the Profession (Int. Cl. 35).
First use Feb. 28, 1966.

SN 247,864. Active Sign Corporation of America, Inc., Chicago, Ill. Filed June 13, 1966.



For Silk Screen Process Printing for Others (Int. Cl. 35).
First use May 16, 1966.

SN 270,761. Harley V. Dee, Hollywood, Fla. Filed May 5, 1967.



For Promoting Newspaper Advertising by Giving Cash Awards to Those Who Submit Evidence in the Form of Labels, Stamps and the Like That They Have Patronized the Firms Who Advertise in the Aforementioned Newspapers (Int. Cl. 35).
First use July 15, 1962.

SN 278,296. Melandrea, Inc., New York, N.Y. Filed June 7, 1967.



For Communicating Ideas and Information Pertaining to the Goods and Services of Others Through the Design and Preparation of Pictures and the Projection Thereof (Int. Cl. 35).
First use Mar. 1, 1966.

SN 275,668. Hockenberger & Co., Inc., Toledo, Ohio. Filed July 10, 1967.

HOUSE OF GOLF

For Retail Supply House for Golf Equipment (Int. Cl. 35).
First use Mar. 15, 1960.

SN 282,381. McGraw-Hill, Inc., New York, N.Y. Filed Oct. 12, 1967.

HOT-LINE

For Promoting the Sale of Goods of Others by Means of Telephone Answering Service (Int. Cl. 35).
First use Oct. 2, 1967.

SN 288,272. Board of Commissioners of the Port of New Orleans, New Orleans, La. Filed Jan. 8, 1968.

THE RIVERGATE

For Operating a Trade Exhibition Center for the Display of the Goods of Others (Int. Cl. 35).
First use Apr. 25, 1966.

SN 288,278. Board of Commissioners of the Port of New Orleans, New Orleans, La. Filed Jan. 8, 1968.



For Operating a Trade Exhibition Center for the Display of the Goods of Others (Int. Cl. 35).
First use Apr. 25, 1966.

SN 290,476. Daymude Albersmeyer Butler Inc., Fort Wayne, Ind. Filed Feb. 7, 1968.



For Real Estate Agency Services (Int. Cl. 35).
First use Oct. 1, 1968.

SN 290,478. Easton Associates, Inc., San Francisco, Calif. Filed Feb. 7, 1968.

GOLD VALUE-TAPE

For Promoting the Sale of Goods and Services of Others by Obtaining Sponsors for Discount and Premium Coupons, Providing Grocery Stores With Cash-Register Tape Printed With Such Coupons, and Conducting Advertising Promotions for Such Stores Relating to Such Coupons (Int. Cl. 35).
First use May 11, 1967.
Subj. to Intf. with SN 274,568.

SN 290,938. Artistic Dance Fashions, Inc., Washington, D.C. Filed Feb. 13, 1968.

ARTISTIC

For Mail Order Services for Supplying to Dance Schools Costumes, Accessories and Furnishings for Costumes (Int. Cl. 35).
First use April 1956.

SN 293,357. Chilton Company, Philadelphia, Pa. Filed Mar. 15, 1968.

CRS

For Research Service in the Field of Marketing (Int. Cl. 35).
First use 1960.

SN 293,363. Datafilm Corporation, Brookfield, Wis. Filed Mar. 15, 1968.

dataFILM

For Computer and Related Data-Processing Services—Namely, Processing and Supplying Information for Others (Int. Cl. 35).
First use Jan. 4, 1968.

SN 295,163. Pharmstat, Inc., Los Angeles, Calif. Filed Apr. 8, 1968.

PHARMSTAT

For Providing Specialized Temporary Personnel in the Pharmaceutical Field (Int. Cl. 35).
First use Jan. 28, 1968.

SN 295,454. National Car Rental System, Inc., Minneapolis, Minn. Filed Apr. 11, 1968.



The drawing is lined for the color green but no claim is made as to color. Applicant disclaims the representation of a map of the United States in the design.
For Designing and Furnishing to Franchisees Business Promotional Materials for Use in Inducing the Leasing of Motor Vehicles (Int. Cl. 35).
First use Mar. 4, 1968.

SN 297,621. White Villa Grocers, Inc., Dayton, Ohio. Filed May 7, 1968.

P.D.Q.

For Retail Food Supermarket Services (Int. Cl. 35).
First use January 1959.

SN 297,670. General Printing & Lithograph Co., d.b.a. Western Lithograph Company, Los Angeles, Calif. Filed May 8, 1968.

ECONORUN

For Printing Service (Int. Cl. 35).
First use 1968.

SN 299,113. Eugene Dietzgen Co., Chicago, Ill. Filed May 27, 1968.

NCCS

For Computer Programming Services (Int. Cl. 35).
First use Jan. 1, 1963.

SN 299,114. Eugene Dietzgen Co., Chicago, Ill. Filed May 27, 1968.

ACTION

For Computer Programming Services (Int. Cl. 35).
First use Mar. 1, 1966.

SN 299,711. Keith Welsh, d.b.a. Keith Welsh Realtor, Dayton, Ohio. Filed June 4, 1968.



For Real Estate Brokerage Services (Int. Cl. 35).
First use Sept. 1, 1964.

SN 301,707. Challenger, Gray & Christmas, Inc., Chicago, Ill. Filed July 1, 1968.

EXECUTIVE RETRIEVAL

For Process of Helping and Showing Discharged Executives How To Find a New Position (Int. Cl. 35).
First use Jan. 23, 1967.

SN 302,447. Retirement Jobs, Inc., San Jose, Calif. Filed July 10, 1968.



For Securing Jobs for Retired Citizens (Int. Cl. 35).
First use Dec. 4, 1967.

SN 304,552. Marsh Supermarkets, Inc., Yorktown, Ind. Filed Aug. 7, 1968.

MARSH

For Retail Food Store Services (Int. Cl. 35).
First use December 1931.

SN 305,280. The National Stereotape Music Guild, Ltd., Chicago, Ill. Filed Aug. 16, 1968.

THE NATIONAL STEREOTAPE MUSIC GUILD

The words "Stereotape Music Guild" are disclaimed apart from the mark as shown and without waiving any common law rights in these words.
For Providing Recorded Tapes Through Mail Orders (Int. Cl. 35).
First use on or about Mar. 27, 1968.

SN 306,038. Sales Force, Inc., Knoxville, Tenn. Filed Aug. 27, 1968.

SALES FORCE, INC.

For Manufacturers' Representative Services in the Field of Outdoor Sports Equipment and Supplies (Int. Cl. 35).
First use Oct. 20, 1965.

SN 308,954. Fotomat Corporation, La Jolla, Calif. Filed Oct. 7, 1968.

PHOTO ISLAND

Applicant disclaims any exclusive rights to the word "Photo" apart from the mark as shown.
For Retail Drive-In Photographic Supply Store Services (Int. Cl. 35).
First use June 13, 1968.

SN 309,931. Giant Food, Inc., Landover, Md. Filed Oct. 18, 1968.

THE QUALITY FOOD PEOPLE

Applicant claims exclusive rights to use of the words "Quality Food" as part of its mark, but not otherwise, without waiving common law rights to any feature thereof.
For Retail Grocery and Supermarket Services (Int. Cl. 35).
First use at least as early as Apr. 15, 1964.

SN 310,270. Morris M. Wolff, d.b.a. Wolfie's Tape Town, South Bend, Ind. Filed Oct. 22, 1968.

WOLFIE'S TAPE TOWN

For Retail Store Services Specializing in Tape Playing Equipment (Int. Cl. 35).
First use October 1966.
Subj. to Intf. with SN 311,016.

SN 310,617. Keolyn Plastics, Inc., Chicago, Ill. Filed Oct. 28, 1968.

SCiiM

For Printing Initials, Indicia and Decoration on Plastic Products Such as Key Tags to the Specification of the Purchaser (Int. Cl. 35).
First use Oct. 17, 1968.

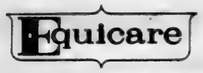
Class 102 — Insurance and Financial

SN 287,824. Merchants Shipper Credit Corp., Bellevue, Wash. Filed Dec. 29, 1967.



For Extension of Credit in Connection With Freight Charges (Int. Cl. 36).
First use Oct. 20, 1967.

SN 291,892. Old Equity Life Insurance Company, Evanston, Ill. Filed Feb. 26, 1968.



For Underwriting of Insurance (Int. Cl. 36).
First use Nov. 3, 1965.

SN 312,387. The Heritage Fund, Inc., New York, N.Y. Filed Nov. 18, 1968.



The mark consists of a stylized letter "H" design.
For Financial Services—Namely, Mutual Fund Investment (Int. Cl. 36).
First use January 1968.

Class 103 — Construction and Repair

SN 251,549. Liberty Petroleum Co., Inc., Mount Vernon, Ill. Filed Aug. 2, 1966.



For Automobile Filling Station Services (Int. Cl. 37).
First use in or before January 1966.

SN 284,644. L. B. Foster Company, Pittsburgh, Pa. Filed Nov. 13, 1967.



The metal products shown in the drawing are disclaimed apart from the figure of the rabbit carrying them.
For Rental Services Involving the Rental to Third Parties of Steel Sheet Piling, Pipe Piling, H-Bearing Piles, Lightweight Piling, and Pile Hammers and Extractors; Pipe Processing Services Rendered in Connection With the Sale of Pipe and Pipe Valves and Fittings and Including Pipe Cutting, Bending, Threading, Coating, and Wrapping; and Track-Removal Services Including the Taking Up and Removal of Rails, Ties, and Ballast of Industrial Sidings and In-Plant Trackage (Int. Cl. 37).
First use June 1955.

SN 292,542. Avco Corporation, Cincinnati, Ohio. Filed Mar. 6, 1968.



Owner of Reg. Nos. 831,412, 831,773, and 833,101.
For Field Engineering Services Comprising Construction, Repair and Overhauling of Electronic, Electro-Mechanical and Hydraulic Systems, Assemblies and Parts (Int. Cl. 37).
First use Sept. 21, 1967.

SN 299,982. Instant Mobile Powerwash Service, Inc., Little Rock, Ark., assignee of Guardian Power Cleaning Corporation, Little Rock, Ark. Filed June 7, 1968.



For Mobile Power Wash Service—Namely, Power Washing of All Types of Vehicles, Building Exteriors, Mobile Homes and Other Equipment and Apparatus Lending Itself to Power Washing (Int. Cl. 37).
First use May 9, 1968.

SN 299,983. Instant Mobile Powerwash Service, Inc., Little Rock, Ark., assignee of Guardian Power Cleaning Corporation, Little Rock, Ark. Filed June 7, 1968.

IMPS

For Mobile Power Wash Service—Namely, Power Washing of All Types of Vehicles, Building Exteriors, Mobile Homes and Other Equipment and Apparatus Lending Itself to Power Washing (Int. Cl. 37).
First use May 9, 1968.

SN 300,947. MSL Industries, Inc., Chicago, Ill. Filed June 20, 1968.

MICRO GEAR

Applicant claims the exclusive right to the Use of the term "Gear" as part of its trademark, but not otherwise. Owner of Reg. No. 812,602.
For Manufacturing Gears to the Specification of Others (Int. Cl. 37).
First use in or about April 1955.

SN 307,926. David Diperstein, d.b.a. United States Casting Repair Co., Glenside, Pa. Filed Sept. 23, 1968.

SEAL-LOCK

Owner of Reg. No. 671,035.
For Repairing Metal Castings of Others by Use of Metal Locking Slugs (Int. Cl. 37).
First use May 1, 1957.

Class 104 — Communication

SN 306,018. Management Television Systems, Inc., New York, N.Y. Filed Aug. 19, 1968.

MTS 360

For Communication Services—Namely, an Electronic Closed-Circuit Television Projection and Presentation System Comprising Either Single or Multiple Television Screens and Other Media Such as Enlargements, Films, Slides and Other Electronic Display Devices, With Remote Control Capability (Int. Cl. 38).
First use Mar. 15, 1967.

SN 306,019. Management Television Systems, Inc., New York, N.Y. Filed Aug. 19, 1968.



For Communication Services—Namely, an Electronic Closed-Circuit Television Projection and Presentation System Comprising Either Single or Multiple Television Screens and Other Media Such as Enlargements, Films, Slides and Other Electronic Display Devices, With Remote Control Capability (Int. Cl. 38).
First use Oct. 15, 1967.

SN 312,952. Columbia Broadcasting System, Inc., New York, N.Y. Filed Nov. 25, 1968.

CBS RADIO

Applicant disclaims the word "Radio" separate and apart from the mark as shown. Owner of Reg. Nos. 720,010, 833,812, and others.
For Radio Broadcasting Services (Int. Cl. 38).
First use on or about Sept. 26, 1968.

Class 105 — Transportation and Storage

SN 271,018. Air Dispatch, Inc., New York, N.Y. Filed May 9, 1967.

airdispatch

For Air Freight Forwarding (Int. Cl. 39).
First use Mar. 27, 1967.

SN 278,444. Pan American World Airways, Inc., New York, N.Y. Filed Aug. 17, 1967.

PAN AM

Owner of Reg. No. 203,691.
For Leasing of Aircraft (Int. Cl. 39).
First use Dec. 1, 1966.

SN 292,361. Direct Air Freight Corporation, Windsor Locks, Conn. Filed Mar. 4, 1968.

DIRECT

For Air Freight Forwarding and Motor Transport (Int. Cl. 39).
First use on or before Sept. 1, 1967.

SN 297,228. The Valcar Corporation, Los Angeles, Calif. Filed May 2, 1968.

VALCAR

For Rental of Automobiles and Trucks (Int. Cl. 39).
First use Apr. 15, 1964.

SN 298,709. Consolidated Forwarding Company, Inc., St. Louis, Mo. Filed May 21, 1968.

SOLID SERVICE SYSTEM

For Transportation of Freight as Common Motor Carrier (Int. Cl. 39).
First use Mar. 4, 1968.

SN 304,597. Educational Travel Company, Spokane, Wash. Filed Aug. 7, 1968.

TRAVEL WITH A PURPOSE

For Travel Services—Namely, the Making of Arrangements for Transportation, Lodging, Meals, and Meetings for Group Student Tours (Int. Cl. 39).
First use on or about Aug. 1, 1963.

Class 106 — Material Treatment

SN 283,832. United Merchants and Manufacturers, Inc., New York, N.Y. Filed Oct. 31, 1967.

FORT SPOTLESS

Owner of Reg. No. 586,785.
For Finishing of Textiles Whereby Applicant Has Pre-Treated Its Customers' Cottons and Synthetic Fabrics To Render Them Stain and Soil Resistant (Int. Cl. 40).
First use on or about Oct. 9, 1967.

SN 299,571. Metal Wire Recovery Corporation, Danville, Pa. Filed June 3, 1968.



For Reclaiming Scrap Metal and Chemical Products From Insulated Wire Scrap and Related Scrap (Int. Cl. 40).
First use May 24, 1966.

SN 309,424. GAF Corporation, New York, N.Y. Filed Oct. 11, 1968.

ANSCOCHROME

Owner of Reg. Nos. 41,689, 726,290, and Others.
For Processing of Exposed Sensitised Photographic Materials (Int. Cl. 40).
First use Nov. 26, 1954.

Class 107 — Education and Entertainment

SN 316,394. Reverend Harry Schlitt, Springfield, Mo. Filed Jan. 13, 1969.

I'LL NEVER TELL

For Entertainment Services—Namely, a Radio Program Discussing the Problems of Modern Youth (Int. Cl. 41).
First use Nov. 3, 1967.

SN 316,503. Pace, Inc., Silver Spring, Md. Filed Jan. 14, 1969.

PACE

For Educational Services—Namely, Conducting Classes of Instruction and Training in the Operation and Maintenance of Shop Equipment (Int. Cl. 41).
First use 1964.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

869,854. TUF-FIL. Industrial Brush Company. SN 273,287. Pub. 4-16-68. Filed 6-7-67.

869,855. P AND DESIGN. Perstorp Aktiebolag. SN 275,461. Pub. 3-11-69. Filed 7-6-67.

869,856. KIMPUFF. Kimberly-Clark Corporation. SN 283,011. Pub. 1-14-69. Filed 10-20-67.

869,857. GAYLORD. Topco Associates, Inc., assignee of The Kingston Company. SN 283,012. Pub. 3-11-69. Filed 10-20-67.

869,858. XYLODE. Rexall Drug and Chemical Company, d.b.a. Fiberfil. SN 286,775. Pub. 3-11-69. Filed 12-12-67.

869,859. NYLENE. Nylene Corporation, by change of name from Palmetto Plastics, Inc. SN 291,893. Pub. 12-31-68. Filed 2-26-68.

869,860. NUCAP. J. M. Huber Corporation. SN 296,159. Pub. 3-11-69. Filed 4-22-68.

869,861. HUMEX. Hules Mexicanos S.A. SN 298,447. Pub. 3-11-69. Filed 5-17-68.

869,862. NULEAF. Hastings & Co., Inc. SN 299,673. Pub. 3-11-69. Filed 6-4-68.

869,863. BINNEY & SMITH—THE "CRAYOLA" MAKERS AND DESIGN. Binney & Smith Inc. MULTIPLE CLASS (Classes 1, 5, 16, and 37). SN 308,940. Pub. 3-11-69. Filed 10-7-68.

Class 2 — Receptades

869,864. WORLD BAZAAR. Atlantic Company. SN 278,568. Pub. 3-11-69. Filed 8-18-67.

869,865. MISCELLANEOUS DESIGN. California Exposition and Fair Corporation. SN 281,438. Pub. 3-11-69. Filed 9-29-67.

869,866. AJAX. Ajax Plastic Products, Inc. MULTIPLE CLASS (Classes 2, 13, and 31). SN 285,692. Pub. 3-11-69. Filed 11-28-67.

869,867. SEALRIGHT. Phillips Petroleum Company, assignee of Sealright Co., Inc. SN 286,725. Pub. 3-11-69. Filed 12-11-67.

869,868. BESTPAK. Bestpak, Inc. SN 290,156. Pub. 3-11-69. Filed 2-2-68.

869,869. PIGGIE POKES. Phillips Petroleum Company. SN 304,383. Pub. 3-11-69. Filed 8-5-68.

869,870. VANGUARD. Aladdin Industries, Incorporated. SN 304,747. Pub. 12-10-68. Filed 8-9-68.

869,871. DELSEY. Kimberly-Clark Corporation. SN 307,213. Pub. 3-11-69. Filed 9-12-68.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

869,872. FLIGHT ONE. Excelsior Associates, Inc. SN 273,053. Pub. 3-11-69. Filed 6-5-67.

869,873. GAF AND DESIGN. GAF Corporation, by change of name from General Aniline & Film Corporation. SN 281,286. Pub. 3-11-69. Filed 9-27-67.

869,874. MISCELLANEOUS DESIGN. California Exposition and Fair Corporation. SN 281,439. Pub. 3-11-69. Filed 9-29-67.

869,875. TORINO THE CREATIVE CREED AND DESIGN. W. Mimeles Company, Inc., d.b.a. Torino Manufacturing Co. MULTIPLE CLASS (Classes 3 and 39). SN 294,990. Pub. 3-11-69. Filed 4-5-68.

869,876. VICTORY. Carter-Wallace, Inc., assignee of Lambert-Kay, Inc. SN 296,431. Pub. 1-14-69. Filed 4-24-68.

869,877. VICTORY. Carter-Wallace, Inc., assignee of Lambert-Kay, Inc. SN 296,432. Pub. 1-14-69. Filed 4-24-68.

869,878. ESTANCIA. Estancia Incorporated. SN 299,011. Pub. 3-11-69. Filed 5-24-68.

Class 4 — Abrasives and Polishing Materials

869,879. MEL-O-TONE. Churchill Chemical Company. SN 290,469. Pub. 2-18-69. Filed 2-7-68.

869,880. PATH MARK. Supermarkets General Corporation, by change of name and assignment from Louket Markets, Inc. SN 295,447. Pub. 3-11-69. Filed 4-11-68.

869,881. CC. Conwood Corporation. MULTIPLE CLASS (Classes 4, 6, and 46). SN 305,173. Pub. 3-11-69. Filed 8-15-68.

Class 5 — Adhesives

869,868. (See Class 1 for this trademark).

869,882. VISTRON. Vistron Corporation, assignee of The Standard Oil Company. SN 257,802. Pub. 7-2-68. Filed 11-2-66.

Class 6 — Chemicals and Chemical Compositions

869,881. (See Class 4 for this trademark.)

869,883. MINTOL. The C. B. Dolge Company. SN 227,660. Pub. 3-11-69. Filed 9-13-65.

869,884. SI-O-SIL. Stauffer Chemical Company. SN 253,354. Pub. 3-11-69. Filed 8-26-66.

869,885. DOXIFOR. International Dioxide. SN 275,053. Pub. 3-11-69. Filed 6-29-67.

869,886. PERFACLEAR. Perfax Corporation, d.b.a. Perry-Sherwood Corp. SN 281,616. Pub. 3-11-69. Filed 10-2-67.

869,887. PERFATONE. Perfax Corporation, d.b.a. Perry-Sherwood Corp. SN 281,617. Pub. 3-11-69. Filed 10-2-67.

869,888. DEEP-SET. United Oil Manufacturing Company. SN 282,016. Pub. 3-11-69. Filed 10-6-67.

869,889. ACCORD. Wyandotte Chemicals Corporation. SN 282,227. Pub. 3-11-69. Filed 10-10-67.

869,890. POWERAID. Wyandotte Chemicals Corporation. SN 282,308. Pub. 3-11-69. Filed 10-11-67.

869,891. ESROLKO. Givaudan Corporation, assignee of Esrolko A.G. SN 283,593. Pub. 3-11-69. Filed 8-11-67.

869,892. DEHYDOPLAST. Dehydag Deutsche Hydrierwerke G.m.b.H. SN 283,777. Pub. 3-11-69. Filed 10-31-67.

869,893. NI-LATE. W. R. Grace & Co. SN 286,522. Pub. 3-11-69. Filed 12-8-67.

869,894. ESRADEX. Foseco International Limited. SN 288,505. Pub. 3-11-69. Filed 1-10-68.

869,895. ERLEN A-91. Universal Oil Products Company. SN 288,560. Pub. 3-11-69. Filed 1-10-68.

869,896. ERLEN B-86. Universal Oil Products Company. SN 288,564. Pub. 3-11-69. Filed 1-10-68.

869,897. ERLEN L-71. Universal Oil Products Company. SN 288,565. Pub. 3-11-69. Filed 1-10-68.

869,898. GLOBOL. Globus-Werke Fritz Schulz Jun. SN 292,095. Pub. 3-11-69. Filed 2-28-68.

869,899. VACUMETAL. Merck & Co., Inc. SN. 292,116. Pub. 3-11-69. Filed 2-28-68.

869,900. PETROCOTE. Milchem Incorporated. SN 293,545. Pub. 3-11-69. Filed 3-18-68.

869,901. CLEAR DAY. Avon Products, Inc. SN 301,602. Pub. 3-11-69. Filed 6-28-68.

Class 7 — Cordage

869,902. MISCELLANEOUS DESIGN. California Exposition and Fair Corporation. MULTIPLE CLASS (Classes 7, 21, and 32). SN 281,448. Pub. 3-11-69. Filed 9-29-67.

869,903. FENCE-WEAVE. Patrician Products, Inc. SN 308,429. Pub. 3-11-69. Filed 9-30-68.

Class 8 — Smokers' Artides, Not Including Tobacco Products

869,904. TIP-ACTION. McDonald Products Corporation. MULTIPLE CLASS (Classes 8 and 32). SN 278,978. Pub. 3-11-69. Filed 8-24-67.

869,905. MISCELLANEOUS DESIGN. California Exposition and Fair Corporation. SN 281,440. Pub. 3-11-69. Filed 9-29-67.

869,906. BIG BILL. Highlands Briar Inc. SN 310,625. Pub. 3-11-69. Filed 11-20-68.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

869,907. AGUILA. Cartuchos Deportivos de Mexico, S.A. SN 277,343. Pub. 3-11-69. Filed 8-2-67.

869,908. AGUILA SE & DESIGN. Cartuchos Deportivos de Mexico, S.A. SN 277,344. Pub. 3-11-69. Filed 8-2-67.

869,909. COCK BRAND ETC. AND DESIGN. Tang Kuen Hung, d.b.a. Yick Loong Fireworks Company and Kwan Yick Fireworks Company. SN 287,431. Pub. 3-11-69. Filed 12-22-67.

869,910. DUCK BRAND ETC. AND DESIGN. Tang Kuen Hung, d.b.a. Yick Loong Fireworks Company. SN 287,432. Pub. 3-11-69. Filed 12-22-67.

Class 12 — Construction Materials

869,911. SYLCA-STONE. I.M.C. Incorporated, d.b.a. Imco Plastics Division. MULTIPLE CLASS (Classes 12 and 32). SN 259,732. Pub. 3-11-69. Filed 11-30-66.

869,912. VISTA-PANEL. Georgia-Pacific Corporation. SN 288,949. Pub. 3-11-69. Filed 1-16-68.

869,913. FALCON-FOAM. Vertex Distributing Inc. SN 299,892. Pub. 3-11-69. Filed 6-6-68.

869,914. MORTARPLAST. W. R. Grace & Co. SN 301,746. Pub. 3-11-69. Filed 7-1-68.

869,915. WE'RE NOT OUT OF THE WOODS YET! William L. Marshall, Ltd. SN 306,616. Pub. 3-11-69. Filed 9-5-68.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

869,866. (See Class 2 for this trademark).

869,916. BRAND. Brand Hydraulics Co. SN 258,892. Pub. 3-11-69. Filed 11-17-66.

869,917. ROYAL. Royal Industries, Inc. SN 269,458. Pub. 12-3-68. Filed 4-18-67.

869,918. T THARAUD DESIGNS AND DESIGN. Justin Tharaud & Son, Inc. MULTIPLE CLASS (Classes 13, 23, 30, 33, and 42). SN 270,822. Pub. 3-11-69. Filed 5-5-67.

869,919. INTERNATIONAL-GIFTIME. International-Giftime, Inc. SN 278,968. Pub. 3-11-69. Filed 8-24-67.

869,920. AJUSTO-GAP. Eaton Yale & Towne Inc. SN 288,200. Pub. 3-11-69. Filed 1-5-68.

869,921. POWER-SEAL AND DESIGN. Breeze Corporations, Inc. SN 293,222. Pub. 12-3-68. Filed 3-14-68.

869,922. TIGER. The Harris Calorific Company. SN 301,425. Pub. 1-21-69. Filed 6-26-68.

869,923. PERMASEAL. Rockwell Manufacturing Company. SN 301,767. Pub. 1-7-69. Filed 7-1-68.

869,924. VC-3. Oakland Corporation. SN 304,379. Pub. 3-11-69. Filed 8-5-68.

869,925. SWING AWAY AND DESIGN. Stile-Craft Manufacturers, Inc. SN 308,931. Pub. 1-21-69. Filed 10-4-68.

869,926. XP (DESIGN). Russell, Burdsall & Ward Bolt and Nut Company. SN 312,164. Pub. 3-11-69. Filed 11-14-68.

Class 14 — Metals and Metal Castings and Forgings

869,927. B AND DESIGN. Birdsboro Corporation. SN 297,756. Pub. 3-11-69. Filed 5-9-68.

Class 15 — Oils and Greases

869,928. SNAP-ON. Snap-On Tools Corporation. SN 288,987. Pub. 3-11-69. Filed 11-22-67.

869,929. ARISTA. A. I. Root Co. of Texas, Inc., d.b.a. A. I. Root Company, and The Root Candle Co. SN 307,261. Pub. 3-11-69. Filed 9-13-68.

Class 16 — Protective and Decorative Coatings

869,863. (See Class 1 for this trademark).

869,930. DESIGNER. Associated Hardware Supply Company. SN 297,837. Pub. 3-11-69. Filed 5-10-68.

869,931. GLAMORGLAZE. Koppers Company, Inc. SN 305,940. Pub. 3-11-69. Filed 8-26-68.

869,932. C_3 AND DESIGN. Cam-Chem Co. SN 307,191. Pub. 3-11-69. Filed 9-12-68.

Class 17 — Tobacco Products

869,933. PAUL REVERE ETC. AND DESIGN. Rembrandt Tobacco Corporation (Overseas) Limited. SN 277,070. Pub. 3-11-69. Filed 7-28-67.

Class 18 — Medicines and Pharmaceutical Preparations

869,934. CHOCOLAX. Del Laboratories, Inc., assignee of American Home Products Corporation. SN 231,800. Pub. 2-7-67. Filed 10-29-65.

869,935. BRUCO. Brunswig Drug Company. SN 271,514. Pub. 3-11-69. Filed 5-15-67.

869,936. SPORTABS AND DESIGN. Sportabs International Inc., assignee of Sportabs, Inc. SN 282,634. Pub. 3-11-69. Filed 10-16-67.

869,937. ERBAPLAST. Carlo Erba S.p.A. SN 283,240. Pub. 3-11-69. Filed 10-24-67.

869,938. TOLIRATE. Dermik Laboratories, Inc. SN 292,473. Pub. 3-11-69. Filed 3-5-68.

869,939. KESSO-BAMATE. Foremost-McKesson, Inc., d.b.a. McKesson Laboratories. SN 293,494. Pub. 3-11-69. Filed 3-18-68.

869,940. DALACIN C. The Upjohn Company. SN 295,199. Pub. 3-11-69. Filed 4-8-68.

869,941. VITA-BIRD. Hartz Mountain Products Corp. SN 295,229. Pub. 3-11-69. Filed 4-9-68.

869,942. CAPRON. The Vitarine Co. Inc. SN 295,689. Pub. 3-11-69. Filed 4-15-68.

869,943. THROAT-COTE. Merck & Co., Inc. SN 295,753. Pub. 3-11-69. Filed 4-16-68.

869,944. TRACKDOWN. Merck & Co., Inc. SN 296,034. Pub. 3-11-69. Filed 4-19-68.

869,945. STRONSCAN. Abbott Laboratories. SN 296,626. Pub. 3-11-69. Filed 4-26-68.

869,946. HETAPEN. Bristol-Myers Company. SN 297,962. Pub. 3-11-69. Filed 5-13-68.

869,947. TADPEN. Bristol-Myers Company. SN 297,968. Pub. 3-11-69. Filed 5-13-68.

869,948. CHEWFERS. The J. B. Williams Company, Inc. SN 298,653. Pub. 3-11-69. Filed 5-20-68.

869,949. LOGIC. Bristol-Myers Company. SN 298,689. Pub. 3-11-69. Filed 5-21-68.

869,950. CLINITREX. Bristol-Myers Company. SN 298,692. Pub. 3-11-69. Filed 5-21-68.

869,951. COMPARICIN. Bristol-Myers Company. SN 298,793. Pub. 3-11-69. Filed 5-22-68.

869,952. COMPUTE. Bristol-Myers Company. SN 298,794. Pub. 3-11-69. Filed 5-22-68.

869,953. COMPARISIN. Bristol-Myers Company. SN 298,795. Pub. 3-11-69. Filed 5-22-68.

869,954. ALUPENT-SED. Boehringer Ingelheim, G.m.b.H. SN 298,919. Pub. 3-11-69. Filed 5-23-68.

869,955. MUSLAX. Cole Pharmacal Company, Inc. SN 299,105. Pub. 3-11-69. Filed 5-27-68.

869,956. GEIGY. Geigy Chemical Corporation. SN 299,975. Pub. 3-11-69. Filed 6-7-68.

869,957. COMPARINOL. Bristol-Myers Company. SN 300,896. Pub. 3-11-69. Filed 6-20-68.

869,958. COMPARISON. Bristol-Myers Company. SN 300,898. Pub. 3-11-69. Filed 6-20-68.

869,959. BUTALIVE. Laboratorios Dida Ltd. SN 301,871. Pub. 3-11-69. Filed 5-27-68.

869,960. CLEAR-MAN. Richardson-Merrell Inc. SN 306,993. Pub. 3-11-69. Filed 9-10-68.

869,961. CLEAR DELIGHT. Richardson-Merrell Inc. SN 306,994. Pub. 3-11-69. Filed 9-10-68.

869,962. RESUME. Colgate-Palmolive Company. SN 310,388. Pub. 3-11-69. Filed 10-24-68.

869,963. COMBIMAST. Chas. Pfizer & Co., Inc. SN 310,827. Pub. 3-11-69. Filed 10-30-68.

869,964. ESKALITH. Smith Kline & French Laboratories. SN 310,987. Pub. 3-11-69. Filed 10-31-68.

Class 19 — Vehicles

869,965. NORDEX AND DESIGN. Nordex Industries, assignee of Herbert E. Peterson. SN 268,060. Pub. 3-11-69. Filed 3-31-67.

869,966. MILLER AND DESIGN. Miller Manufacturing Company, Inc. MULTIPLE CLASS (Classes 19 and 23). SN 269,678. Pub. 1-14-69. Filed 4-20-67.

869,967. COMMANDER. North American Rockwell Corporation. SN 290,515. Pub. 12-31-68. Filed 2-7-68.

869,968. W AND DESIGN. Midland-Ross Corporation. SN 295,658. Pub. 3-11-69. Filed 4-15-68.

869,969. HULA TOTE. Hardware and Industrial Tool Company Inc. SN 300,588. Pub. 3-11-69. Filed 6-17-68.

869,970. PIVOTRACT. Pivotract Corporation. SN 300,616. Pub. 3-11-69. Filed 6-17-68.

869,971. J AND DESIGN. The Johnson Corporation. SN 300,940. Pub. 3-11-69. Filed 6-20-68.

869,972. VIKING-T-BAR. Universal Oil Products Company, d.b.a. UOP Bostrom Division. SN 301,376. Pub. 3-11-69. Filed 6-25-68.

869,973. DUCK (DESIGN). Mallard Coach Corporation. SN 307,655. Pub. 3-11-69. Filed 9-18-68.

869,974. CENTURION. The Commodore Corporation. SN 307,976. Pub. 3-11-69. Filed 9-23-68.

869,975. PUP. Beagle Aircraft Limited. SN 311,566. Pub. 3-11-69. Filed 11-7-68.

869,976. BEAGLE. Beagle Aircraft Limited. SN 311,567. Pub. 3-11-69. Filed 11-7-68.

Class 21 — Electrical Apparatus, Machines, and Supplies

869,902. (See Class 7 for this trademark.)

869,977. CROWN. Crown Radio Corporation. SN 179,322. Pub. 3-11-69. Filed 10-18-63.

869,978. PEM. Peter Micha. CONSOLIDATED CERTIFICATE. SN 252,865, pub. 3-11-69, filed 8-22-66, Cl. 21; SN 289,319, pub. 1-28-69, filed 1-22-68, Cl. 26.

869,979. CARD. HF Image Systems, Inc., assignee of Houston Fearless Corporation. SN 260,430. Pub. 3-11-69. Filed 12-9-66.

869,980. MISCELLANEOUS DESIGN. American Micro-Systems, Inc. MULTIPLE CLASS (Classes 21, 38, and 107). SN 265,863. Pub. 3-11-69. Filed 2-3-67.

869,981. P AND DESIGN. Perstorp Aktiebolag. SN 275,464. Pub. 3-11-69. Filed 7-6-67.

869,982. T (DESIGN). Tensor Corporation. SN 277,086. Pub. 3-11-69. Filed 7-28-67.

869,983. BARRON AND DESIGN. Sound of Music, Inc. MULTIPLE CLASS (Classes 21 and 36). SN 281,236. Pub. 3-11-69. Filed 9-26-67.

869,984. NOEL AND DESIGN. Topco Associates, Inc. SN 285,361. Pub. 3-11-69. Filed 11-21-67.

869,985. ARCEE AND DESIGN. Lustrum, Inc. SN 289,025. Pub. 12-31-68. Filed 1-17-68.

869,986. CRIMPCON. Molex Products Company. SN 293,843. Pub. 12-3-68. Filed 3-21-68.

869,987. WORLD MASTER. Ross Electronics Corporation. SN 298,153. Pub. 3-11-69. Filed 5-14-68.

869,988. PENMITTER. A.R.F. Products, Inc. SN 298,517. Pub. 3-11-69. Filed 5-20-68.

869,989. AERO AND DESIGN. American District Telegraph Company. SN 299,195. Pub. 3-11-69. Filed 5-28-68.

869,990. NUDRALIC. Gemco Electric Company. SN 299,344. Pub. 3-11-69. Filed 5-29-68.

869,991. NYZIN. Yardney Electric Corporation. SN 300,803. Pub. 3-11-69. Filed 6-12-68.

869,992. TRINITRON. Sony Corporation. SN 301,553. Pub. 3-11-69. Filed 6-27-68.

869,993. SMD. Sony Corporation. SN 301,555. Pub. 3–11–69. Filed 6–27–68.

869,994. UNITED HANDICAPPED SALES AND DESIGN. Northwest Handicapped Sales, Inc. SN 301,957. Pub. 3–11–69. Filed 7–3–68.

869,995. TWINKIE. Eagle-Picher Industries, Inc. SN 302,309. Pub. 3–11–69. Filed 7–9–68.

869,996. 175–T. Fisher Radio Corporation. SN 302,734. Pub. 3–11–69. Filed 7–15–68.

869,997. THRIFT-FOAM. Avnet, Inc. SN 304,298. Pub. 3–11–69. Filed 8–5–68.

869,998. STERISYSTEMS. Bell Hospital Systems, Inc. SN 304,576. Pub. 3–11–69. Filed 8–7–68.

869,999. ARM AND DESIGN. Microwave Development Laboratories, Inc. SN 305,230. Pub. 3–11–69. Filed 8–15–68.

870,000. GAS-GUARD. Gas Guard Corporation of America. SN 309,813. Pub. 3–11–69. Filed 10–17–68.

Class 22 — Games, Toys, and Sporting Goods

870,001. SPECIAL AGENT 707. Red Box Company Limited. SN 266,689. Pub. 3–11–69. Filed 3–14–67.

870,002. STEBCO. Stebco Products Corporation, assignee of Stebco Industries, Inc. SN 278,326. Pub. 3–11–69. Filed 6–7–67.

870,003. MISCELLANEOUS DESIGN. California Exposition and Fair Corporation. SN 281,441. Pub. 3–11–69. Filed 9–29–67.

870,004. MINI TENT AND DESIGN. Integral Engineering & Mfg. Corp. SN 284,088. Pub. 3–11–69. Filed 11–3–67.

870,005. SPECULATION. Clifford Alan Lindroth. SN 289,996. Pub. 3–11–69. Filed 1–31–68.

870,006. THE PEACEMAKER. Colt's Inc. SN 291,032. Pub. 3–11–69. Filed 2–14–68.

870,007. SNARK. Rexall Drug and Chemical Company, d.b.a. The Seamless Rubber Company. SN 295,254. Pub. 3–11–69. Filed 4–9–68.

870,008. HOLBROOK AND DESIGN. Holbrook-Patterson, Inc. SN 295,735. Pub. 3–11–69. Filed 4–16–68.

870,009. THE ACTIVATOR AND DESIGN. State Line Service, Inc. SN 296,052. Pub. 3–11–69. Filed 4–19–68.

870,010. GUESS AGAIN. Milton Bradley Company. SN 296,302. Pub. 3–11–69. Filed 4–23–68.

870,011. POP YER TOP! Milton Bradley Company. SN 296,514. Pub. 3–11–69. Filed 4–25–68.

870,012. RECALL. Milton Bradley Company. SN 296,515. Pub. 3–11–69. Filed 4–25–68.

870,013. ALUMISHAFT. A. G. Spalding & Bros. Inc. SN 296,586. Pub. 3–11–69. Filed 4–25–68.

870,014. ALL-IN-ONE. Thomas B. Semans, Jr. SN 297,444. Pub. 3–11–69. Filed 5–6–68.

870,015. FERRULE FLEX. South Bend Tackle Company Inc. SN 297,608. Pub. 3–11–69. Filed 5–7–68.

870,016. SPIN-I-DIDDEE. South Bend Tackle Company Inc. SN 297,609. Pub. 3–11–69. Filed 5–7–68.

870,017. GAUCHO. Rexall Drug and Chemical Company, d.b.a. The Seamless Rubber Company. SN 298,245. Pub. 3–11–69. Filed 5–15–68.

870,018. SWINGWEIGHTED. Northwestern Golf Company. SN 298,849. Pub. 3–11–69. Filed 5–22–68.

870,019. SUPER B–48. Brownell & Company Incorporated. SN 299,006. Pub. 3–11–69. Filed 5–27–68.

870,020. ST AND DESIGN. Standard Toycraft, Inc. SN 299,255. Pub. 3–11–69. Filed 5–28–68.

870,021. PRO-BILT. Northwestern Golf Company. SN 299,371. Pub. 3–11–69. Filed 5–29–68.

870,022. VIRGINIAN. Northwestern Golf Company. SN 299,580. Pub. 3–11–69. Filed 6–3–68.

870,023. PLANET HOP AND DESIGN. Planet Hop Game Company. SN 302,246. Pub. 3–11–69. Filed 7–8–68.

870,024. MARK 106. Hasbro Industries, Inc., by change of name from Hassenfeld Bros. Inc. SN 302,318. Pub. 3–11–69. 7–9–68.

870,025. BUBBLE-UP. Hasbro Industries, Inc., by change of name from Hassenfeld Bros. Inc. SN 302,320. Pub. 3–11–69. Filed 7–9–68.

870,026. DOLLY AND ME. Hasbro Industries, Inc., by change of name from Hassenfeld Bros. Inc. SN 302,321. Pub. 3–11–69. Filed 7–9–68.

870,027. LOVE. Hasbro Industries, Inc., by change of name from Hassenfeld Bros. Inc. SN 302,324. Pub. 3–11–69. Filed 7–9–68.

870,028. PENGUIN POLO. Hasbro Industries, Inc., by change of name from Hassenfeld Bros. Inc. SN 302,325. Pub. 3–11–69. Filed 7–9–68.

870,029. PIE FACE. Hasbro Industries, Inc., by change of name from Hassenfeld Bros. Inc. SN 302,326. Pub. 3–11–69. Filed 7–9–68.

870,030. SUGAR PLUM AND DESIGN. Hasbro Industries, Inc., by change of name from Hassenfeld Bros. Inc. SN 302,327. Pub. 3–11–69. Filed 7–9–68.

870,031. BABBLE DABBLES. Hasbro Industries, Inc. by change of name from Hassenfeld Bros. Inc. SN 302,328. Pub. 3–11–69. Filed 7–9–68.

870,032. ZIPSLIDE. Texia Corporation. SN 302,459. Pub. 3–11–69. Filed 7–10–68.

870,033. YELL-A-PHONE. Wonder Products Co. SN 303,946. Pub. 3–11–69. Filed 7–30–68.

870,034. OLLY-O. Newport Opti-Sonics Company. SN 307,854. Pub. 3–11–69. Filed 9–20–68.

870,035. SPACE BUBBLE. Mattel, Inc. SN 310,407. Pub. 3–11–69. Filed 10–24–68.

870,036. EEEEKS! Mattel, Inc. SN 310,408. Pub. 3–11–69. Filed 10–24–68.

870,037. BLIPPY. Mattel, Inc. SN 310,409. Pub. 3–11–69. Filed 10–24–68.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

869,918. (See Class 13 for this trademark.)

869,966. (See Class 19 for this trademark.)

870,038. SABRE-LATHE. McGraw-Edison Company. SN 254,059. Pub. 3–11–69. Filed 9–8–66.

870,039. P AND DESIGN. Perstorp Aktiebolag. SN 275,466. Pub. 3–11–69. Filed 7–6–67.

870,040. P & G AND DESIGN. Paull & Griffin Company. SN 276,346. Pub. 3–11–69. Filed 7–19–67.

870,041. UNIVERSAL. Union Manufacturing Company. SN 276,487. Pub. 3–11–69. Filed 7–20–67.

870,042. STUD-O-MATIC. Studebaker Corporation. SN 276,877. Pub. 3–11–69. Filed 7–26–67.

870,043. CARTER SINCE 1920 AND DESIGN. Carter Diamond Tool Corporation. SN 279,803. Pub. 3–11–69. Filed 9–7–67.

870,044. DURA FLEX. The Sherwin-Williams Company, assignee of The Osborn Manufacturing Company. SN 282,127. Pub. 3–11–69. Filed 10–9–67.

870,045. FERROBOARD. Oglebay Norton Company. SN 282,713. Pub. 3–11–69. Filed 10–17–67.

870,046. SPIRAL AND DESIGN. Harry G. Yetter, Joan Whalen and Joseph H. Whalen. SN 282,942. Pub. 3–11–69. Filed 10–19–67.

870,047. CUSTOM TORQUE. Cummins Engine Company, Inc. SN 283,880. Pub. 3–11–69. Filed 11–1–67.

870,048. SOF-TOUCH. AMP Incorporated. SN 288,757. Pub. 3–11–69. Filed 1–15–68.

870,049. WINDJAMMER. Ametek, Inc. SN 290,459. Pub. 3–11–69. Filed 2–7–68.

870,050. D C AND DESIGN. Dia-Chrome, Inc., d.b.a. Dia-Chrome Co. SN 292,895. Pub. 3–11–69. Filed 3–11–68.

870,051. WINDBAG. Robert M. L. Lindquist, d.b.a. Expansion Products Co. SN 295,150. Pub. 3–11–69. Filed 4–8–68.

870,052. DUO-TRAK. Illinois Tool Works Inc. SN 295,528. Pub. 3–11–69. Filed 4–12–68.

870,053. SUSSEX HOUSE CUTLERY. Washington Forge, Incorporated. SN 295,578. Pub. 3–11–69. Filed 4–12–68.

870,054. DAIDO RUSTLESS CHAIN. Daido Corporation. SN 296,670. Pub. 3–11–69. Filed 4–26–68.

870,055. BLUEPRINTED. Crane Engineering Co., Inc. SN 297,174. Pub. 3–11–69. Filed 5–2–68.

870,056. OCEANA. Stercal, Inc., d.b.a. Oceana Tool Manufacturing Co. SN 299,169. Pub. 3–11–69. Filed 5–27–68.

870,057. WRAPIDFLEX. Ro-Band Corporation. SN 299,251. Pub. 3–11–69. Filed 5–28–68.

870,058. DURA-CONE. Gerbing Manufacturing Corporation. SN 300,929. Pub. 3–11–69. Filed 6–20–68.

870,059. ROUGHMASTER. Toro Manfacturing Corporation. SN 300,989. Pub. 3–11–69. Filed 6–20–68.

870,060. BROXOSHAVE. Etablissement Aesup. SN 301,215. Pub. 3–11–69. Filed 6–24–68.

870,061. ROLL-A-HOE. Wylie A. Byrd. SN 301,910. Pub. 3–11–69. Filed 7–3–68.

870,062. VENTURA. Olivetti Underwood Corporation. SN 301,959. Pub. 3–11–69. Filed 7–3–68.

Class 24 — Laundry Appliances and Machines

870,063. NORGETOWN. Borg-Warner Corporation. SN 300,056. Pub. 3–11–69. Filed 6–10–68.

Class 26 — Measuring and Scientific Appliances

869,978. CONSOLIDATED CERTIFICATE. See Class 21.

870,064. POLYNESIAN PATTERN AND DESIGN. McCall Corporation, assignee, by mesne assignment, of Elsie Millray Ames. SN 258,878. Pub. 3–11–69. Filed 11–17–66.

870,065. ERE EDISON RESPONSIVE ENVIRONMENT TALKING TYPEWRITER. McGraw-Edison Company. SN 265,907. Pub. 3–11–69. Filed 3–3–67.

870,066. ERE. McGraw-Edison Company. SN 265,908. Pub. 3–11–69. Filed 3–3–67.

870,067. EDISON RESPONSIVE ENVIRONMENT. McGraw-Edison Company. SN 265,909. Pub. 3–11–69. Filed 3–3–67.

870,068. TALKING TYPEWRITER. McGraw-Edison Company. SN 265,910. Pub. 3–11–69. Filed 3–3–67.

870,069. IBES. Data Resolved Tools Pty. Ltd. SN 275,516. Pub. 3–11–69. Filed 7–7–67.

870,070. MOD CELL. Burtek, Inc. SN 284,159. Pub. 3–11–69. Filed 11–6–67.

870,071. BURSON. Shoel Burstein, d.b.a. Burson Industries. SN 284,595. Pub. 3–11–69. Filed 11–13–67.

870,072. MOD CELL AND DESIGN. Burtek, Inc. SN 287,273. Pub. 3–11–69. Filed 12–20–67.

870,073. SIMPLEX. Simplex Specialty Co., Inc. SN 288,034. Pub. 3–11–69. Filed 1–3–68.

870,074. PARTIGEN. Behringwerke Aktiengesellschaft. SN 290,069. Pub. 3–11–69. Filed 2–1–68.

870,075. STAR TRACK AND DESIGN. Turomatic Machine Co., Inc. SN 294,758. Pub. 3–11–69. Filed 4–2–68.

870,076. TEMPLAPUNCH. Entwistle Manufacturing Corporation. SN 295,323. Pub. 3–11–69. Filed 4–10–68.

870,077. ALL-WETHA. Watchemoket Optical Co., Inc. SN 297,471. Pub. 3–11–69. Filed 5–6–68.

870,078. BAZOOKA BOB. Albert V. Petrik, d.b.a. A. V. Petrik Company. SN 297,698. Pub. 3–11–69. Filed 5–8–68.

870,079. PHOTOMAT. A. B. Dick Company. SN 298,711. Pub. 12–10–68. Filed 5–21–68.

870,080. MULTIMATIC. Paillard Incorporated. SN 299,073. Pub. 12–24–68. Filed 5–27–68.

870,081. GOLDEN RING. Leupold & Stevens Instruments, Inc. SN 299,563. Pub. 3–11–69. Filed 6–3–68.

870,082. MICROPULL. Unitek Corporation. SN 305,104. Pub. 3–11–69. Filed 8–14–68.

870,083. LENSCREEN. Polacoat Incorporated. SN 307,394. Pub. 3–11–69. Filed 9–16–68.

870,084. CHARG-CHEK. Thexton Manufacturing Company. SN 311,342. Pub. 3–11–69. Filed 11–5–68.

Class 27 — Horological Instruments

870,085. BEVERLY. General Time Corporation. SN 307,459. Pub. 3–11–69. Filed 9–16–68.

870,086. ROMANCE. General Time Corporation. SN 307,461. Pub. 3–11–69. Filed 9–16–68.

870,087. MANTELETTE. General Time Corporation. SN 307,462. Pub. 3–11–69. Filed 9–16–68.

870,088. CORSAIR. General Time Corporation. SN 307,464. Pub. 3–11–69. Filed 9–16–68.

870,089. HELMSMAN. General Time Corporation. SN 307,465. Pub. 3–11–69. Filed 9–16–68.

870,090. FACET. General Time Corporation. SN 307,467. Pub. 3–11–69. Filed 9–16–68.

870,091. EXETER. General Time Corporation. SN 307,469. Pub. 3–11–69. Filed 9–16–68.

Class 28 — Jewelry and Precious-Metal Ware

870,092. MISCELLANEOUS DESIGN. California Exposition and Fair Corporation. SN 281,442. Pub. 3–11–69. Filed 9–29–67.

870,093. PROTEUS. Bellavance, Inc. SN 298,561. Pub. 3–11–69. Filed 5–20–68.

870,094. BOSCO AND DESIGN. Boris Shteinshleifer, d.b.a. N. L. Shteinshleifer Co. SN 304,625. Pub. 3–11–69. Filed 8–7–68.

Class 29 — Brooms, Brushes, and Dusters

870,095. MIKO. AB. Bo Landberg & Co. MULTIPLE CLASS (Classes 29 and 52). SN 242,872. Pub. 3–11–69. Filed 4–7–66.

Class 30 — Crockery, Earthenware, and Porcelain

869,918. (See Class 13 for this trademark.)

870,096. HOLIDAY DESIGNS AND DESIGN. Holiday Designs, Inc. MULTIPLE CLASS (Classes 30 and 50). SN 210,785. Pub. 3–16–66. Filed 1–27–65.

870,097. MISCELLANEOUS DESIGN. California Exposition and Fair Corporation. SN 281,443. Pub. 3–11–69. Filed 9–29–67.

870,098. ALOX. H. F. Corrs Company, Inc. SN 307,312. Pub. 3–11–69. Filed 9–13–68.

Class 31 — Filters and Refrigerators

863,866. (See Class 2 for this trademark.)

870,099. NAUTILUS. The Tappan Company. SN 297,697. Pub. 3–11–69. Filed 5–10–68.

Class 32 — Furniture and Upholstery

869,902. (See Class 7 for this trademark.)

869,904. (See Class 8 for this trademark.)

869,911. (See Class 12 for this trademark.)

870,100. NEO-LE-GI-LE. Joseph J. Gildea. SN 266,655. Pub. 3-11-69. Filed 3-14-67.

870,101. PLAY PIC! Donald M. Levy. SN 287,439. Pub. 3-11-69. Filed 12-22-67.

870,102. COMPATICA. Drexel Enterprises, Inc., assignee of Drexel Enterprises, Inc. SN 289,015. Pub. 3-11-69. Filed 1-17-68.

870,103. EXPAN-TRAC. Wassell Organization Inc. SN 308,338. Pub. 3-11-69. Filed 9-26-68.

Class 33 — Glassware

869,918. (See Class 13 for this trademark.)

870,104. MISCELLANEOUS DESIGN. California Exposition and Fair Corporation. SN 281,444. Pub. 3-11-69. Filed 9-29-67.

Class 34 — Heating, Lighting, and Ventilating Apparatus

870,105. CONVERT-AIRE. Katona Metal Fabricators Inc. SN 280,424. Pub. 3-11-69. Filed 9-15-67.

870,106. VESTA. Vesta Corporation, assignee of Funtime, Inc. SN 280,699. Pub. 3-11-69. Filed 9-19-67.

870,107. PRE-Y-ER. Katona Metal Fabricators Inc. SN 281,376. Pub. 3-11-69. Filed 9-28-67.

870,108. DRI-SAVER ETC. AND DESIGN. S. Blickman, Inc. SN 287,270. Pub. 3-11-69. Filed 12-20-67.

870,109. KIILOY. Weld Mold Company. SN 303,849. Pub. 3-11-69. Filed 7-29-68.

Class 36 — Musical Instruments and Supplies

869,983. (See Class 21 for this trademark.)

870,110. MISCELLANEOUS DESIGN. Scientific Music Industries, Inc. SN 275,080. Pub. 3-11-69. Filed 6-29-67.

870,111. SUNSONIC. Kabushiki Kaisha Sankei Seisakusho, d.b.a. Sankei Mfg. Co. SN 289,807. Pub. 3-11-69. Filed 1-29-68.

870,112. INSTANT MUSIC AND DESIGN. Walter E. Smith. SN 291,647. Pub. 3-11-69. Filed 2-21-68.

870,113. BASIN BEAT. The Ohio Art Company. SN 295,759. Pub. 3-11-69. Filed 4-16-68.

870,114. SCENEVILLE AND DESIGN. Sceneville Musical Record Company. SN 300,119. Pub. 3-11-69. Filed 6-10-68.

870,115. CLUB DATE. Leban Imports, Inc. SN 306,495. Pub. 3-11-69. Filed 9-3-68.

Class 37 — Paper and Stationery

869,863. (See Class 1 for this trademark.)

870,116. MISCELLANEOUS DESIGN. California Exposition and Fair Corporation. SN 281,445. Pub. 3-11-69. Filed 9-29-67.

Class 38 — Prints and Publications

869,980. (See Class 21 for this trademark.)

870,117. COLOR-TROL. Printpack Incorporated. SN 273,103. Pub. 3-11-69. Filed 6-5-67.

870,118. MISCELLANEOUS DESIGN. California Exposition and Fair Corporation. SN 281,446. Pub. 3-11-69. Filed 9-29-67.

870,119. INVOLVED. Inter-Varsity Christian Fellowship of the United States of America. SN 284,479. Pub. 3-11-69. Filed 11-9-67.

870,120. THE O-T-C MARKET CHRONICLE. William B. Dana Company. SN 294,378. Pub. 3-11-69. Filed 3-28-68.

870,121. YARDAGE. Eugene G. Reid, d.b.a. Yardage Publications. SN 296,348. Pub. 3-11-69. Filed 4-23-68.

870,122. REGGIE AND ME. Close-Up, Inc. SN 297,843. Pub. 3-11-69. Filed 5-10-68.

870,123. JOURNAL OF INTERNATIONAL AFFAIRS. The Trustees of Columbia University in the City of New York. SN 298,368. Pub. 3-11-69. Filed 5-16-68.

870,124. LOGECOLOR. Logetronics, Inc. SN 304,363. Pub. 3-11-69. Filed 8-5-68.

870,125. HOUSE (DESIGN). Random House, Inc. SN 307,070. Pub. 3-11-69. Filed 9-11-68.

870,126. PANTHEON AND DESIGN. Random House, Inc. SN 310,423. Pub. 3-11-69. Filed 10-24-68.

Class 39 — Clothing

869,875. (See Class 3 for this trademark.)

870,127. Q-T. The Jo-An Shoe Mfg. Co., Inc. SN 262,590. Pub. 3-11-69. Filed 1-16-67.

870,128. MISCELLANEOUS DESIGN. California Exposition and Fair Corporation. SN 281,447. Pub. 3-11-69. Filed 9-29-67.

870,129. STRAWTOP AND DESIGN. Bruxton Shirt Co., Inc. SN 286,320. Pub. 3-11-69. Filed 12-6-67.

870,130. JANE MARSHALL. Barringer Knitting Mills Incorporated. SN 291,827. Pub. 3-11-69. Filed 2-26-68.

870,131. FOX HILL. R. Fox Trouser Manufacturing Company. SN 294,776. Pub. 3-11-69. Filed 4-8-68.

870,132. KICKAWAY. Kickaway Corporation. SN 295,534. Pub. 3-11-69. Filed 4-12-68.

870,133. HUGGLES AND DESIGN. Brae-Burn Hat Co. Inc. SN 297,165. Pub. 3-11-69. Filed 5-2-68.

870,134. PATSI. Miss Pat. SN 297,304. Pub. 3-11-69. Filed 5-3-68.

870,135. RED GARTER. Hillstrom Enterprises, Inc. SN 297,407. Pub. 3-11-69. Filed 5-6-68.

870,136. MISCELLANEOUS DESIGN. Adidas-Sportschuhfabriken Adi Dassler K.G. SN 302,478. Pub. 3-11-69. Filed 7-11-68.

870,137. SKEE JEES. Lonn Industries Ltd. SN 303,423. Pub. 3-11-69. Filed 7-23-68.

870,138. GAZETTE CASUALS AND DESIGN. Gazette Casuals Inc. SN 307,532. Pub. 3-11-69. Filed 9-17-68.

Class 40 — Fancy Goods, Furnishings, and Notions

870,139. SUDDEN SET. American Home Products Corporation, assignee of Bristol-Myers Company. SN 284,588. Pub. 10-22-68. Filed 11-13-67.

Class 41 — Canes, Parasols, and Umbrellas

870,140. MISCELLANEOUS DESIGN. California Exposition and Fair Corporation. SN 281,449. Pub. 3-11-69. Filed 9-29-67.

870,141. RAINAWAY. Telesco Brophey Limited. SN 302,140. Pub. 3-11-69. Filed 7-5-68.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

869,918. (See Class 13 for this trademark.)

870,142. MISCELLANEOUS DESIGN. California Exposition and Fair Corporation. SN 281,450. Pub. 3-11-69. Filed 9-29-67.

870,143. S SANTEE SALES AND DESIGN. Santee Sales Corp. SN 288,119. Pub. 3-11-69. Filed 1-4-68.

870,144. SANTEE ORIGINAL. Santee Sales Corp. SN 288,120. Pub. 3-11-69. Filed 1-4-68.

870,145. T TREND OF THE TIMES AND DESIGN. Santee Sales Corp., assignee of R. Stein & Company, Inc. SN 288,137. Pub. 3-11-69. Filed 1-4-68.

870,146. CARLIN. West Point-Pepperell, Inc. SN 291,800. Pub. 3-11-69. Filed 2-23-68.

870,147. CIRCLE (DESIGN). Feldmühle Aktiengesellschaft. SN 294,927. Pub. 3-11-69. Filed 4-4-68.

870,148. TM TREND MILLS AND DESIGN. Trend Mills, Inc. SN 295,197. Pub. 3-11-69. Filed 4-8-68.

870,149. GALAXY. Turkeltaub & Schiffer, Inc. SN 302,538. Pub. 3-11-69. Filed 7-11-68.

870,150. TC-28. Munsingwear, Inc. SN 302,749. Pub. 3-11-69. Filed 7-15-68.

870,151. ELEPHANTE PIED. Cone Mills Corporation, assignee of Cone Mills Inc. SN 310,275. Pub. 3-11-69. Filed 10-23-68.

Class 44 — Dental, Medical, and Surgical Appliances

870,152. DUALAX. Conrac Corporation. SN 281,454. Pub. 3-11-69. Filed 9-29-67.

870,153. PORTI-BOY. Conrac Corporation. SN 281,455. Pub. 3-11-69. Filed 9-29-67.

870,154. SAN-PAN. William H. Weiler and Inez B. Weiler (joint owners), d.b.a. Weiler Products. SN 285,281. Pub. 3-11-69. Filed 11-20-67.

870,155. ARTERIOSONDE. Hoffmann-La Roche Inc. SN 285,925. Pub. 3-11-69. Filed 11-30-67.

870,156. VITADUR. Vita Zahnfabrik H. Rauter K.G. SN 288,041. Pub. 3-11-69. Filed 1-3-68.

870,157. UNISONIC. Unitek Corporation. SN 290,780. Pub. 3-11-69. Filed 2-9-68.

870,158. OSTOGUARDS. Charles Merrill Vaughn, d.b.a. Vulcan Probe Co. SN 298,887. Pub. 3-11-69. Filed 5-22-68.

870,159. FEATHER SOFT. Monterey Mills, Inc. SN 299,813. Pub. 3-11-69. Filed 6-6-68.

870,160. MAJOR DENT. Major-Prodotti Dentari-Societa in Nome Collettivo di Renaldo Giovanni & Figli. SN 300,718. Pub. 3-11-69. Filed 6-18-68.

870,161. BRISTOLINE. Bristoline, Inc. SN 302,585. Pub. 3-11-69. Filed 7-12-68.

870,162. INFALARM. Becton, Dickinson and Company. SN 303,015. Pub. 3-11-69. Filed 7-18-68.

870,163. VIBRA MAT. The Denticator Company, Inc. SN 303,042. Pub. 1-7-69. Filed 7-18-68.

870,164. SIT-N-NURSE. Eagle Druggists Supply Co., Inc. SN 305,786. Pub. 3-11-69. Filed 8-23-68.

870,165. STARLINER. Everest & Jennings, Inc. SN 306,656. Pub. 3-11-69. Filed 9-5-68.

870,166. PREMIER. Everest & Jennings, Inc. SN 306,657. Pub. 3-11-69. Filed 9-5-68.

870,167. TEMPO-STAT. Stat Corporation. SN 307,596. Pub. 3-11-69. Filed 9-17-68.

870,168. ORTHO-DENT. Casco Products Corporation. SN 308,599. Pub. 3-11-69. Filed 10-1-68.

870,169. MICRO. Air Reduction Company, Incorporated. SN 309,215. Pub. 3-11-69. Filed 10-9-68.

870,170. WEDGE-MATIC. Theradyne Corporation. SN 310,991. Pub. 3-11-69. Filed 10-31-68.

870,171. TOGGLE-MATIC. Theradyne Corporation. SN 310,992. Pub. 3-11-69. Filed 10-31-68.

Class 45 — Soft Drinks and Carbonated Waters

870,172. 20 GRAND. Warner-Lambert Pharmaceutical Company. SN 280,121. Pub. 3-11-69. Filed 9-11-67.

870,173. LUVYA. Vernor-Wagner Corporation. SN 283,372. Pub. 3-11-69. Filed 10-25-67.

870,174. FROM DOWN BELOW THE ROUBIDOUX. Faultless Starch Company. SN 292,366. Pub. 3-11-69. Filed 3-4-68.

870,175. DEEP, DEEP WELL. Faultless Starch Company. SN 292,367. Pub. 3-11-69. Filed 3-4-68.

870,176. 1812 WELL. Faultless Starch Company. SN 292,368. Pub. 3-11-69. Filed 3-4-68.

870,177. CUTE FRUIT AND DESIGN. Merlite Industries, Inc. SN 295,048. Pub. 3-11-69. Filed 4-5-68.

870,178. THIRST BEATERS. The National Sugar Refining Company. SN 295,939. Pub. 3-11-69. Filed 4-18-68.

Class 46 — Foods and Ingredients of Foods

869,881. (See Class 4 for this trademark.)

870,179. CORN PIXIES. Borden, Inc., assignee of Wise Potato Chip Company. SN 187,452. Pub. 5-18-65. Filed 2-25-64.

870,180. TRIM AND DESIGN. Tonnema N.V. SN 226,866. Pub. 4-11-67. Filed 8-31-65.

870,181. GOLDEN YEAST NUGGETS. Eugene Kazmark, d.b.a. Remin Laboratories. SN 237,001. Pub. 7-4-67. Filed 1-21-66.

870,182. CHUCK WAGON. Ralston Purina Company. SN 244,248. Pub. 10-10-67. Filed 4-25-66.

870,183. "PIXIE" CRINKLES. Ore-Ida Foods, Inc. SN 248,581. Pub. 11-22-66. Filed 6-21-66.

870,184. MCC AND DESIGN. Toshimasa Mizugaki. SN 252,912. Pub. 3-11-69. Filed 8-22-66.

870,185. MERRY-MUNCH. Candy Snacks Corporation. SN 271,917. Pub. 8-13-68. Filed 5-19-67.

870,186. TURKEY TOWN. George Mazur Enterprises, Inc. MULTIPLE CLASS (Classes 46 and 101). SN 284,960. Pub. 3-11-69. Filed 11-16-67.

870,187. PROTALL. The Pillsbury Company. SN 292,609 Pub. 9-17-68. Filed 3-6-68.

870,188. RAGU. Ragú Packing Company, Inc. SN 293,400. Pub. 3-11-69. Filed 3-15-68.

870,189. PICTURE OF A MAN. New York Snacktime, Inc. SN 295,455. Pub. 3-11-69. Filed 4-11-68.

870,190. FERM-O-LAC. National Dairy Products Corporation. SN 301,757. Pub. 1-14-69. Filed 7-1-68.

870,191. COR-NIP-SHUNS. A. H. Robins Company, Incorporated. SN 302,973. Pub. 3-11-69. Filed 7-17-68.

870,192. NABORHOOD. Brownsville Canning Company. SN 304,302. Pub. 3-11-69. Filed 8-5-68.

870,193. DULCETONE. Fritzsche Brothers, Inc. SN 304,436. Pub. 12-31-68. Filed 8-6-68.

870,194. POKO. Goya Foods Inc. SN 304,601. Pub. 3-11-69. Filed 8-7-68.

870,195. OP CORN. Fairmont Foods Company. SN 308,952. Pub. 3-11-69. Filed 10-7-68.

870,196. CARB-O-LECT. Beecham Inc. SN 309,200. Pub. 3-11-69. Filed 10-9-68.

870,197. BURST-O-DEW. General Mills, Inc. SN 311,444. Pub. 3-11-69. Filed 11-6-68.

Class 47 — Wines

870,198. THE CHRISTIAN BROTHERS AND DESIGN. De La Salle Institute. SN 281,776. Pub. 3–11–69. Filed 10–4–67.

870,199. THE CHRISTIAN BROTHERS AND DESIGN. De La Salle Institute. SN 281,777. Pub. 3–11–69. Filed 10–4–67.

870,200. PRAETORIAN. Mediterranean Importing Co., Inc., d.b.a. Mediterranean Wines. SN 298,743. Pub. 3–11–69. Filed 5–21–68.

870,201. SAMOCA. Mediterranean Importing Co., Inc., d.b.a. Mediterranean Wines. SN 298,744. Pub. 3–11–69. Filed 5–21–68.

Class 48 — Malt Beverages and Liquors

870,202. GUINNESS AND DESIGN. Arthur Guinness Son & Company Limited. SN 290,240. Pub. 3–11–69. Filed 2–5–68.

870,203. HERITAGE. Jos. Schlitz Brewing Company. SN 305,187. Pub. 3–11–69. Filed 8–15–68.

Class 49 — Distilled Alcoholic Liquors

870,204. GEORGI. Black Prince Distillery, Inc., d.b.a. Georgi Distilling Co. SN 309,717. Pub. 3–11–69. Filed 10–16–68.

Class 50 — Merchandise Not Otherwise Classified

870,096. (See Class 30 for this trademark.)

870,205. MAKIT & BAKIT. Quincrafts Corporation. SN 289,197. Pub. 3–11–69. Filed 1–19–68.

Class 51 — Cosmetics and Toilet Preparations

870,206. INTERPLAY. Richard Hudnut. SN 281,194. Pub. 3–11–69. Filed 9–26–67.

870,207. ROYAL SATIN. Angelique International, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 282,341. Pub. 3–11–69. Filed 10–12–67.

870,208. SUDDEN SET. American Home Products Corporation, assignee of Bristol-Myers Company. SN 284,589. Pub. 10–8–68. Filed 11–13–67.

870,209. BRITISH STERLING AND CROWN DESIGN. Textron Inc. MULTIPLE CLASS (Classes 51 and 52). SN 293,658. Pub. 12–31–68. Filed 3–20–68.

870,210. PATHMARK. Supermarkets General Corporation, by change of name and assignment from Louket Markets, Inc. SN 295,831. Pub. 3–11–69. Filed 4–17–68.

870,211. WINTRY SPICE. The Mennen Company. SN 296,033. Pub. 3–11–69. Filed 4–19–68.

870,212. SAUNA. Indal Oy. SN 300,193. Pub. 3–11–69. Filed 6–11–68.

870,213. GRAY-EX. Hask Toiletries, Inc. SN 300,446. Pub. 3–11–69. Filed 6–14–68.

870,214. JACO. James H. Cole. SN 300,688. Pub. 3–11–69. Filed 6–18–68.

870,215. WAIT & SEE. The Mennen Company. SN 300,719. Pub. 3–11–69. Filed 6–18–68.

870,216. CLEARSPUN. Clairol Incorporated. SN 301,711. Pub. 3–11–69. Filed 7–1–68.

870,217. AMPHROGEN. Amos R. Beamon, d.b.a. Penegen Products Co. SN 301,905. Pub. 3–11–69. Filed 7–3–68.

870,218. TIAGO. Tiago International Ltd. SN 302,905. Pub. 3–11–69. Filed 7–17–68.

870,219. COVERETTE. Ben Nye Inc. SN 303,061. Pub. 3–11–69. Filed 7–18–68.

870,220. VERVESSE. The Gillette Company, d.b.a. The Toni Company. SN 308,075. Pub. 3–11–69. Filed 9–24–68.

Class 52 — Detergents and Soaps

870,095. (See Class 29 for this trademark.)

870,207. (See Class 51 for this trademark.)

870,209. (See Class 51 for this trademark.)

870,221. CINDY. Birma Products Corporation. SN 270,881. Pub. 3–11–69. Filed 5–3–67.

870,222. PINK PANTHER. National Chemical Laboratories of Pa., Inc. SN 284,712. Pub. 3–11–69. Filed 11–13–67.

870,223. PATHMARK. Supermarkets General Corporation, by change of name and assignment from Louket Markets, Inc. SN 295,932. Pub. 3–11–69. Filed 4–16–68.

870,224. NIL PHOS. Kelite Chemicals Corporation. SN 296,544. Pub. 3–11–69. Filed 4–25–68.

870,225. OBSIDIAN. Bristol-Myers Company. SN 299,207. Pub. 3–11–69. Filed 5–28–68.

870,226. ROAR. American Home Products Corporation. SN 300,166. Pub. 3–11–69. Filed 6–11–68.

870,227. DOUBLE FEATURE. Simoniz Company. SN 301,141. Pub. 12–17–68. Filed 6–24–68.

Service Marks

Class 100 — Miscellaneous

870,228. MAN (DESIGN). Taco Tico, Inc. SN 294,692. Pub. 3–11–69. Filed 4–1–68.

870,229. MICHAEL'S AND DESIGN. Michael C. Matsos, d.b.a. Michael's Enterprises. SN 296,336. Pub. 3–11–69. Filed 4–23–68.

870,230. BOOS RED BOX SERVICE. Henry P. Boos Dental Laboratories, Inc. SN 299,205. Pub. 3–11–69. Filed 5–28–68.

Class 101 — Advertising and Business

870,186. (See Class 46 for this trademark.)

870,231. AUTOTECH AND DESIGN. Automation Technology, Inc. SN 272,003. Pub. 3–11–69. Filed 5–22–67.

870,232. PIC-A-TRIP. Performance Incentives Corporation. SN 273,098. Pub. 3–11–69. Filed 6–5–67.

870,233. MOHAIR AND DESIGN. Texas Angora Goat Raisers' Association. SN 273,546. Pub. 3–11–69. Filed 6–7–67.

870,234. BILL'S QUALITY MEN'S WEAR AND DESIGN. Bill's, Inc. SN 273,595. Pub. 3–11–69. Filed 6–12–67.

870,235. PLAYCATION. Walker Manufacturing Company. SN 276,198. Pub. 3–11–69. Filed 7–17–67.

870,236. B. K. ANDERSON AND COMPANY. B. K. Anderson & Company. SN 278,565. Pub. 3–11–69. Filed 8–18–67.

870,237. PILL AND PUFF. Pill and Puff, Inc. SN 283,705. Pub. 3–11–69. Filed 10–30–67.

870,238. HOWZE-A-MATIC. Howze and Associates, Incorporated. SN 284,201. Pub. 3–11–69. Filed 11–6–67.

870,239. "NIGHT ON THE TOWN." Civic Promotions, Inc. SN 289,780. Pub. 3–11–69. Filed 1–29–68.

870,240. CRI DESIGN. Cambridge Research Institute, Incorporated. SN 295,611. Pub. 3–11–69. Filed 4–15–68.

870,241. MISCELLANEOUS DESIGN. Peter J. Mastandrea, d.b.a. Mastandrea Studio. SN 298,612. Pub. 3–11–69. Filed 5–20–68.

870,242. THE CAPTAIN'S WALK. Marley Hodgson, Ltd. SN 300,654. Pub. 3–11–69. Filed 6–18–68.

Class 102 — Insurance and Financial

870,243. MEDI-KEY. Georgia International Life Insurance Company. SN 294,044. Pub. 3–11–69. Filed 4–12–68.

870,244. BANCFACTOR. Rosenthal & Rosenthal, Inc. SN 306,861. Pub. 3–11–69. Filed 9–9–68.

Class 105 — Transportation and Storage

870,245. PACKAGED FOR PLEASURE. Cartan Travel Bureau, Inc. SN 281,550. Pub. 3–11–69. Filed 10–2–67.

870,246. FREEWHEELER. Open Road International, Inc. SN 299,476. Pub. 3–11–69. Filed 5–31–68.

870,247. ROYAL ROAD. Open Road International, Inc. SN 299,477. Pub. 3–11–69. Filed 5–31–68.

Class 106 — Material Treatment

870,248. JADARA. Paris Processing Corp. SN 284,029. Pub. 3–11–69. Filed 11–2–67.

Class 107 — Education and Entertainment

869,980. (See Class 21 for this trademark.)

870,249. INTERTEL. National Educational Television and Radio Center, assignee of National Educational Television and Radio Center, and Westinghouse Broadcasting Company, Inc. (joint venture). SN 170,659. Pub. 9–22–64. Filed 6–10–63.

870,250. VANILLA FUDGE. Breakout Management Corp. SN 283,763. Pub. 3–11–69. Filed 10–31–67.

870,251. EIA DESIGN. English in Action, Inc. SN 286,231. Pub. 3–11–69. Filed 10–24–67.

870,252. BRITISH CLINICAL PANORAMA. The National Science Network, Inc. SN 287,450. Pub. 3–11–69. Filed 12–22–67.

870,253. MEDICAL WEEK. The National Science Network, Inc. SN 287,453. Pub. 3–11–69. Filed 12–22–67.

870,254. RINGLING BROS. AND BARNUM & BAILEY. Ringling Bros.-Barnum and Bailey Combined Shows, Inc., by merger and change of name from Ringling Bros.-Barnum & Bailey Combined Shows, Inc. SN 298,355. Pub. 3–11–69. Filed 5–16–68.

870,255. KNICKS AND DESIGN. Madison Square Garden Corporation. SN 299,633. Pub. 3–11–69. Filed 6–4–68.

870,256. CINEMA CENTER FILMS AND DESIGN. Columbia Broadcasting System, Inc. SN 302,671. Pub. 3–11–69. Filed 7–15–68.

870,257. PITTSBURGH STEELERS. Pittsburgh Steelers Sports, Inc. SN 310,975. Pub. 3–11–69. Filed 10–31–68.

870,258. STEELWORKER ON THE GIRDER DESIGN. Pittsburgh Steelers Sports, Inc. SN 310,977. Pub. 3–11–69. Filed 10–31–68.

Class 200

870,259. MT. American Medical Technologists. SN 298,305. Pub. 3–11–69. Filed 5–16–68.

870,260. U. S. ACES. U. S. Aces. SN 298,484. Pub. 3–11–69. Filed 5–17–68.

870,261. AMERICAN SOCIETY OF PODIATRIC ASSISTANTS. American Society of Podiatric Assistants. SN 298,529. Pub. 3–11–69. Filed 5–20–68.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 2 — Receptacles

870,262. Gulf States Paper Corporation, Tuscaloosa, Ala. SN 278,487. Filed P.R. 8–17–67; Am. S.R. 2–11–69.

E-Z LOK

For Folded Paperboard Cartons (Int. Cl. 16).
First use July 17, 1967.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

870,263. Universal Oil Products Company, Des Plaines, Ill. SN 278,259. Filed P.R. 8–14–67; Am. S.R. 1–21–69.

TURBULENT CONTACT ABSORBER

For Wet Scrubber Apparatus for Washing Gaseous Streams in the Presence of Mobile Contact Elements (Int. Cl. 7).
First use Dec. 9, 1968.

Class 26 — Measuring and Scientific Appliances

870,264. Nippon Kogaku Kabushiki Kaisha, Chuo-ku Tokyo, Japan. SN 266,678. Filed P.R. 8–14–67; Am. S.R. 3–5–69.

MEASURESCOPE

For Optical and Photographic Instruments and Parts Thereof—Namely, Microscopes, Telescopes, Transits, Levels, Range Finders, and Stereoscopes (Int. Cl. 9).
First use Jan. 1, 1962; in commerce Jan. 25, 1962.

Class 28 — Jewelry and Precious-Metal Ware

870,265. The Spencer Co., Inc., Cranston, R.I. SN 295,190. Filed P.R. 4–8–68; Am. S.R. 3–6–69.

MISS MARTEL

The name "Miss Martel" is purely fanciful and does not identify or represent any known living individual.
For Jewelry (Int Cl. 14).
First use on or about June 30, 1967.

Class 34 — Heating, Lighting, and Ventilating Apparatus

870,266. Modern Maid, Inc., Chattanooga, Tenn. SN 264,078. Filed P.R. 2-6-67; Am. S.R. 2-28-69.

COOK-N-CLEAN CENTER

For Gas or Electric Eye-Level Range Mounted Over a Dish-Washer (Int. Cl. 11).
First use August 1966.

Class 37 — Paper and Stationery

870,267. Accounting and Business Forms, Inc., Pittsburgh, Pa. SN 254,766. Filed P.R. 9-20-66; Am. S.R. 1-15-69.

FORMPRINTS

For Business Forms (Int. Cl. 16).
First use on or about Mar. 8, 1965.

870,268. The Northwest Paper Company, Cloquet, Minn. SN 300,609. Filed P.R. 6-17-68; Am. S.R. 3-6-69.

Bookbinders' Text

For Fine Printing and Text Paper (Int. Cl. 16).
First use Apr. 12, 1963.

Class 38 — Prints and Publications

870,269. McGraw-Hill, Inc., New York, N.Y. SN 293,781. Filed P.R. 3-21-68; Am. S.R. 3-10-69.

MODERN MANUFACTURING

For Monthly Newsletter (Int. Cl. 16).
First use Mar. 1, 1968.

Class 39 — Clothing

870,270. Excello Cravats, Inc., New York, N.Y. SN 280,033. Filed P.R. 9-11-67; Am. S.R. 10-24-68.

TIFFANY TIE

For Neckties (Int. Cl. 25).
First use Aug. 22, 1967.

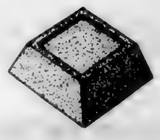
Class 46 — Foods and Ingredients of Foods

870,271. P. Ferrero & C. S.p.A., Alba (Prov. of Cueno), Italy. SN 283,332. Filed P.R. 10-25-67; Am. S.R. 2-12-69.

FERRERO

Owner of Italian Reg. No. 165,373, dated June 6, 1964.
For Cocoa, Chocolate Powder, Chocolate, Candies, Baked Goods—Namely, Cookies and Pastries; and Spreads for Bread—Namely, Jellies, Jams and Preserves (Int. Cls. 29 and 30).

870,272. The Chunky Corporation, New York, N.Y. SN 306,121. Filed 8-28-68.



The mark consists of the configuration of the entire chocolate candy bar. The dots shown in the drawing are for shading purposes only.
For Chocolate Candy Bars (Int. Cl. 30).
First use Mar. 1, 1948.

Class 49 — Distilled Alcoholic Liquors

870,273. Cavendish Import Corp., New York, N.Y. SN 269,974. Filed P.R. 4-25-67; Am. S.R. 1-13-69.

CAVENDISH

For Vodka (Int. Cl. 33).
First use Mar. 2, 1967.

870,274. G. & L. Fili Cora, S.p.A., Turin, Italy. SN 287,908. Filed 1-2-68.



The translation of "Amaro" is "bitter." Owner of Italian Reg. No. 214,208, dated Sept. 11, 1967, and U.S. Reg. Nos. 290,132, 319,779, and others.
For Alcoholic Bitters (Int. Cl. 33).

Class 51 — Cosmetics and Toilet Preparations

870,275. Elizabeth Arden Sales Corporation, d.b.a. Elizabeth Arden, New York, N.Y. SN 289,285. Filed P.R. 1-22-68; Am. S.R. 1-27-69.

ORIOLE RED

For Lipstick, Rouge and Nail Polish (Int. Cl. 3).
First use Jan. 4, 1968.

Class 52 — Detergents and Soaps

870,276. Standard International Corporation, Andover, Mass. SN 287,965. Filed P.R. 1-2-68; Am. S.R. 2-5-69.

CLEAN & KILL

For Liquid Cleaner and Disinfectant (Int. Cl. 3).
First use Dec. 27, 1967.

Service Mark

Class 101 — Advertising and Business

870,277. Spot-O-Gold Corporation, Philadelphia, Pa. SN 285,263. Filed P.R. 11-20-67; Am. S.R. 11-19-68.

MATCH OUR COLORS

For Promoting the Sale of Goods for Services of Others Through Providing Materials and Advertising Matter Designed for a Promotional Contest (Int. Cl. 35).
First use Oct. 17, 1967.

TRADEMARK REGISTRATIONS RENEWED

32,938. "LARCLA." Cl. 51 (Int. Cl. 3). 5-23-1899.
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747,977. PHOTOSTAT. Cl. 106.

Erratum

In the OFFICIAL GAZETTE of Apr. 22, 1969, at page TM 199, under Trademark Registrations Canceled, Section 8, "729,500. SCORE-MORE. Cl. 39. 4–3–62." should be deleted.

TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

509,839. ROBBINS & MYERS. Cl. 21. 5–17–49. Robbins & Myers, Inc., Springfield, Ohio. Amended to appear:

ROBBINS & MYERS

511,486. USAMINE. Cl. 6. 6–21–49. U.S. Sanitary Specialties Corporation, Sterling Drug Inc., New York, N.Y. Amended to appear:

USAMINE

514,132. STALEY. Cl. 6. 8–23–49. A. E. Staley Manufacturing Company, Decatur, Ill. Amended to appear:

Staley

654,019. BP AND DESIGN. Cl. 15. 11–5–57. The British Petroleum Company Limited, London, England. Amended: In the statement, column 2, line 7 is deleted, and the drawing is amended to appear:

BP

714,319. RELIABLE AND DESIGN. Cl. 13. 4–25–61. Reliable Automatic Sprinkler Co., Inc., Mount Vernon, N.Y. Amended to appear:

RELIABLE

740,555. HOLMES. Cl. 23. 11–13–62. Ernest Holmes Company, Chattanooga, Tenn. Amended: In the statement, column 2, lines 1 through 5, the description of goods is deleted and *truck-mounted devices and equipment, including hoists, wrecker bodies and beds, self-loading devices, hoisting and winching equipment; towing devices and accessories for towing disabled vehicles* is inserted.

751,404. UTZ AND DESIGN. Cl. 46. 6–18–63. Utz Potato Chip Company, Inc., Hanover, Pa. Amended to appear:

Utz

757,350. ROYALON. Cl. 35. 9–24–63. United States Rubber Company, Uniroyal, Inc., New York, N.Y. Amended to appear:

ROYALON

761,097. QUIK-FOAM. Cl. 1. 12–3–63. D. B. Morrow, Inc., Wichita Falls, Tex. Corrected: In the statement, column 1, line 1, "Morrow's" should be deleted and *Morrow,* should be inserted.

845,880. TF–8. Cl. 22. 3–12–68. Head Ski Company, Inc., Timonium, Md. Corrected: In the statement, column 1, line 1, "Co." should be deleted and *Company* should be inserted.

861,033. CON-O-VERSEAL. Cl. 35. 11–26–68. C. E. Conover & Co., Inc., Fairfield, N.J. Amended: In the statement, column 2, line 1, after "seals" *specifically excepting metallic seals and gaskets* is inserted.

864,389. PHILADELPHIA JESTERS. Cl. 107. 1–28–69. Lewis Di Leo, d.b.a. Lew Di Leo, Philadelphia, Pa. Corrected: In the statement, column 1, line 1, both occurrences "di" should be deleted and *Di* should be inserted.

866,199. B & G. Cl. 22. 3–11–69. Bergdorf & Goodman Company, New York, N.Y. Corrected: In the statement, column 1, line 2, "745" should be deleted and *754* should be inserted.

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A.R.F. Products, Inc., Raton, N. Mex. 869,988, pub. 3–11–69. Cl. 21.
Abbott Laboratories, North Chicago, Ill. 869,945, pub. 3–11–69. Cl. 18.
Accounting and Business Forms, Inc., Pittsburgh, Pa. 870,267. Cl. 37.
Accurate Leather & Novelty Co., Chicago, Ill. 747,772, canc. Cl. 3.
Adidas-Sportschuhfabriken Adi Dassler K.G., Nuremberg, Germany. 870,136, pub. 3–11–69. Cl. 39.
Aero Service Corp., Philadelphia, Pa. 747,846, canc. Cl. 26.
Aimcee Wholesale Corp. : *See*—
Associated Merchandising Corp.
Air Reduction Co., Inc., New York, N.Y. 870,169, pub. 3–11–69. Cl. 44.
Aircraft-Marine Products Inc., to AMP Inc., Harrisburg, Pa. 514,113, ren. 5–27–69. Cl. 6.
Ajax Plastic Products, Inc., Des Plaines, Ill. 869,866, pub. 3–11–69. Multiple Class (Classes 2, 13, and 31).
Al's Air Filter Service : *See*—
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Aladdin Industries, Inc., Chicago, Ill. 869,870, pub. 12–10–68. Cl. 2.
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Alside, Inc., Akron, Ohio, 507,692, ren. 5–27–69. Cl. 12.
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Amberg File & Index Co., to Amberg File & Index Co., Kankakee, Ill. 509,603, ren. 5–27–69. Cl. 37.
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American Medical Technologists, Park Ridge, Ill. 870,259, pub. 3–11–69. Cl. 200.
American Micro-Systems, Inc., Santa Clara, Calif. 869,980, pub. 3–11–69. Multiple Class (Classes 21, 38, and 107).
American Oil Co., The : *See*—
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American Rubber Products Corp., Berlin, Md. 510,470, ren. 5–27–69. Cl. 13.
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Becton, Dickinson & Co., East Rutherford, N.J. 870,162, pub. 3–11–69. Cl. 44.
Beecham Inc., Clifton, N.J. 870,196, pub. 3–11–69. Cl. 46.
Beetham, M., & Son, to M. Beetham & Son, Ltd., Cheltenham, England. 32,938, ren. 5–27–69. Cl. 51.
Beetham, M., & Son, Ltd. : *See*—
Beetham, M., & Son.
Behringwerke Aktiengesellschaft, Marburg/Lahn, Germany. 870,074, pub. 3–11–69. Cl. 26.
Bell Hospital Systems, Inc., Bridgeport, Conn. 869,998, pub. 3–11–69. Cl. 21.
Bellavance, Inc., Attleboro, Mass. 870,098, pub. 3–11–69. Cl. 28.
Bergdorf & Goodman Co., New York, N.Y. 866,199, cor. Cl. 22.
Bestpak, Inc., Natick, Mass. 869,868, pub. 3–11–69. Cl. 2.
Bianchini, Ferier, Lyon, France, to Bianchini, Ferier, Inc., New York, N.Y. 255,251, ren. 5–27–69. Cl. 42.
Bianchini, Ferier, Inc. : *See*—
Bianchini, Ferier.
Bill's, Inc., Huntsville, Ala. 870,234, pub. 3–11–69. Cl. 101.
Binney & Smith Inc., New York, N.Y. 869,863, pub. 3–11–69. Multiple Class (Classes 1, 5, 16, and 37).
Birdsboro Corp., Birdsboro, Pa. 869,927, pub. 3–11–69. Cl. 14.
Bireley's Inc., Chicago, Ill. 747,927, canc. Cl. 45.
Birma Products Corp., Sayreville, N.J. 870,221, pub. 3–11–69. Cl. 52.
Black Prince Distillery, Inc., d.b.a. Georgi Distilling Co., Nutley, N.J. 870,204, pub. 3–11–69. Cl. 49.
Blanchard & Co., Inc., New York, to Columbia Diamond Ring Co., Inc., Jamaica, N.Y. 251,816, ren. 5–27–69. Cl. 28.
Blickman, S., Inc., Weehawken, N.J. 870,108, pub. 3–11–69. Cl. 34.
Bliss, E. W., Co. : *See*—
Mackintosh-Hemphill Co.
Boehringer Ingelheim, G.m.b.H., Ingelheim am Rhein, Germany. 869,954, pub. 3–11–69. Cl. 18.
Bonsall, Frederick S., Coatesville, Pa., to Q/A Co., Inc., Port Reading, N.J. 512,892, ren. 5–27–69. Cl. 18.
Boorum & Pease Co., Brooklyn, N.Y. 508,724, ren. 5–27–69. Cl. 37.
Boos, Henry P., Dental Laboratories, Inc., Minneapolis, Minn. 870,230, pub. 3–11–69. Cl. 100.
Borden, Inc. : *See*—
Barber, A. H., & Co.
Borden, Inc., New York, N.Y., from Wise Potato Chip Co., Berwick, Pa. 870,179, pub. 5–18–65. Cl. 46.
Borg-Warner Corp., Chicago, Ill. 870,063, pub. 3–11–69. Cl. 24.
Bowers Bros., Inc., to Old Mansion, Inc., Richmond, Va. 513,372, ren. 5–27–69. Cl. 46.
Boye Needle Co., The, Chicago, Ill. 513,717, ren. 5–27–69. Cl. 40.
Bradley, Milton, Co., East Longmeadow, Mass. 870,010–12, pub. 3–11–69. Cl. 22.
Brae-Burn Hat Co. Inc., New York, N.Y. 870,133, pub. 3–11–69. Cl. 39.
Brainerd, Alfred G., Jr., and Guy E. Morgan, d.b.a. Al's Air Filter Service, East St. Louis, Ill. 747,868, canc. Cl. 31.
Brand Hydraulics Co., Omaha, Nebr. 869,916, pub. 3–11–69. Cl. 13.
Brand X Corp., The, from H. H. Chafvin, Jr., d.b.a. The Gleema Co., Cincinnati, Ohio. 747,775, canc. Cl. 4.
Breakout Management Corp., New York, N.Y. 870,250, pub. 3–11–69. Cl. 107.
Breese Corporations, Inc., Union, N.J. 869,921, pub. 12–3–68. Cl. 13.
Bristoline, Inc., New York, N.Y. 870,161, pub. 3–11–69. Cl. 44.
Bristol-Myers Co. : *See*—
Deal, Seraph J.
Bristol-Myers Co., New York, N.Y. 869,946–7, pub. 3–11–69. Cl. 18.
Bristol-Myers Co., New York, N.Y. 869,949–53, pub. 3–11–69. Cl. 18.
Bristol-Myers Co., New York, N.Y. 869,957–8, pub. 3–11–69. Cl. 18.
Bristol-Myers Co. : *See*—
American Home Products Corp.
Bristol-Myers Co., New York, N.Y. 870,225, pub. 3–11–69. Cl. 52.
British Petroleum Co. Ltd., The, London, England. 654,019. Am. 7(d). Cl. 15.
Brownell & Co., Inc., Moodus, Conn. 870,019, pub. 3–11–69. Cl. 22.
Brownsville Canning Co., Brownsville, Wis. 870,192, pub. 3–11–69. Cl. 46.

Brunswig Drug Co., El Segundo, Calif. 869,935, pub. 3–11–69. Cl. 18.
Bruxton Shirt Co., Inc., New York, N.Y. 870,129, pub. 3–11–69. Cl. 39.
Burson Industries: *See*—
Burstein, Shoel.
Burstein, Shoel, d.b.a. Burson Industries, Winnipeg, Manitoba, Canada. 870,071, pub. 3–11–69. Cl. 26.
Burtek, Inc., Tulsa, Okla. 870,070, pub. 3–11–69. Cl. 26.
Burtek, Inc., Tulsa, Okla. 870,072, pub. 3–11–69. Cl. 26.
Bush, W. J., & Co. Ltd., London, England. 747,947, canc. Cl. 49.
Byrd, Wylie A., Tulia, Tex. 870,061, pub. 3–11–69. Cl. 23.
California Exposition & Fair Corp., Sacramento, Calif. 869,865, pub. 3–11–69. Cl. 2.
California Exposition & Fair Corp., Sacramento, Calif. 869,874, pub. 3–11–69. Cl. 3.
California Exposition & Fair Corp., Sacramento, Calif. 869,902, pub. 3–11–69. Multiple Class (Classes 7, 21, and 32).
California Exposition & Fair Corp., Sacramento, Calif. 869,905, pub. 3–11–69. Cl. 8.
California Exposition & Fair Corp., Sacramento, Calif. 870,008, pub. 3–11–69. Cl. 22.
California Exposition & Fair Corp., Sacramento, Calif. 870,092, pub. 3–11–69. Cl. 28.
California Exposition & Fair Corp., Sacramento, Calif. 870,097, pub. 3–11–69. Cl. 30.
California Exposition & Fair Corp., Sacramento, Calif. 870,104, pub. 3–11–69. Cl. 33.
California Exposition & Fair Corp., Sacramento, Calif. 870,116, pub. 3–11–69. Cl. 37.
California Exposition & Fair Corp., Sacramento, Calif. 870,118, pub. 3–11–69. Cl. 38.
California Exposition & Fair Corp., Sacramento, Calif. 870,128, pub. 3–11–69. Cl. 39.
California Exposition & Fair Corp., Sacramento, Calif. 870,140, pub. 3–11–69. Cl. 41.
California Exposition & Fair Corp., Sacramento, Calif. 870,142, pub. 3–11–69. Cl. 42.
Cambridge Research Institute, Inc., Cambridge, Mass. 870,240, pub. 3–11–69. Cl. 101.
Cambridge Rubber Co.: *See*—
Cambridge Rubber Co., The.
Cambridge Rubber Co., The, to Cambridge Rubber Co., Cambridge, Mass. 443,242, ren. 5–27–69. Cl. 39.
Cam-Chem Co., Wayne, Mich. 869,932, pub. 3–11–69. Cl. 16.
Candy Snacks Corp., Methuen, Mass. 870,185, pub. 8–13–68. Cl. 46.
Capper-Harman-Slocum, Inc., to The Harvest Publishing Co., Cleveland, Ohio. 509,578, ren. 5–27–69. Cl. 38.
Capper-Harman-Slocum, Inc., to The Harvest Publishing Co., Cleveland, Ohio. 509,584, ren. 5–27–69. Cl. 38.
Carnation Co.: *See*—
Mohawk Condensed Milk Co.
Caron Corp.: *See*—
Daltroff, E., et Cie.
Carpenter Steel Co., The, to Carpenter Technology Corp., Reading, Pa. 508,902–3, ren. 5–27–69. Cl. 14.
Carpenter Technology Corp.: *See*—
Carpenter Steel Co., The.
Cartan Travel Bureau, Inc., Chicago, Ill. 870,245, pub. 3–11–69. Cl. 105.
Carter Diamond Tool Corp., Willoughby, Ohio. 870,043, pub. 3–11–69. Cl. 23.
Carter-Wallace, Inc., New York, N.Y., from Lambert-Kay, Inc., Los Angeles, Calif. 869,876–7, pub. 1–14–69. Cl. 3.
Cartuchos Deportivos de Mexico, S.A., Tepoztlan, Morelos, Mexico. 869,907–8, pub. 3–11–69. Cl. 9.
Casco Products Corp., Bridgeport, Conn. 870,168, pub. 3–11–69. Cl. 44.
Cavendish Import Corp., New York, N.Y. 870,273. Cl. 49.
Chafvin, Harry H., Jr.: *See*—
Brand X Corp., The.
Chesebrough-Pond's Inc.: *See*—
Vick Chemical Co.
Chunky Corp., The, New York, N.Y. 870,272. Cl. 46.
Churchill Chemical Co., Galesburg, Ill. 869,879, pub. 2–18–69. Cl. 4.
Ciba Corp.: *See*—
Ciba Ltd.
Ciba Ltd., Basle, Switzerland, to Ciba Corp., Summit, N.J. 442,493, ren. 5–27–69. Cl. 5.
Civic Promotions, Inc., Kansas City, Mo. 870,239, pub. 3–11–69. Cl. 101.
Clairol Inc., New York, N.Y. 870 216, pub. 3–11–69. Cl. 51.
Close-Up, Inc., New York, N.Y. 870,122, pub. 3–11–69. Cl. 38.
Coca Cola Co., The: *See*—
Salter Canning Co.
Cole, James H., Charlotte, N.C. 870,214, pub. 3–11–69. Cl. 51.
Cole Pharmacal Co., Inc., St. Louis, Mo. 869,955, pub. 3–11–69. Cl. 18.
Colgate-Palmolive Co., New York, N.Y. 869 962, pub. 3–11–69. Cl. 18.
Collins Co., The, Collinsville, to The Stanley Works, New Britain, Conn. 70,752, ren. 5–27–69. Cl. 23.
Collision Bros., Philadelphia, Pa. 746,599. canc. Cl. 28.
Colonial Dames Co., Ltd., Montebello, Calif. 747,955, canc. Cl. 51.
Colt's Inc., Hartford, Conn. 870,006, pub. 3–11–69. Cl. 22.
Columbia Broadcasting System, Inc., New York, N.Y. 870,256, pub. 3–11–69. Cl. 107.
Columbia Diamond Ring Co., Inc.: *See*—
Blancard & Co., Inc.
Commodore Corp., The, Omaha, Nebr. 869,974, pub. 3–11–69. Cl. 19.
Cone Mills Corp., Greensboro, N.C., from Cone Mills Inc., New York, N.Y. 870,151, pub. 3–11–69. Cl. 42.
Cone Mills Inc.: *See*—
Cone Mills Corp.
Conover, C. E., & Co., Inc., Fairfield, N.J. 861,033. Am. 7(d). Cl. 35.
Conrac Corp., New York, N.Y. 870,152–3, pub. 3–11–69. Cl. 44.
Conroe Creosoting Co., Conroe, Tex. 512,883, ren. 5–27–69. Cl. 12.
Continental Industries, Inc., Phoenix, Ariz. 747,802, canc. Cl. 15.
Conwood Corp., Memphis, Tenn. 869,881, pub. 3–11–69. Multiple Class (Classes 4, 6, and 46).
Cooper Tire & Rubber Co., Findlay, Ohio. 511,121, ren. 5–27–69. Cl. 35.
Coors, H. F., Co., Inc., Inglewood, Calif. 870,098, pub. 3–11–69. Cl. 39.
Corn Products Co.: *See*—
Corn Products Refining Co.
Corn Products Refining Co., Jersey City, N.J., and New York, N.Y., to Corn Products Co., Englewood Cliffs, N.J. 71,656, ren. 5–27–69. Cl. 5.
Corn Products Refining Co., Jersey City, N.J., and New York, N.Y., to Corn Products Co., Englewood Cliffs, N.J. 72,187, ren. 5–27–69. Cl. 46.
CO_2 Fire Equipment Co., to Norris Industries, Inc., Los Angeles, Calif. 256,790, ren. 5–27–69. Cl. 23.
Crane Engineering Co., Inc., Hallandale, Fla. 870,055, pub. 3–11–69. Cl. 23.
Crawford Mfg. Co., Inc., Richmond, Va. 514,497, ren. 5–27–69. Cl. 19.
Crescent Distributing Co.: *See*—
G-W Food Products Corp.
Cresta Blanca Wine Co., Oakland, Calif., to Schenley Industries, Inc., New York, N.Y. 257,256, ren. 5–27–69. Cl. 47.
Crosby Steam Gage & Valve Co., Boston, to Crosby Valve & Gage Co., Wrentham, Mass. 260,087, ren. 5–27–69. Cl. 13.
Crosby Valve & Gage Co.: *See*—
Crosby Steam Gage & Valve Co.
Crown Radio Corp., Tokyo, Japan. 869,977, pub. 3–11–69. Cl. 21.
Cummins Engine Co., Inc., Columbus, Ind. 870,047, pub. 3–11–69. Cl. 23.
Currier Mfg. Co., St. Paul, Minn. 511,153, ren. 5–27–69. Cl. 32.
Daido Corp., North Bergen, N.J. 870,054, pub. 3–11–69. Cl. 23.
Daltroff, E., et Cie, d.b.a. Parfumerie Caron, to Caron Corp. of New York, N.Y., Paris, France, to Caron Corp., New York, N.Y. 257,147, ren. 5–27–69. Cl. 51.
Dana, William B., Co., New York, N.Y. 870,120, pub. 3–11–69. Cl. 38.
Daniels, Robert, & Co., Inc.: *See*—
Ormont Drug & Chemical Co. Inc.
Data Resolved Tools Pty Ltd., Plympton, South Australia, Australia. 870,069, pub. 3–11–69. Cl. 26.
Davey's Inc., from C. E. Herwitz, Worcester, Mass 747,774, canc. Cl. 3.
Dawbarn Bros., Inc., Waynesboro, Va. 747,918, canc. Cl. 43.
Deal, Seraph J., Philadelphia, Pa., to Bristol-Myers Co., New York, N.Y. 72,837, ren. 5–27–69. Cl. 51.
Debbie Ann Goodies: *See*—
G-W Food Products Corp.
Dehydag Deutsche Hydrierwerke G.m.b.H., Dusseldorf, Germany. 869,892, pub. 3–11–69. Cl. 6.
De La Salle Institute, Rheem Valley, Calif. 870,198–9, pub. 3–11–69. Cl. 47.
Del Laboratories, Inc., Farmingdale, from American Home Products Corp., New York, N.Y. 869,934, pub. 2–7–67. Cl. 18.
Del Monte Corp.: *See*—
Griffin & Skelley Co.
Dental Perfection Co., Inc., Glendale, Calif. 747,919, canc. Cl. 44.
Denticator Co., Inc., The, San Francisco, Calif. 870,163, pub. 1–7–69. Cl. 44.
Dermik Laboratories, Inc., Syosset, N.Y. 869,938, pub. 3–11–69. Cl. 18.
Dia-Chrome Co.: *See*—
Dia-Chrome, Inc.
Dia-Chrome, Inc., d.b.a. Dia-Chrome Co., Glendale, Calif. 870,050, pub. 3–11–69. Cl. 23.
Diamond Alkali Co., to Diamond Shamrock Corp., Cleveland, Ohio. 513,196, ren. 5–27–69. Cl. 6.
Diamond Shamrock Corp.: *See*—
Diamond Alkali Co.
Dick, A. B., Co., Niles, Ill. 870,079, pub. 12–10–68. Cl. 26.
Di Leo, Lewis, d.b.a. Lew Di Leo, Philadelphia, Pa. 864,389, cor. Cl. 107.
Dixon, Joseph, Crucible Co., The: *See*—
American Crayon Co., The.
Dolge, C. B., Co., The, Westport, Conn. 869,883, pub. 3–11–69. Cl. 6.
Draper Corp., Portland, Maine, and Hopedale, Mass., to North American Rockwell Corp., Pittsburgh, Pa. 512,721, ren. 5–27–69. Cl. 23.
Drexel Enterprises, Inc., from Drexel Enterprises, Inc., Drexel, N.C. 870,102, pub. 3–11–69. Cl. 32.
Du Pont de Nemours, E. I., & Co.: *See*—
Grasselli Chemical Co., The.
Du Pont de Nemours, E. I., & Co., Wilmington, Del. 259,006, ren. 5–27–69. Cl. 6.
Duralac Chemical Corp., Newark, N.J. 258,580, ren. 5–27–69. Cl. 12.
Eagle Druggists Supply Co., Inc., New York, N.Y. 870,164, pub. 3–11–69. Cl. 44.

Eagle-Picher Industries, Inc., Cincinnati, Ohio. 869,995, pub. 3–11–69. Cl. 21.
Eaton Yale & Towne Inc., Cleveland, Ohio. 869,920, pub. 3–11–69. Cl. 13.
Eberhard Faber Inc.: *See*—
Eberhard Faber Pencil Co.
Eberhard Faber Pencil Co., Brooklyn, N.Y., to Eberhard Faber Inc., Wilkes-Barre, Pa. 509,669, ren. 5–27–69. Cl. 37.
Ekco Products, Inc.: *See*—
Katzinger, Edward, Co.
Eloesser-Heynemann Co., South San Francisco, Calif. 74,923, ren. 5–27–69. Cl. 39.
Emhart Corp.: *See*—
Rhodes, J. C., & Co. Inc.
English in Action, Inc., New York, N.Y. 870,251, pub. 3–11–69. Cl. 107.
Entwistle Mfg. Corp., Providence, R.I. 870,076, pub. 3–11–69. Cl. 26.
Equipment Digest Publishing Co., to The Penton Publishing Co., Cleveland, Ohio. 509,334, ren. 5–27–69. Cl. 38.
Erba, Carlo, S.p.A., Milan, Italy. 869,937, pub. 3–11–69. Cl. 18.
Esroiko A.G.: *See*—
Givaudan Corp.
Estancia Inc., New York, N.Y. 869,878, pub. 3–11–69. Cl. 3.
Etablissement Aesup, Vaduz, Liechtenstein. 870,060, pub. 3–11–69. Cl. 23.
Everest & Jennings, Inc., Los Angeles, Calif. 870,165–6, pub. 3–11–69. Cl. 44.
Everfast Fabrics, Inc., New York, N.Y. 507,409, ren. 5–27–69. Cl. 40.
Excello Cravats, Inc., New York, N.Y. 870,270. Cl. 39.
Excelsior Associates, Inc., New York, N.Y. 869,872, pub. 3–11–69. Cl. 3.
Expansion Products Co.: *See*—
Lindquist, Robert M. L.
Fairmont Foods Co., Omaha, Nebr. 870,195, pub. 3–11–69. Cl. 46.
Faultless Starch Co., Kansas City, Mo. 870,174–6, pub. 3–11–69. Cl. 45.
Feldmuhle Aktiengesellschaft, Dusseldorf-Oberkassel, Germany. 870,147, pub. 3–11–69. Cl. 42.
Ferrero, P., & C., S.p.A., Alba, Cuneo, Italy. 870,271. Cl. 46.
Fiberfil: *See*—
Rexall Drug & Chemical Co.
Fisher Cheese Co.: *See*—
Fisher Dairy & Cheese Co.
Fisher Dairy & Cheese Co., d.b.a. Koneta Foods Co., to Fisher Cheese Co., Wapakoneta, Ohio. 507,211, ren. 5–27–69. Cl. 46.
Fisher Radio Corp., Long Island City, N.Y. 869,996, pub. 3–11–69. Cl. 21.
Foremost-McKesson, Inc., d.b.a. McKesson Laboratories, New York, N.Y. 869,939, pub. 3–11–69. Cl. 18.
Fosseco International Ltd., Birmingham, England. 869,894, pub. 3–11–69. Cl. 6.
Fox, R., Trouser Mfg. Co., Philadelphia, Pa. 870,131, pub. 3–11–69. Cl. 39.
Friden, Inc., San Leandro, Calif. 747,851, canc. Cl. 26.
Fritzsche Brothers, Inc., New York, N.Y. 870,193, pub. 12–31–68. Cl. 46.
Funtime, Inc.: *See*—
Vesta Corp.
GAF Corp., from General Aniline & Film Corp., New York, N.Y. 869,873, pub. 3–11–69. Cl. 3.
G. & L. F. Lil Cora S.p.A. Turin, Italy, 870,274. Cl. 49.
G-W Food Products Corp., d.b.a. Crescent Distributing Co. and Debbie Ann Goodies, Mendon, Mich. 747,938, canc. Cl. 46.
Garland Co., The, to Garland Maintenance Products, Inc., Cleveland, Ohio. 257,053, ren. 5–27–69. Cl. 12.
Garland Maintenance Products: *See*—
Garland Co., The.
Gas Guard Corp. of America, Westmont, N.J. 870,000, pub. 3–11–69. Cl. 21.
Gazette Casuals Inc., New York, N.Y. 870,138, pub. 3–11–69. Cl. 39.
Geigy Chemical Corp., Ardsley, N.Y. 869,956, pub. 3–11–69. Cl. 18.
Gemco Electric Co., Clawson, Mich. 869,990, pub. 3–11–69. Cl. 21.
General Aniline & Film Corp., New York, N.Y. 747,786, canc. Cl. 6.
General Aniline & Film Corp.: *See*—
GAF Corp.
General Aniline & Film Corp., New York, N.Y. 747,964, canc. Cl. 52.
General Mills, Inc., Minneapolis, Minn. 870,197, pub. 3–11–69. Cl. 46.
General Time Corp., Stamford, Conn. 870,085–91, pub. 3–11–69. Cl. 27.
General Tire & Rubber Co.: *See*—
Pennsylvania Rubber Co.
General Tire & Rubber Co., The, Akron, Ohio. 513,580, ren. 5–27–69. Cl. 35.
Georgi Distilling Co.: *See*—
Black Prince Distillery, Inc.
Georgia International Life Insurance Co., Atlanta, Ga. 870,243, pub. 3–11–69. Cl. 102.
Georgia-Pacific Corp., Augusta, Ga. 869,912, pub. 3–11–69. Cl. 12.
Gerbing Mfg. Corp., Elgin, Ill. 870,058, pub. 3–11–69. Cl. 23.
Gernes Garment Co. Inc. The, to Gay Gibson, Inc., Kansas City, Mo. 510,093, ren. 5–27–69. Cl. 39.
Gibson, Gay, Inc.: *See*—
Gernes Garment Co. Inc., The.
Gildea, Joseph J., Villanova, Pa. 870,100, pub. 3–11–69. Cl. 32.
Gillette Co., The, d.b.a. The Toni Co., Boston, Mass. 870,220, pub. 3–11–69. Cl. 51.
Givaudan Corp., Clifton, N.J., from Esroiko A.G., Dubendorf, Switzerland. 869,891, pub. 3–11–69. Cl. 6.
Glassine & Greaseproof Manufacturers Association, The, New York, N.Y. 512,638, ren. 5–27–69. Cl. 37.
Gleema Co., The: *See*—
Brand X Corp., The.
Golbus-Werke Fritz Schuls Jun. Neuburg/Donau (Bavaria), Germany. 869,898, pub. 3–11–69. Cl. 6.
Gold Eagle Products Co.: *See*—
Winkenweder & Ladd, Inc.
Golding Bros. Co., Inc., to W. R. Grace & Co., New York, N.Y. 512,257, ren. 5–27–69. Cl. 42.
Goodrich, B. F., Co., The: *See*—
Hood Rubber Co.
Sponge Rubber Products Co., The.
Goodrich, B. F., Co., The, Akron, Ohio. 747,871, canc. Cl. 35.
Gorham Associates, Inc., Boston, Mass. 747,911, canc. Cl. 40.
Goya Foods Inc., Brooklyn, N.Y. 870,194, pub. 3–11–69. Cl. 46.
Graber, C. C., Co., to C. C. Graber Co., Ontario, Calif. 508,371, ren. 5–27–69. Cl. 46.
Grace, W. R., & Co.: *See*—
Golding Bros Co., Inc.
Grace, W. R., & Co., New York, N.Y. 869,893, pub. 3–11–69. Cl. 6.
Grace, W. R., & Co., Cambridge, Mass. 869,914, pub. 3–11–69. Cl. 12.
Grasselli Chemical Co., The, Cleveland, Ohio, to E. I. du Pont de Nemours and Co., Wilmington, Del. 257,094, ren. 5–27–69. Cl. 52.
Great Atlantic & Pacific Tea Co., The, to The Great Atlantic & Pacific Tea Co., Inc., New York, N.Y. 506,965, ren. 5–27–69. Cl. 46.
Great Atlantic & Pacific Tea Co., The, to The Great Atlantic & Pacific Tea Co., Inc., New York, N.Y. 507,882, ren. 5–27–69. Cl. 46.
Great Atlantic & Pacific Tea Co., Inc., The: *See*—
Great Atlantic & Pacific Tea Co., The.
Griffin Pipe Products Co., Wheaton, Ill. 747,792, canc. Cl. 12.
Griffin & Skelley Co., to Del Monte Corp., San Francisco, Calif. 72,903, ren. 5–27–69. Cl. 46.
Griffin & Skelley Co., to Del Monte Corp., San Francisco, Calif. 73,005, ren. 5–27–69. Cl. 46.
Grigor, William, & Son Ltd., Inverness, Scotland. 747,948, canc. Cl. 49.
Guinness, Arthur, Son & Co. Ltd., London, England. 870,202, pub. 3–11–69. Cl. 48.
Gulf States Paper Corp., Tuscaloosa, Ala. 870,262. Cl. 2.
Gustin Guild-Rest, Inc., New York, N.Y., to Gustinettes Sales Corp., Paterson, N.J. 507,206, ren. 5–27–69. Cl. 39.
Gustinettes Sales Corp.: *See*—
Gustin Guild-Rest, Inc.
HF Image Systems, Inc., Culver City, from Houston Fearless Corp., Los Angeles, Calif. 869,979, pub. 3–11–69. Cl. 21.
Hardware & Industrial Tool Co. Inc., Philadelphia, Pa. 869,969, pub. 3–11–69. Cl. 19.
Harris Calorific Co., The, Cleveland, Ohio. 869,922, pub. 1–21–69. Cl. 13.
Harts Mountain Products Corp., New York, N.Y. 869,941, pub. 3–11–69. Cl. 18.
Harvest Publishing Co., The: *See*—
Capper-Harman-Slocum, Inc.
Hasbro Industries, Inc., from Hassenfeld Bros. Inc., Pawtucket, R.I. 870,024–31, pub. 3–11–69. Cl. 22.
Hask Toiletries, Inc., Great Neck, N.Y. 870,213, pub. 3–11–69. Cl. 51.
Hassenfeld Bros. Inc.: *See*—
Hasbro Industries, Inc.
Hastings & Co., Inc., Philadelphia, Pa. 869,862, pub. 3–11–69. Cl. 1.
Head Ski Co., Inc., Timonium, Md. 845,830, cor. Cl. 22.
Hearst Corp., The: *See*—
King Features Syndicate, Inc.
Herwitz, Chester E.: *See*—
Davey's Inc.
Hettrick Mfg. Co., The, Toledo, Ohio, to The Hettrick Mfg. Co., Statesville, N.C. 258,439, ren. 5–27–69. Cl. 39.
Hewitt Soap Co., Inc., The: *See*—
Procter & Gamble Co., The.
Highlands Briar Inc., Kew Gardens, N.Y. 869,906, pub. 3–11–69. Cl. 8.
Hillerich & Bradsby Co., Louisville, Ky. 511,742, ren. 5–27–69. Cl. 22.
Hillerich & Bradsby Co., Louisville, Ky. 512,675, ren. 5–27–69. Cl. 22.
Hillstrom Enterprises, Inc., Chicago, Ill. 870,135, pub. 3–11–69. Cl. 39.
Hodgson, Marley, Ltd., Chicago, Ill. 870,242, pub. 3–11–69. Cl. 101.
Hoffmann-La Roche Inc., Nutley, N.J. 870,155, pub. 3–11–69. Cl. 44.
Holbrook-Patterson, Inc., Coldwater, Mich. 870,008, pub. 3–11–69. Cl. 22.
Holiday Designs, Inc., Sebring, Ohio. 870,096, pub. 8–16–66. Multiple Class (Classes 30 and 50).
Hollingsworth & Vose Co., East Walpole, Mass. 254,797, ren. 5–27–69. Cl. 37.
Hollingsworth & Vose Co., East Walpole, Mass. 507,494, ren. 5–27–69. Cl. 37.
Holmes, Ernest, Co., Chattanooga, Tenn. 740,555. Am. 7(d). Cl. 23.
Hood Rubber Co., Watertown, Mass., to The B. F. Goodrich Co., Akron, Ohio. 260,854, ren. 5–27–69. Cl. 39.
Hoover Co., The, to The Hoover Co., North Canton, Ohio. 510,519, ren. 5–27–69. Cl. 21.

Houston Fearless Corp.: *See*—
HF Image Systems, Inc.
Howze & Associates, Inc., Tampa, Fla. 870,238, pub. 3–11–69. Cl. 101.
Huber, J. M., Corp., Borger, Tex. 507,848, ren. 5–27–69. Cl. 1.
Huber, J. M., Corp., Borger, Tex. 869,860, pub. 3–11–69. Cl. 1.
Hudnut, Richard, Morris Plains, N.J. 747,953, canc. Cl. 51.
Hudnut, Richard, Morris Plains, N.J. 870,206, pub. 3–11–69. Cl. 51.
Hules Mexicanos S.A., Reynosa, Tamaulipas, Mexico. 869,861, pub. 3–11–69. Cl. 1.
Humble Oil & Refining Co.: *See*—
West India Oil Co.
Pate Oil Co.
I.M.C. Inc., d.b.a. IMCO Plastics Division, Elkhart, Ind. 869,911, pub. 3–11–69. Multiple Class (Classes 12 and 32).
IMCO Plastics Division: *See*—
I.M.C. Inc.
Ideal Publishing Corp., New York, N.Y. 513,829, ren. 5–27–69. Cl. 38.
Illinois Tool Works Inc., Chicago, Ill. 870,052, pub. 3–11–69. Cl. 28.
Imperial Shirt Corp., New York, N.Y. 747,901, canc. Cl. 39.
Inda Oy, Helsinki, Finland. 870,212, pub. 3–11–69. Cl. 51.
Industrial Brush Co., Arcadia, Calif. 869,854, pub. 4–16–68. Cl. 1.
Industrial Identification Systems Ltd., Beachville, Ontario, Canada. 747,822, canc. Cl. 21.
Integral Engineering & Mfg. Corp., Detroit, Mich. 870,004, pub. 3–11–69. Cl. 32.
International Corset Co., Aurora, Ill., to Le Monde Corset Co., Saginaw, Mich. 72,870, ren. 5–27–69. Cl. 39.
International Dioxide, New York, N.Y. 869,885, pub. 3–11–69. Cl. 6.
International Paint Co., Inc., New York, N.Y. 512,242, ren. 5–27–69. Cl. 16.
International Paint Co., Inc., New York, N.Y. 513,313, ren. 5–27–69. Cl. 16.
International-Giftime, Inc., Leominster, Mass. 869,919, pub. 3–11–69. Cl. 18.
Inter-Varsity Christian Fellowship of The United States of America, Chicago, Ill. 870,119, pub. 3–11–69. Cl. 38.
J.W. Records: *See*—
White, Jack E.
Jo-An Shoe Mfg. Co., Inc., The, Paterson, N.J. 870,127, pub. 3–11–69. Cl. 39.
Johnson Corp., The, Monroeville, Ind. 869,971, pub. 3–11–69. Cl. 19.
Johnson Motor Co., to Outboard Marine Corp., Waukegan, Ill. 259,154, ren. 5–27–69. Cl. 23.
Kabushiki Kaisha Sankei Seisakusho, d.b.a. Sankei Mfg. Co., Tokyo-to, Japan. 870,111, pub. 3–11–69. Cl. 36.
Kaiser Aluminum & Chemical Corp.: *See*—
Mexico Refractories Co.
Katona Metal Fabricators Inc., Ossining, N.Y. 870,105, pub. 3–11–69. Cl. 34.
Katona Metal Fabricators Inc., Ossining, N.Y. 870,107, pub. 3–11–69. Cl. 34.
Katzinger, Edward Co., Chicago, to Ekco Products, Inc., Wheeling, Ill. 252,975, ren. 5–27–69. Cl. 13.
Kaxmark, Eugene, d.b.a. Remin Laboratories, Joliet, Ill. 870,181, pub. 7–4–67. Cl. 46.
Kelite Chemicals Corp., Los Angeles, Calif. 870,224, pub. 3–11–69. Cl. 52.
Kelvinator, Inc.: *See*—
Altorfer Bros. Co.
Kickaway Corp., New York, N.Y. 870,132, pub. 3–11–69. Cl. 39.
Kiefer, Adolph, & Co., Glenview, Ill. 747,825, canc. Cl. 22.
Kimberly-Clark Corp., Neenah, Wis. 869,856, pub. 1–14–69. Cl. 1.
Kimberly-Clark Corp., Neenah, Wis. 869,871, pub. 3–11–69. Cl. 2.
King Features Syndicate, Inc., to The Hearst Corp., New York, N.Y. 258,097, ren. 5–27–69. Cl. 38.
Kingston Co., The: *See*—
Topco Associates, Inc.
Kismet Ltd.: *See*—
Turner, William, (Kismet) Ltd.
Koneta Foods Co.: *See*—
Fisher Dairy & Cheese Co.
Koppers Co., Inc., Pittsburgh, Pa. 869,931, pub. 3–11–69. Cl. 16.
Kwan Yick Fireworks Co.: *See*—
Tang Kuen Hung.
L.K.R. Chemical Products Corp., Detroit, Mich. 747,949, canc. Cl. 50.
Laboratorios Dida Ltd., Guatemala, Guatemala. 869,959, pub. 3–11–69. Cl. 18.
Lambert-Kay, Inc.: *See*—
Carter-Wallace, Inc.
Landberg, Bo, & Co., AB., Ormaryd, Sweden. 870,095, pub. 3–11–69. Multiple Class (Classes 29 and 52).
Lander Co., Inc.: *See*—
Lander Co. Inc., The.
Lander Co. Inc., The, to Lander Co., Inc., New York, N.Y. 441,756, ren. 5–27–69. Cl. 51.
Lane Magazine & Book Co.: *See*—
Sunset Magazine, Inc.
Leban Imports, Inc., Baltimore, Md. 870,115, pub. 3–11–69. Cl. 36.
Le Monde Corset Co.: *See*—
International Corset Co.
Lentheric, Inc., to Lentheric Inc., New York, N.Y. 253,209, ren. 5–27–69. Cl. 52.
Leupold & Stevens Instruments, Inc., Portland, Oreg. 870,081, pub. 3–11–69. Cl. 26.
Levy, Donald M., Hollywood, Calif. 870,101, pub. 3–11–69. Cl. 32.
Lilly, Eli, & Co., Indianapolis, Ind. 288,422, canc. Cl. 18.
Lily-Tulip Cup Corp., assignee of Universal Paper Products Co., Chicago, Ill., to Owens-Illinois, Inc., New York, N.Y. 507,533, ren. 5–27–69. Cl. 2.
Lindquist, Robert M. L., d.b.a. Expansion Products Co., Minneapolis, Minn. 870,051, pub. 3–11–69. Cl. 23.
Lindroth, Clifford A., San Diego, Calif. 870,005, pub. 3–11–69. Cl. 22.
Logetronics, Inc., Springfield, Va. 870,124, pub. 3–11–69. Cl. 38.
Logistics Industries Corp.: *See*—
National Metal Edge Box Co.
Longeri, Paul, New York, N.Y. 747,952, canc. Cl. 50.
Lonn Industries Ltd., Montreal, Quebec, Canada. 870,137, pub. 3–11–69. Cl. 39.
Louket Markets, Inc.: *See*—
Supermarkets General Corp.
Lustrum, Inc., Reading, Pa. 869,985, pub. 12–31–68. Cl. 21.
Maas & Waldstein Co., Newark, N.J. 513,297, ren. 5–27–69. Cl. 16.
Maas & Waldstein Co., Newark, N.J. 513,299–300, ren. 5–27–69. Cl. 16.
Mackintosh-Hemphill Co., to E. W. Bliss Co., Pittsburgh, Pa. 442,259, ren. 5–27–69. Cl. 23.
Madison Square Garden Corp., New York, N.Y. 870,255, pub. 3–11–69. Cl. 107.
Magruder Color Co., Inc., Newark, N.J. 512,588, ren. 5–27–69. Cl. 11.
Major-prodotti Dentari-Societa in Nome Collettivo di Renaldo Giovanni & Figli, Turin, Italy. 870,160, pub. 3–11–69. Cl. 44.
Mallard Coach Corp., West Bend, Wis. 869,973, pub. 3–11–69. Cl. 19.
Mallinckrodt Chemical Works, St. Louis, Mo. 512,992, ren. 5–27–69. Cl. 6.
Malt-A-Plenty, Inc., Tulsa, Okla. 507,914, ren. 5–27–69. Cl. 46.
Manleigh, Inc., Providence, R.I. 747,861, canc. Cl. 28.
Many, Blanc & Co., Inc., Chicago, Ill., to Schenley Industries, Inc., New York, N.Y. 511,136, ren. 5–27–69. Cl. 49.
Mars Signal-Light Co., Chicago, Ill. 512,476, ren. 5–27–69. Cl. 21.
Marshall, William L., Ltd., New York, N.Y. 869,915, pub. 3–11–69. Cl. 12.
Mastandrea, Peter J., d.b.a. Mastandrea Studio, New York, N.Y. 870,241, pub. 3–11–69. Cl. 101.
Mastandrea Studio: *See*—
Mastandrea, Peter J.
Matchless Metal Polish Co., The, Chicago, Ill. 513,968, ren. 5–27–69. Cl. 4.
Matsos, Michael C., d.b.a. Michael's Enterprises, Birmingham, Ala. 870,229, pub. 3–11–69. Cl. 100.
Mattel, Inc., Hawthorne, Calif. 870,035–7, pub. 3–11–69. Cl. 22.
Mazur, George Enterprises, Inc., Washington, D.C. 870,186, pub. 3–11–69. Multiple Class (Classes 46 and 101).
McCall Corp., New York, N.Y., from Elsie Millray Ames, Kaneohe, Hawaii. 870,064, pub. 3–11–69. Cl. 26.
McCullough Tool Co., Los Angeles, Calif. 508,658, ren. 5–27–69. Cl. 100.
McDonald Products Corp., Buffalo, N.Y. 869,904, pub. 3–11–69. Multiple Class (Classes 8 and 32).
McGraw-Edison Co., Elgin, Ill. 870,038, pub. 3–11–69. Cl. 23.
McGraw-Edison Co., Elgin, Ill. 870,065–8, pub. 3–11–69. Cl. 26.
McGraw-Hill, Inc., New York, N.Y. 870,269. Cl. 38.
McKesson Laboratories: *See*—
Foremost-McKesson, Inc.
Mead Johnson & Co., to Mead Johnson & Co., Evansville, Ind. 507,135, ren. 5–27–69. Cl. 18.
Mediterranean Importing Co., Inc., d.b.a. Mediterranean Wines, Long Island City, N.Y. 870,200–1, pub. 3–11–69. Cl. 47.
Mediterranean Wines: *See*—
Mediterranean Importing Co., Inc.
Mennen Co., The, Morristown, N.J. 508,548, ren. 5–27–69. Cl. 51.
Mennen Co., The, Morristown, N.J. 870,211, pub. 3–11–69. Cl. 51.
Mennen Co., The, Morristown, N.J. 870,215, pub. 3–11–69. Cl. 51.
Merck & Co., Inc., Rahway, N.J. 869,899, pub. 3–11–69. Cl. 6.
Merck & Co., Inc., Rahway, N.J. 869,943–4, pub. 3–11–69. Cl. 18.
Merlite Industries, Inc., New York, N.Y. 870,177, pub. 3–11–69. Cl. 45.
Metalart Jewelers, Inc., New York, N.Y. 747,862, canc. Cl. 28.
Mexico Refractories Co., Mexico, Mo., to Kaiser Aluminum & Chemical Corp., Oakland, Calif. 507,667, ren. 5–27–69. Cl. 12.
Micha, Peter, Richmond Hill, Ontario, Canada. 869,978, pub. 3–11–69. Multiple Class (Classes 21 and 26).
Michael's Enterprises: *See*—
Matsos, Michael C.
Microwave Development Laboratories, Inc., Needham Heights, Mass. 869,999, pub. 3–11–69. Cl. 21.
Midland-Ross Corp., Cleveland, Ohio. 869,968, pub. 3–11–69. Cl. 19.
Milchem Inc., Houston, Tex. 869,900, pub. 3–11–69. Cl. 6.
Miller, G. S., Co.: *See*—
Miller, Louise S.
Miller, Louis, New York, N.Y. 747,859, canc. Cl. 28.
Miller, Louise S., d.b.a. G. S. Miller Co., Sheffield, Mass., to D. W. Thompson, d.b.a. G. S. Miller Co., Treasure Island, Ga. 441,474, ren. 5–27–69. Cl. 15.

Miller Mfg. Co., Inc., Durham, N.C. 869,966, pub. 1–14–69. Multiple Class (Classes 19 and 28).
Mimeles, W., Co., Inc., d.b.a. Torino Mfg. Co., New Orleans, La. 869,875, pub. 3–11–69. Multiple Class (Classes 3 and 39).
Miss Pat, Los Angeles, Calif. 870,184, pub. 3–11–69. Cl. 39.
Misugaki, Toshimasa, Kobe, Japan. 870,184, pub. 3–11–69. Cl. 46.
Modern Maid, Inc., Chattanooga, Tenn. 870,266. Cl. 34.
Mohawk Condensed Milk Co., Rochester, N.Y., to Carnation Co., Los Angeles, Calif. 71,531, ren. 5–27–69. Cl. 46.
Molex Products Co., Downers Grove, Ill. 869,986, pub. 12–3–68. Cl. 21.
Monterey Mills, Inc., Janesville, Wis. 870,159, pub. 3–11–69. Cl. 44.
Morrow, D. B., Inc., Wichita Falls, Tex. 761,097, cor. Cl. 1.
Munsingwear, Inc., Minneapolis, Minn. 870,150, pub. 3–11–69. Cl. 42.
Murray Co. of Texas, Inc.: *See*—
Murray Co., The.
Murray Co., The, Dallas, Tex., to Murray Co. of Texas, Inc., Pittsburgh, Pa. 514,042, ren. 5–27–69. Cl. 23.
Murray, D. J., Mfg. Co., to Murray Machinery, Inc., Wausau, Wis. 512,741, ren. 5–27–69. Cl. 34.
Murray Machinery, Inc.: *See*—
Murray, D. J., Mfg. Co.
National Biscuit Co.: *See*—
Vita Food Products Co.
National Carbon Co., Inc., to Union Carbide Corp., New York, N.Y. 442,867, ren. 5–27–69. Cl. 21.
National Carbon Co., Inc., to Union Carbide Corp., New York, N.Y. 443,089, ren. 5–27–69. Cl. 26.
National Carbon Co., Inc., to Union Carbide Corp., New York, N.Y. 509,456, ren. 5–27–69. Cl. 21.
National Chemical Laboratories of Pennsylvania, Inc., Philadelphia, Pa. 870,222, pub. 3–11–69. Cl. 52.
National Dairy Products Corp., Chicago, Ill. 870,190, pub. 1–14–69. Cl. 46.
National Educational Television & Radio Center, from National Educational Television & Radio Center and Westinghouse Broadcasting Co., Inc., New York, N.Y. 870,249, pub. 9–22–64. Cl. 107.
National Educational Television & Radio Center and Westinghouse Broadcasting Co., Inc.: *See*—
National Educational Television & Radio Center.
National Geographic Society, Washington, D.C. 509,970, ren. 5–27–69. Cl. 107.
National Metal Edge Box Co., to Logistics Industries Corp., Philadelphia, Pa. 257,970, ren. 5–27–69. Cl. 37.
National Science Network, Inc., The, New York, N.Y. 870,252–8, pub. 3–11–69. Cl. 107.
National Sugar Refining Co., The, New York, N.Y. 870,178, pub. 3–11–69. Cl. 45.
Nestle Co., Inc., The: *See*—
Nestle's Milk Products, Inc.
Nestle's Milk Products, Inc., now by change of name The Nestle Co., Inc., New York, to The Nestle Co., Inc., White Plains, N.Y. 442,720, ren. 5–27–69. Cl. 46.
New York Snacktime, Inc., New York, N.Y. 870,189, pub. 3–11–69. Cl. 46.
Newport Opti-Sonics Co., Newport Beach, Calif. 870,034, pub. 3–11–69. Cl. 22.
Nippon Kogaku Kabushiki Kaisha, Tokyo, Japan. 870,264. Cl. 26.
Nordex Industries, Zenda, Wis., from H. E. Peterson, Crystal Lake, Ill. 869,965, pub. 3–11–69. Cl. 19.
Norris Industries, Inc.: *See*—
CO_2 Fire Equipment Co.
North American Dye Corp., Mount Vernon, N.Y., to North American Dye Corp., Danbury, Conn. 502,438, ren. 5–27–69. Cl. 6.
North American Rockwell Corp.: *See*—
Draper Corp.
North American Rockwell Corp., Pittsburgh, Pa. 869,967, pub. 12–31–68. Cl. 19.
Northwest Handicapped Sales, Inc., Seattle, Wash. 869,994, pub. 3–11–69. Cl. 21.
Northwest Paper Co., The, Cloquet, Minn. 870,268. Cl. 37.
Northwestern Golf Co., Chicago, Ill. 870,018, pub. 3–11–69. Cl. 22.
Northwestern Golf Co., Chicago, Ill. 870,021–2, pub. 3–11–69. Cl. 22.
Norton Oglebay, Co., Cleveland, Ohio. 870,045, pub. 3–11–69. Cl. 23.
Nye, Ben, Inc., West Hollywood, Calif. 870,219, pub. 3–11–69. Cl. 51.
Nylene Corp., from Palmetto Plastics, Inc., Jenkinsville, S.C. 869,859, pub. 12–31–68. Cl. 1.
Oakland Corp., Troy, Mich. 869,924, pub. 3–11–69. Cl. 13.
Oceana Tool Mfg. Co.: *See*—
Stercal, Inc.
Ohio Art Co., The, Bryan, Ohio. 870,113, pub. 3–11–69. Cl. 36.
Old Mansion, Inc.: *See*—
Bowers Brothers, Inc.
Old 97 Co., to Old 97 Co., Tampa, Fla. 509,748, ren. 5–27–69. Cl. 18.
Oldmill Paper Products Corp., Long Island City, N.Y. 255,940, ren. 5–27–69. Cl. 2.
Olivetti Underwood Corp., New York, N.Y. 870,062, pub. 3–11–69. Cl. 28.
Outboard Marine Corp.: *See*—
Johnson Motor Co.
Open Road International, Inc., St. Louis, Mo. 870,246–7, pub. 3–11–69. Cl. 105.
Optical Development Corp., Chicago, Ill. 747,852, canc. Cl. 26.
Ore-Ida Foods, Inc., Ontario, Oreg. 870,183, pub. 11–22–66. Cl. 46.
Ormont Drug & Chemical Co. Inc., Long Island City, N.Y., to Robert Daniels & Co., Inc., Moonachie, N.J. 442,092, ren. 5–27–69. Cl. 18.
Osborn, C. J., Co., Linden, N.J. 513,674, ren. 5–27–69. Cl. 16.
Osborn Mfg. Co., The: *See*—
Sherwin-Williams Co., The.
Owens-Illinois, Inc.: *See*—
Lily-Tulip Cup Corp.
Paillard Inc., Linden, N.J. 870,080, pub. 12–24–68. Cl. 26.
Palmetto Plastics, Inc.: *See*—
Nylene Corp.
Parfumerie Caron: *See*—
Daltroff, E., et Cie.
Paris Processing Corp., New York, N.Y. 870,248, pub. 3–11–69. Cl. 106.
Pate Oil Co., Milwaukee, Wis., to Humble Oil & Refining Co., Houston, Tex. 511,561, ren. 5–27–69. Cl. 15.
Patrician Products, Inc., Brooklyn, N.Y. 869,903, pub. 3–11–69. Cl. 7.
Pauli & Griffin Co., San Francisco, Calif. 870,040, pub. 3–11–69. Cl. 23.
Penegen Products Co.: *See*—
Beamon, Amos R.
Pennington Brothers, Inc., Muskegon, Mich. 747,972, canc. Cl. 103.
Pennsylvania Rubber Co., Jeannette, Pa., to The General Tire & Rubber Co., Akron, Ohio. 513,266, ren. 5–27–69. Cl. 22.
Penton Publishing Co., The: *See*—
Equipment Digest Publishing Co.
Perfax Corp., d.b.a. Perry-Sherwood Corp., Fort Lee, N.J. 869,886–7, pub. 3–11–69. Cl. 6.
Performance Incentives Corp., South Hackensack, N.J. 870,232, pub. 3–11–69. Cl. 101.
Perry-Sherwood Corp.: *See*—
Perfax Corp.
Perstorp Aktiebolag, Perstorp, Sweden. 869,855, pub. 3–11–69. Cl. 1.
Perstorp Aktiebolag, Perstorp, Sweden. 869,981, pub. 3–11–69. Cl. 21.
Perstorp Aktiebolag, Perstorp, Sweden. 870,039, pub. 3–11–69. Cl. 23.
Peterson, Herbert E.: *See*—
Nordex Industries.
Petrik, A. V., Co.: *See*—
Petrik, Albert V.
Petrik, Albert V., d.b.a. A. V. Petrik Co., Roslyn, Pa. 870,078, pub. 3–11–69. Cl. 26.
Pfizer, Chas., & Co., Inc., New York, N.Y. 869,963, pub. 3–11–69. Cl. 18.
Philadelphia Quartz Co., Philadelphia, Pa. 510,420, ren. 5–27–69. Cl. 6.
Phillips Petroleum Co., Bartlesville, Okla., from Sealright Co., Inc., Fulton, N.Y. 869,867, pub. 3–11–69. Cl. 2.
Phillips Petroleum Co., Bartlesville, Okla. 869,869, pub. 3–11–69. Cl. 2.
Phillips-Van Heusen Corp., New York, N.Y. 747,899, canc. Cl. 39.
Photostat Corp., Rochester, N.Y. 747,977, canc. Cl. 106.
Plaubert, Jeanne, (nee Jeanne Quanon), Paris, France. 507,575, ren. 5–27–69. Cl. 51.
Pickard, Inc., Antioch, Ill. 507,151, ren. 5–27–69. Cl. 30.
Pill & Puff, Inc., Milwaukee, Wis. 870,237, pub. 3–11–69. Cl. 101.
Pillsbury Co., The, Minneapolis, Minn. 870,187, pub. 9–17–68. Cl. 46.
Pittsburgh Steelers Sports, Inc., Pittsburgh, Pa. 870,257–8, pub. 3–11–69. Cl. 107.
Pivotract Corp., New York, N.Y. 869,970, pub. 3–11–69. Cl. 19.
Planet Hop Game Co., Ontario, Canada. 870,023, pub. 3–11–69. Cl. 22.
Polacoat Inc., Blue Ash, Ohio. 870,083, pub. 3–11–69. Cl. 26.
Printpack Inc., Atlanta, Ga. 870,117, pub. 3–11–69. Cl. 38.
Procter & Gamble Co., The, Cincinnati, to The Hewitt Soap Co., Inc., Dayton, Ohio. 507,571, ren. 5–27–69. Cl. 52.
Procter & Gamble Co., The, Cincinnati, Ohio. 747,958, canc. Cl. 52.
Q/A Co., Inc.: *See*—
Bonsall Frederick S.
Quincrafts Corp., Quincy, Mass. 870,205, pub. 3–11–69. Cl. 50.
Radiant Mfg. Corp., Morton Grove, Ill. 747,838, canc. Cl. 26.
Radiant Reality, Ltd., London, England. 747,892, canc. Cl. 38.
Ragu Packing Co., Inc., Rochester, N.Y. 870,188, pub. 3–11–69. Cl. 46.
Ralston Purina Co., St. Louis, Mo. 870,182, pub. 10–10–67. Cl. 46.
Random House, Inc., New York, N.Y. 870,125–6, pub. 3–11–69. Cl. 38.
Red Box Co. Ltd., Kennedy Town, Hong Kong. 870,001, pub. 3–11–69. Cl. 22.
Reid, Eugene G., d.b.a. Yardage Publications, Weston, Conn. 870,121, pub. 3–11–69. Cl. 38.
Reliable Automatic Sprinkler Co., Inc., Mount Vernon, N.Y. 714,319, Am. 7(d). Cl. 13.
Rembrandt Tobacco Corp. (Overseas) Ltd., Weinbergstrasse, Zurich, Switzerland. 869,933, pub. 3–11–69. Cl. 17.
Remin Laboratories: *See*—
Kaxmark, Eugene.
Rexall Drug & Chemical Co., d.b.a. Fiberfil, Los Angeles, Calif. 869,858, pub. 3–11–69. Cl. 1.
Rexall Drug & Chemical Co., d.b.a. The Seamless Rubber Co., Los Angeles, Calif. 870,007, pub. 3–11–69. Cl. 22.
Rexall Drug & Chemical Co., d.b.a. The Seamless Rubber Co., Los Angeles, Calif. 870,017, pub. 3–11–69. Cl. 22.

Rhodes, J. C., & Co. Inc., Boston, Mass., to Emhart Corp., Hartford, Conn. 256,432, ren. 5–27–69. Cl. 13.
Richardson-Merrell Inc., New York, N.Y. 869,960–1, pub. 3–11–69. Cl. 18.
Riegel Textile Corp., New York, N.Y. 507,192, ren. 5–27–69. Cl. 39.
Ringling Bros.-Barnum & Bailey Combined Shows, Inc., from Ringling Bros.-Barnum & Bailey Combined Shows, Inc., Washington, D.C. 870,254, pub. 3–11–69. Cl. 107.
Ro-Band Corp., Menomonee Falls, Wis. 870,057, pub. 3–11–69. Cl. 23.
Robbins & Myers, Inc., Springfield, Ohio. 509,839. Am. 7(d). Cl. 21.
Robin, A. H., Co., Inc., Richmond, Va. 870,191, pub. 3–11–69. Cl. 46.
Roch, Pierre, S.a.r.L., Rolle, Switzerland, to Alina Corp., Plainview, N.Y. 442,786, ren. 5–27–69. Cl. 26.
Rockwell Mfg. Co., Pittsburgh, Pa. 512,267, ren. 5–27–69. Cl. 26.
Rockwell Mfg. Co., Pittsburgh, Pa. 869,923, pub. 1–7–69. Cl. 13.
Rohm & Haas Co., to Rohm & Haas Co., Philadelphia, Pa. 253,662, ren. 5–27–69. Cl. 4.
Root, A. I., Co.: *See*—
Root, A. I., Co. of Texas, Inc.
Root, A. I., Co. of Texas, Inc., d.b.a. A. I. Root Co., and The Root Candle Co., San Antonio, Tex. 869,929, pub. 3–11–69. Cl. 15.
Root Candle Co., The: *See*—
Root, A. I., Co. of Texas, Inc.
Rosenthal & Rosenthal, Inc., New York, N.Y. 870,244, pub. 3–11–69. Cl. 102.
Ross Electronics Corp., Chicago, Ill. 869,987, pub. 3–11–69. Cl. 21.
Royal Industries, Inc., Pasadena, Calif. 869,917, pub. 12–3–68. Cl. 13.
Russell, Burdsall & Ward Bolt & Nut Co., Port Chester, N.Y. 869,926, pub. 3–11–69. Cl. 13.
Salter Canning Co., North Rose, N.Y., to The Coca Cola Co., Atlanta, Ga. 251,763, ren. 5–27–69. Cl. 46.
Sankei Mfg. Co.: *See*—
Kabushiki Kaisha Sankei Seisakusho.
Santee Sales Corp., Los Angeles, Calif. 870,143–5, pub. 3–11–69. Cl. 42.
Sargeant Acnoid Pharmaceutical Co. Inc., East Orange, N.J., to Sargeant Acnoid Pharmaceutical Co., Inc., Highland Mills, N.Y. 254,076, ren. 5–27–69. Cl. 18.
Sari, Ferenc, d.b.a. Sari Soap Co., Grand Rapids, Mich. 747,965, canc. Cl. 52.
Sari Soap Co.: *See*—
Sari, Ferenc.
Sceneville Musical Record Co., Queens, N.Y. 870,114, pub. 3–11–69. Cl. 36.
Schenley Industries, Inc.: *See*—
Cresta Blanca Wine Co.
Many, Blanc & Co., Inc.
Schieffelin & Co.: *See*—
Almay, Inc.
Schlieker, Willy H., K.G., Hamburg, Germany. 747,820, canc. Cl. 21.
Schlitz, Jos., Brewing Co., Milwaukee, Wis. 870,203, pub. 3–11–69. Cl. 48.
Schollie Container Corp., Northlake, Ill. 747,771, canc. Cl. 2.
Scientific Music Industries, Inc., Chicago, Ill. 870,110, pub. 3–11–69. Cl. 36.
Sealright Co., Inc.: *See*—
Phillips Petroleum Co.
Seamless Rubber Co., The: *See*—
Rexall Drug & Chemical Co.
Seitz Packing Co., Inc., St. Joseph, Mo. 443,202, ren. 5–27–69. Cl. 46.
Semans, Thomas B., Jr., Philadelphia, Pa. 870,014, pub. 3–11–69. Cl. 22.
Sharp Laboratories Inc., La Jolla, Calif. 747,840–4, canc. Cl. 26.
Sherwin-Williams Co., The, from The Osborn Mfg. Co., Cleveland, Ohio. 870,044, pub. 3–11–69. Cl. 23.
Shreveport Syrup Co., Inc., Shreveport, La., to A. E. Staley Mfg. Co., Decatur, Ill. 259,653, ren. 5–27–69. Cl. 46.
Shteinshleifer, Boris, d.b.a. N. L. Shteinshleifer Co., New York, N.Y. 870,094, pub. 3–11–69. Cl. 28.
Shteinshleifer, N. L., Co.: *See*—
Shteinshleifer, Boris.
Simoniz Co., Chicago, Ill. 870,227, pub. 12–17–68. Cl. 52.
Simplex Specialty Co., Inc., Hackensack, N.J. 870,073, pub. 3–11–69. Cl. 26.
Smith Kline & French Laboratories, Philadelphia, Pa. 869,964, pub. 3–11–69. Cl. 18.
Smith, Walter E., Caldwell, Idaho. 870,112, pub. 3–11–69. Cl. 36.
Snap-On Tools Corp., Kenosha, Wis. 869,928, pub. 3–11–69. Cl. 15.
Societa Anonima Isolabella & Figlio, to Societa per Azioni E. Isolabella & Figlio, Milan, Italy. 442,316, ren. 5–27–69. Cl. 49.
Societa per Azioni E. Isolabella & Figlio: *See*—
Societa Anonima Isolabella & Figlio.
Societe de Filature, Anciens Etablissements, Jules de Surmont & Fils, Societe Anonyme, Tourcoing, Nord, France. 747,917, canc. Cl. 43.
Societe des Usines Chimiques Rhone-Poulenc, Paris, France. 510,707, ren. 5–27–69. Cl. 18.
Sony Corp., Shinagawa-Ku, Tokyo, Japan. 869,992–3, pub. 3–11–69. Cl. 21.
Sound Of Music, Inc., St. Paul, Minn. 869,983, pub. 3–11–69. Multiple Class (Classes 21 and 36).
South Bend Tackle Co. Inc., South Otselic, N.Y. 870,015–16, pub. 3–11–69. Cl. 22.
Southwestern Drug Corp., d.b.a. Truett Laboratories, Dallas, Tex. 848,409, canc. Cl. 51.
Spalding, A. G., & Bros. Inc., Chicopee, Mass. 870,013, pub. 3–11–69. Cl. 22.
Spencer Co., Inc., The, Cranston, R.I. 870 265. Cl. 28.
Sponge Rubber Products Co., The, Shelton, Conn., to The B. F. Goodrich Co., Akron, Ohio. 442,129, ren. 5–27–69. Cl. 1.
Sportabs, Inc.: *See*—
Sportabs International Inc.
Sportabs International Inc., Granada Hills, from Sportabs, Inc., Los Angeles, Calif. 869,936, pub. 3–11–69. Cl. 18.
Spot-O-Gold Corp., Philadelphia, Pa. 870,277. Cl. 101.
Springs Cotton Mills, The, Lancaster, S.C., to Springs Mills, Inc., New York, N.Y. 507,943, ren. 5–27–69. Cl. 42.
Springs Mills, Inc.: *See*—
Springs Cotton Mills, The.
Staley, A. E., Mfg. Co.: *See*—
Shreveport Syrup Co., Inc.
Staley, A. E., Mfg. Co., Decatur, Ill. 514,132. Am. 7(d). Cl. 6.
Standard International Corp., Andover, Mass. 870,276. Cl. 52.
Standard Oil Co., Whiting, Ind., and Chicago, Ill., to The American Oil Co., Chicago, Ill. 442,572, ren. 5–27–69. Cl. 18.
Standard Oil Co., The: *See*—
Vistron Corp.
Standard Toycraft, Inc., Brooklyn, N.Y. 870,020, pub. 3–11–69. Cl. 22.
Stanley Works, The: *See*—
Collins Co., The.
Stat Corp., Needham, Mass. 870,167, pub. 3–11–69. Cl. 44.
State Line Service, Inc., Sussex, N.J. 870,009, pub. 3–11–69. Cl. 22.
Stauffer Chemical Co., New York, N.Y. 869,884, pub. 3–11–69. Cl. 6.
Stebco Industries, Inc.: *See*—
Stebco Products Corp.
Stebco Products Corp., from Stebco Industries, Inc., Chicago, Ill. 870,002, pub. 3–11–69. Cl. 22.
Stein, R., & Co., Inc.: *See*—
Santee Sales Corp.
Stercal, Inc., d.b.a. Oceana Tool Mfg. Co., Venice, Calif. 870,056, pub. 3–11–69. Cl. 23.
Stile-Craft Manufacturers, Inc., St. Louis, Mo. 869,925, pub. 1–21–69. Cl. 13.
Strohmeyer & Arpe Co., New York, N.Y. 72,946, ren. 5–27–69. Cl. 46.
Strohmeyer & Arpe Co., New York, N.Y. 73,116, ren. 5–27–69. Cl. 46.
Strohmeyer & Arpe Co., New York, N.Y. 73,225, ren. 5–27–69. Cl. 46.
Studebaker Corp., South Bend, Ind. 870,042, pub. 3–11–69. Cl. 23.
Sunset Magazine, Inc., San Francisco, to Lane Magazine & Book Co., Menlo Park, Calif. 257,313, ren. 5–27–69. Cl. 38.
Supermarkets General Corp., Cranford, from Louket Markets, Inc., Jersey City, N.J. 869,880, pub. 3–11–69. Cl. 4.
Supermarkets General Corp., Cranford, from Louket Markets, Inc., Jersey City, N.J. 870,210, pub. 3–11–69. Cl. 51.
Supermarkets General Corp., Cranford, from Louket Markets, Inc., Jersey City, N.J. 870,223, pub. 3–11–69. Cl. 52.
Swank, Inc., Attleboro, Mass. 747,883, canc. Cl. 37.
Swift & Co., Chicago, Ill. 747,779, canc. Cl. 6.
Sydney-Thomas Corp., The, Cincinnati, Ohio. 747,881, canc. Cl. 37.
Syntex, Inc.: *See*—
Telron, Inc.
Taco Tico, Inc., Wichita, Kans. 870,228, pub. 3–11–69. Cl. 100.
Tang Kuen Hung, d.b.a. Yick Loong Fireworks Co., and Kwan Yick Fireworks Co., Des Voeux Road West, Hong Kong. 869,909–10, pub. 3–11–69. Cl. 9.
Tappan Co., The, Mansfield, Ohio. 870,099, pub. 3–11–69. Cl. 31.
Teich, Curt, & Co., Chicago, Ill. 512,353, ren. 5–27–69. Cl. 38.
Telesco Brophey Ltd., Montreal, Quebec, Canada. 870,141, pub. 3–11–69. Cl. 41.
Telron, Inc., from Syntex, Inc., Culver City, Calif. 747,864, canc. Cl. 29.
Tensor Corp., Brooklyn, N.Y. 869,982, pub. 3–11–69. Cl. 21.
Texas Angora Goat Raisers' Association, Uvalde, Tex. 870,233, pub. 3–11–69. Cl. 101.
Texia Corp., Euless, Tex. 870,032, pub. 3–11–69. Cl. 22.
Textron Inc., Providence, R.I. 870,209, pub. 12–31–68. Multiple Class (Classes 51 and 52).
Tharaud, Justin, & Son, Inc., New York, N.Y. 869,918, pub. 3–11–69. Multiple Class (Classes 13, 23, 30, 33, and 42).
Thayer Co., to Thayer, Inc., Gardner, Mass. 512,720, ren. 5–27–69. Cl. 22.
Thayer, Inc.: *See*—
Thayer Co.
Theradyne Corp., Jordan, Minn. 870,170–1, pub. 3–11–69. Cl. 44.
Thermopatch Corp., New York, N.Y. 747,910, canc. Cl. 40.
Thexton Mfg. Co., Hopkins, Minn. 870,084, pub. 3–11–69. Cl. 26.
Thompson, Doris W.: *See*—
Miller, Louise S.
Thompson, George S., Corp., The, Monterey Park, Calif. 747,939, canc. Cl. 46.
Tiago International Ltd., Woodbury, N.Y. 870,218, pub. 3–11–69. Cl. 51.
Tippett & Co. Inc., Needham, Mass. 747,950, canc. Cl. 50.
Toni Co., The: *See*—
Gillette Co., The.

Tonnema N.V., Sneek, Netherlands. 870,180, pub. 4–11–67. Cl. 46.
Topco Associates, Inc., from The Kingston Co., Skokie, Ill. 869,857, pub. 3–11–69. Cl. 1.
Topco Associates, Inc., Skokie, Ill. 869,984, pub. 3–11–69. Cl. 21.
Torino Mfg. Co.: *See*—
Mimeles, W., Co., Inc.
Toro Mfg. Corp., Minneapolis, Minn. 870,059, pub. 3–11–69. Cl. 23.
Travelers Reservations Assn., Meridian, Miss. 747,967, canc. Cl. 100.
Trend Mills, Inc., Rome, Ga. 870,148, pub. 3–11–69. Cl. 42.
Truett Laboratories: *See*—
Southwestern Drug Corp.
Trustees of Columbia University in the City of New York, The, New York, N.Y. 870,123, pub. 3–11–69. Cl. 38.
Turkeltaub & Schiffer, Inc., Maspeth, N.Y. 870,149, pub. 3–11–69. Cl. 42.
Turner, William, (Kismet) Ltd., Sheffield, to Kismet Ltd., Bedford, England. 507,945, ren. 5–27–69. Cl. 26.
Turomatic Machine Co., Inc., Hawaiian Gardens, Calif. 870,075, pub. 3–11–69. Cl. 26.
UOP Bostrom Division: *See*—
Universal Oil Products Co.
Union Carbide Corp.: *See*—
National Carbon Co., Inc.
Union Mfg. Co., New Britain, Conn. 870,041, pub. 3–11–69. Cl. 23.
United Oil Mfg. Co., Erie, Pa. 869,888, pub. 3–11–69. Cl. 6.
U.S. Aces, Dallas, Tex. 870,260, pub. 3–11–69. Cl. 200.
U.S. Gypsum Co., to U.S. Gypsum Co., Chicago, Ill. 510,409, ren. 5–27–69. Cl. 12.
United States Rubber Co., to Uniroyal, Inc., New York, N.Y. 757,850. Am. 7(d). Cl. 35.
U.S. Sanitary Specialties Corp., to Sterling Drug, Inc., New York, N.Y. 511,486. Am. 7(d). Cl. 6.
Unitek Corp., Monrovia, Calif. 870,082, pub. 3–11–69. Cl. 26.
Unitek Corp., Monrovia, Calif. 870,157, pub. 3–11–69. Cl. 44.
Universal Oil Products Co., Des Plaines, Ill. 869,895–7, pub. 3–11–69. Cl. 6.
Universal Oil Products Co., d.b.a. UOP Bostrom Division, Des Plaines, Ill. 869,972, pub. 3–11–69. Cl. 19.
Universal Oil Products Co., Des Plaines, Ill. 870,263. Cl. 23.
Upjohn Co., The, Kalamazoo, Mich. 869,940, pub. 3–11–69. Cl. 18.
Utah-Idaho Sugar Co., Salt Lake City, Utah. 513,719, ren. 5–27–69. Cl. 46.
Uts Potato Chip Co., Inc., Hanover, Pa. 751,404. Am. 7(d). Cl. 46.
Vaughn, Charles M., d.b.a. Vulcan Probe Co., Covina, Calif. 870,158, pub. 3–11–69. Cl. 44.
Vernor-Wagner Corp., Golf Manor, Ohio. 870,173, pub. 3–11–69. Cl. 45.
Vertex Distributing Inc., Los Angeles, Calif. 869,913, pub. 3–11–69. Cl. 12.
Vesta Corp., from Funtime, Inc., Denver, Colo. 870,106, pub. 3–11–69. Cl. 84.
Vick Chemical Co., to Chesebrough-Pond's Inc., New York, N.Y. 507,611, ren. 5–27–69. Cl. 51.
Vistron Corp., from The Standard Oil Co., Cleveland, Ohio, 869,882, pub. 7–2–68. Cl. 5.
Vita Food Products Co., Los Angeles, Calif., to National Biscuit Co., New York, N.Y. 258,894, ren. 5–27–69. Cl. 46.
Vita Zahnfabrik H. Rauter K.G., Postfach, Germany. 870,156, pub. 3–11–69. Cl. 44.
Vitaminerals, Inc., Glendale, Calif. 510,035, ren. 5–27–69. Cl. 46.
Vitarine Co. Inc., The, Springfield Gardens, N.Y. 869,942, pub. 3–11–69. Cl. 18.
Vulcan Probe Co.: *See*—
Vaughn, Charles M.
Walker Mfg. Co., Racine, Wis. 870,235, pub. 3–11–69. Cl. 101.
Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 870,172, pub. 3–11–69. Cl. 45.
Washington Forge, Inc., Englishtown, N.J. 870,053, pub. 3–11–69. Cl. 23.
Wassell Organization Inc., Westport, Conn. 870,103, pub. 3–11–69. Cl. 32.
Watchemoket Optical Co., Inc., Providence, R.I. 870,077, pub. 3–11–69. Cl. 26.
Waterman, L. E., Co., New York, N.Y., to Waterman-Bic Pen Corp., Milford, Conn. 72,285–6, ren. 5–27–69. Cl. 11.
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Waterman, L. E., Co.
Weiler Products: *See*—
Weiler, William H., and Inez B. Weiler.
Weiler, William H., and Inez B. Weiler, d.b.a. Weiler Products, Santa Clara, Calif. 870,154, pub. 3–11–69. Cl. 44.
Weld Mold Co., Brighton, Mich. 870,109, pub. 3–11–69. Cl. 34.
West India Oil Co., Bayonne, N.J. ,to Humble Oil & Refining Co., Houston, Tex. 254,842, ren. 5–27–69. Cl. 15.
West Point Lawn Products, to West Point Products Corp., West Point, Pa. 513,072, ren. 5–27–69. Cl. 23.
West Point Products Corp.: *See*—
West Point Lawn Products.
West Point-Pepperell, Inc., West Point, Ga. 870,146, pub. 3–11–69. Cl. 42.
White, Jack E., d.b.a. J.W. Records, Washington, D.C. 747,876, canc. Cl. 36.
Wilbur Chocolate Co., Inc.: *See*—
Wilbur, H. C., & Sons.
Wilbur, H. C., & Sons, Philadelphia, to Wilbur Chocolate Co., Inc., Lititz, Pa. 72,813, ren. 5–27–69. Cl. 46.
Williams, J. B., Co., Inc., The, New York, N.Y. 869,948, pub. 3–11–69. Cl. 18.
Willow Leather Products Corp., Newark, N.J. 747,773, canc. Cl. 3.
Winkenweder & Ladd, Inc., to Gold Eagle Products Co., Chicago, Ill. 510,217, ren. 5–27–69. Cl. 6.
Wise Potato Chip Co.: *See*—
Borden, Inc.
Wonder Products Co., Collierville, Tenn. 870,033, pub. 3–11–69. Cl. 22.
Woodbury, John H., Inc., Cincinnati, Ohio. 514,144, ren. 5–27–69. Cl. 52.
Wooster Brush Co., The, Wooster, Ohio. 512,479, ren. 5–27–69. Cl. 29.
Wyandotte Chemicals Corp., Wyandotte, Mich. 869,889–90, pub. 3–11–69. Cl. 6.
Yardage Publications: *See*—
Reid, Eugene G.
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Yetter, Harry G., Joan Whalen, and Joseph H. Whalen, 870,046, pub. 3–11–69. Cl. 23.
Yick Loong Fireworks Co.: *See*—
Tang Kuen Hung.
Zoltovska, Maria, (born Frankl), Paris, France. 747,908, canc. Cl. 40.

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